OECD E-GOVERNMENT FLAGSHIP REPORT "The E-Government Imperative"

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"The E-Government Imperative" report is circulated for approval by the Committee. This represents the final results of a first phase of work on e-government.

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JT00140718
| Box 1 | The Nordic “Green Corridor”- data sharing makes access easier .................................................19 |
| Box 2 | Denmark: User benefits expected from health portal .................................................................22 |
| Box 3 | Digital Signatures in OECD Countries .........................................................................................28 |
| Box 4 | France: Protection of privacy with regard to the need for links between electronic files .................................................................30 |
| Box 5 | Innovative funding mechanisms in the United Kingdom ..........................................................33 |
| Box 6 | Canada: Central funding criteria ...............................................................................................35 |
| Box 7 | Italy: Central funding criteria ................................................................................................36 |
| Box 8 | United States: “Pass the hat” – pooled agency funding of projects ........................................36 |
| Box 9 | Mexico: Co-ordination of the government budget process ........................................................36 |
| Box 10 | Finland: Shared Infrastructure ..................................................................................................37 |
| Box 11 | Finland: Smart Card Case Example .........................................................................................38 |
| Box 12 | European Commission: E-Europe objectives ........................................................................42 |
| Box 13 | Finland: Explicit goals .............................................................................................................43 |
| Box 14 | Denmark: User feedback mechanisms .......................................................................................45 |
| Box 15 | Finland: Channel strategy ........................................................................................................46 |
| Box 16 | Canada: Government-wide multi-channel service transformation ...........................................47 |
| Box 17 | Japan: Guidelines for handicapped accessible Web site contents ..........................................48 |
| Box 18 | Korea: Preventing corruption by improving transparency in administration ..........................50 |
| Box 19 | Italy: Mo-Net – Modena’s civic network for e-consultation ....................................................53 |
| Box 20 | Canada: Creating an Agile Work Force within Existing and Evolving Policy and Accountability Structures ........................................................56 |
| Box 21 | Estonia: Mobilising with a unifying concept and presidential leadership ................................58 |
| Box 22 | Korea: the role of the leadership in e-government ................................................................59 |
| Box 23 | Finland: Lower-management leadership ..................................................................................60 |
| Box 24 | Japan: The IT Strategy Headquarters ....................................................................................61 |
| Box 25 | Principle for Successful E-Government Leadership ...............................................................62 |
| Box 26 | Mexico: Senior level committees .............................................................................................63 |
| Box 27 | Italy: Network of regional competence centres (RCCs) ..........................................................64 |
| Box 28 | Ireland: Peer review ..............................................................................................................65 |
| Box 29 | Germany: SAGA – standards and architecture for e-government applications ........................65 |
| Box 30 | Australia’s Business Authentication Framework (BAF) ..........................................................66 |
Box 31  European Commission: World Leaders in E-Procurement ........................................67
Box 32  Japan: Shared infrastructure – Kasumigaseki WAN ..................................................69
Box 33  Ireland: Public Services Broker – an approach to middleware ....................................70
Box 34  Sweden: Wilma – information system for processing migration cases ..............................70
Box 35  Korea: Privacy and data sharing between agencies .....................................................73
Box 36  Specialist IT skills .......................................................................................................76
Box 37  IM skills for managers and specialists .........................................................................77
Box 38  Information society skills for managers ........................................................................78
Box 39  United Kingdom: E-Envoy – an information skills map ..............................................79
Box 40  United States: The State of Washington’s applications template ..................................79
Box 41  Germany: The Net Readiness Analysis – a KPMG approach to BundOnline 2005 ..........79
Box 42  United States: CIO University ....................................................................................80
Box 43  Canada: Change management skills ............................................................................81
Box 44  United States: Building the e-government work force ................................................82
Box 45  Japan: Timeline of e-government training ....................................................................82
Box 46  Denmark: Innovative partnership arrangements ..........................................................85
Box 47  New Zealand: Funding for Risk ....................................................................................88
Box 48  United States: Risk and Responsibility .......................................................................89
Box 49  Italy: E-government observatory ..................................................................................94
Box 50  Canada: Post-implementation reviews for e-government projects .................................95
Box 51  Netherlands: The need for evaluation tools ..................................................................96
Box 52  Australia: National Evaluation of E-government, February 2003 ...............................98
Box 53  Canada: The GOL intermediate benefits review, Victoria, 2001 .....................................100
Box 54  Finland: E-government-related surveys .......................................................................101
Box 55  United Kingdom: The People’s Panel ..........................................................................102
Box 56  Australia: Victoria Tourism Online ..............................................................................102
Box 57  United Kingdom: The Office of National Statistics’ customer segmentation and Web site testing ..............................................................................................................103
Box 58  Canada: Guide for the Service Improvement Initiative ................................................103
EXECUTIVE SUMMARY

INTRODUCTION

E-government is more about government than about “e”

1. Since the advent of computers, and more recently the Internet, pressure on governments to perform better has increased, and ICTs have provided them with the capacity to do so via e-government. The impact of e-government at the broadest level is simply better government by enabling better policy outcomes, higher quality services, greater engagement with citizens and by improving other key outputs identified. Governments and public administrations will, and should, continue to be judged against these established criteria for success.

2. E-government initiatives refocus attention on a number of issues: how to collaborate more effectively across agencies to address complex, shared problems; how to enhance customer focus; and how to build relationships with private sector partners. Public administrations must address these issues if they are to remain responsive.

THE CASE FOR E-GOVERNMENT

E-government improves efficiency

3. ICTs enable efficiency improvements 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

4. Adopting a customer focus is a core element of member countries’ reform agendas. Successful services are built on an understanding of user requirements, and online services are no different. A customer focus means that a user should not have to understand complex government structures and relationships. 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 light of demand and user value, as part of an overall service channel strategy.

E-government helps achieve specific outcomes…

5. The Internet can help stakeholders share information and ideas and contribute to specific policy outcomes. For example, online information can boost use of an educational or training programme; sharing of information in the health sector can improve resource use and patient care; and sharing of information 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.
…and can contribute to broad policy objectives

6. E-government contributes to other economic policy objectives by reducing government expenditures through more effective and efficient programmes, improving business productivity through administrative simplification and promoting the information society and ICT industry.

E-government can be a major contributor to reform

7. All OECD governments are facing the issue of public management reform. 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.

E-government can help build trust between governments and citizens

8. 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, it can help an individual’s voice to be heard in a broad debate, harnessing ICT to encourage citizens to think constructively about public issues and assessing the impact of applying technology to open up the policy process. Policies addressing information quality and accountability are also needed. However, few expect e-government arrangements to replace completely traditional methods of information provision, consultation and public participation in the foreseeable future.

BARRIERS TO E-GOVERNMENT

Legislative and regulatory barriers can impede the uptake of e-government

9. In order for e-services to gain widespread acceptance, they must have the same standing as the equivalent paper processes. Additionally, current frameworks based on the assumption that agencies work alone (e.g. performance management, accountability frameworks and an interdiction of data sharing) inhibit collaboration. Finally, privacy and security need to be ensured before online services can advance.

10. Confusion about what exactly is in the law is another problem. Agencies may need clarification on what they can and cannot do, particularly in the areas of data security and technical standards. Especially in the case of small agencies with few resources, the cost of developing an e-government project in the wrong direction or using the wrong standards is potentially prohibitive.

Budgetary frameworks can restrict e-government initiatives

11. In many OECD countries, existing budgetary arrangements act against efficient e-government by funding through traditional government silos, and by not recognising ICT expenditure as an investment. Organisations need incentives for cross-organisational projects and tools for measuring returns on investment. This can be achieved through a government-wide approach to the assessment of e-government benefits and the sharing of savings.

12. To finance seamless government services and shared infrastructure, budgetary regulations should facilitate co-operative funding mechanisms such as co-ordinated bids for new funds and the pooling of
funds. Additionally, ICT expenditure should be treated as an investment, recognising future benefits and providing a degree of certainty for future funding. This would focus ICT spending on developing cost-effective solutions.

*The adoption of e-government solutions can lag behind technological change*

13. Governments face the challenge of fostering the development of e-government while there is still great uncertainty regarding technological change and negative impacts (e.g. system vulnerability and illegal activities). Technological developments are moving very fast and it is difficult to anticipate future impacts in detail.

14. Broad approaches for adapting to emerging technologies include: technology neutral legislation and regulation; flexibility within broad regulatory frameworks and adaptation of current laws to a digital world; performance requirements rather than technical specifications when procuring new technologies; and increasingly looking to international co-operation to harmonise approaches to transborder issues.

*The digital divide impedes the benefits of e-government*

15. Online access has advantages that are impossible to replicate offline, such as the drawing together of information, independent search capacity and interactive policy consultation. Within OECD countries, however, there are significant differences in access to ICTs and the Internet. Generally the most disadvantaged have the lowest levels of access, yet they also often have high levels of interaction with government. If these individuals cannot access e-government services, they will miss out on the benefits of e-government. Improved online access will increase the pool of potential users of e-government services; this plainly justifies that policies to reduce the digital divide be pursued.

**IMPLEMENTING E-GOVERNMENT**

*E-government challenges existing ways of working*

16. ICT needs to be incorporated into a package of related changes and reforms (including greater teamwork, flexibility in working arrangements and remuneration and enhanced knowledge management practices) that challenge public administration’s current internal governance frameworks. There will not be a single model of an e-government enabled organisation. E-government co-ordinators should use ICTs as a tool to facilitate change, and should not attempt to restructure public administrations around current technology.

*E-government requires leadership*

17. The leadership and enthusiasm of individuals and organisations has driven many e-government advances. Leadership requires vision, commitment and actions that are consistent with the message (leading by example). In the early stages of e-government, leadership is needed to gain acceptance of concepts and benefits, and to put implementation frameworks in place. At a more advanced stage, leadership is needed to manage change and sustain support for the project, especially as benefits may take time to emerge.
18. Indeed, leadership is necessary at all levels, from the political to the administrative. Political leadership makes e-government a priority and guides transformation by putting it in a broader context. Within administrations, leaders help translate political vision into an action plan.

**Seamless government services will draw agencies closer together**

19. Seamless government services require different agencies to work closely together. Their collaboration cannot be merely technical, but must involve a deeper engagement in terms of **shared customers**. As services become more complex (and expensive), collaboration will also be driven by the need for efficiency. E-government co-ordinators should facilitate planning for seamless services, fund catalytic projects, clarify data-sharing arrangements and address accountability issues. When current ways of working make it difficult for agencies to collaborate, barriers to co-operation need to be overcome.

20. Yet co-ordinators must resolve a central dilemma – how can systems and information be shared with agencies still maintaining responsibility for results and operations? Approaches adopted to deal with this issue include peer reviews, a whole of government approach, standards and frameworks, interoperability, shared infrastructure and evaluated pilot projects.

**Managers need e-government skills**

21. E-government increases the need for ICT-related skills in government. The skills required for e-government are **not simply technical**, as general managers also need broad skills to engage in the ICT decision-making process. Necessary skills include a basic technical understanding (IT literacy), but also an understanding of information management and the information society. Managers must be able to lead (and not be led by) the organisation’s IT department and outside partners, and must be able to integrate the organisation’s ICT strategy with its broader goals.

22. Furthermore, traditional management skills need to be updated and strengthened to deal with the impact of e-government. Additional competencies are needed in areas such as performance management, accountability frameworks, co-operation and collaboration across departments, and public-private partnerships. Governments should take steps to identify and ensure the skills needed for effective e-government.

**E-government involves public-private partnerships**

23. Working with the private sector is a feature of almost all e-government activity. Governments do this to access skills and products, reduce risk, draw in private capital and integrate provision of government services with private-sector channels. More innovative arrangements, involving flexible, longer-term relationships with partners sharing risks and rewards, can help respond to changing technologies and opportunities. E-government co-ordinators, with procurement authorities and key agencies, should develop an **e-government public-private partnership framework**. As part of this framework, an examination of audit and accountability arrangements covering ICT partnerships would be helpful.

**Implementing e-government can be risky, expensive and difficult**

24. Implementing e-government can be risky, expensive and difficult, and **requires change**. Current practices tend to resist pressures for change, leading to wasted opportunities and unnecessary expenditure. Development of e-government implementation is also hampered by ineffective project management,
technology failures, problems of “first mover disadvantage”, funding discontinuities, and unrealistic political demands. When ICT projects go wrong, cost overruns and service delivery failures can be highly visible. Moreover, Internet-based service options raise issues such as changing customer expectations, heightened privacy concerns and public-private boundaries.

**Monitoring and evaluation are essential to effective e-government**

25. E-government implementers should articulate the impacts and benefits of a programme, in order to justify continued political and public support. Assessment should be realistic and done within time frames that are useful to decision-makers. Priority should be given to the assessment of demand, benefits and service quality. **Assessing demand remains a major weakness** in OECD countries’ e-government programmes. As services become more complex and expensive, it is increasingly important to assess this demand and incorporate user feedback.

**FUTURE OPPORTUNITIES AND NEXT STEPS**

**Governments are under pressure …**

26. New technologies are forcing governments to be particularly attentive to time. Unlike other aspects of government, technologies evolve very quickly and equipment rapidly becomes out of date. The decisions taken today commit administrations to a future that is changing, and not fully understood. Errors are costly financially, but are especially worrisome in terms of the trust of citizens and the businesses, which have high expectations. For all OECD countries, the transition to e-government is an opportunity for government to show its capacity to adapt. Economic development in this competitive, rapidly changing world will be penalised by delays in implementing e-government reforms.

27. At the same time, traditional government is adapting slowly to the information revolution and tends to treat it as only one among multiple challenges with which it is confronted.

**… and must act, but wisely and with the right tools**

28. In order to make the right decisions and avoid falling behind, governments must identify and resolve the different issues thrown up by the transition period during which traditional and e-government co-exist. Governments must at the same time decide on, guide and control the transformation of government into e-government. This radical change of structures and traditional methods of government operations takes place by establishing real collaboration between agencies and between the different levels of government. Monitoring and evaluation of results will be an essential tool for policy makers to limit the margins for error when putting future strategies in place. Finally, service provision, which is the focus of strong attention, is only part of the potential of e-government. The use of ICT to strengthen the involvement of citizens and businesses in public decision making must progress at the same time.

29. As long as these different steps have not successfully undertaken and the necessary tools put in place, e-government will remain a misleading, cosmetic operation.
GUIDING PRINCIPLES FOR SUCCESSFUL E-GOVERNMENT

Vision/political will
1 Leadership and Commitment: Leadership and commitment, at both political and administrative levels, are crucial to managing change. Committed leaders are required to deal with disruptive change, to persevere when benefits take time to emerge, to respond when things go wrong, and to establish visions and plans for the future.

2 Integration: E-government is an enabler, not an end in itself. It needs to be integrated into broader policy and service delivery goals, broader public management reform processes and broader information society activity.

Common frameworks/co-operation
3 Inter-agency collaboration: E-government is most effective when agencies work together in customer-focussed groupings of agencies. Agency managers need to be able to operate within common frameworks to ensure interoperability, maximise implementation efficiency and avoid duplication. Shared infrastructure needs to be developed to provide a framework for individual agency initiatives. Incentives can help encourage collaboration.

4 Financing: ICT spending, where appropriate, needs to be treated as an investment, with consideration of projected streams of returns. E-government requires a level of certainty of future funding to provide sustainability to projects, avoid wasting resources and gaining maximum benefit from given funding levels. A central funding programme could help foster innovation and allow for key demonstration projects.

Customer focus
5 Access: Governments should pursue policies to improve access to online services. Many advantages of online government information and services are not replicable offline, so that those who lack access will be excluded unless action is taken.

6 Choice: Customers should have choice in the method of interacting with government, and the adoption of online services should not reduce choice. A principle of “no wrong door” to access the administration should be adopted. Services should be driven by an understanding of customer needs.

7 Citizen engagement: E-government information and services should be of high quality and engage citizens in the policy process. Information quality policies and feedback mechanisms will help maximise the usefulness of information provision and strengthen citizen participation.

8 Privacy: E-government should not be delivered at the expense of established expectations of privacy protection, and should be approached with the goal of protecting individual privacy.

Responsibility
9 Accountability: E-government can open up government and policy processes and enhance accountability. Accountability arrangements should ensure that it is clear who is responsible for shared projects and initiatives. Similarly, the use of private sector partnerships must not reduce accountability.

10 Monitoring and evaluation: Identifying the demand, costs, benefits and impacts of e-government is crucial if momentum is to be sustained. E-government implementers cannot expect support if they cannot articulate potential benefits.
SECTION 1. OBJECTIVES, SCOPE AND CONTEXT

1.1 Introduction

30. This report takes as its basic premise that e-government provides the capacity to reform the way public administrations operate and result in more customer-focused, responsive government. This requires overcoming major challenges. This publication examines the potential and impact of e-government and the changes required to maximise its benefits.

31. Governments are major users of information and communication technologies (ICTs). In OECD countries, government use of ICTs is now well established and an integral part of how governments do business. From an initial focus on mass processing tasks, using mainframe computers in areas such as collecting national statistics and processing taxation returns, government use of ICTs has widened to encompass a full range of technologies and applications. For almost a decade, governments have used Internet-based technologies, particularly the World Wide Web and e-mail. There is scarcely an aspect of government activity that does not involve the use of ICTs.

32. It would be surprising if this were not the case. ICTs have become a crucial element of national infrastructure, underpinning economic and social activity in all OECD countries. Given the scale of their activities and the diverse nature of their business across all forms of economic activity, governments have derived significant benefits from embracing ICTs. They have often been at the forefront in the adoption of specific applications and have used their scale and position in local markets to foster the development of ICT production industries.

33. Governments have embraced the Internet. The emergence of the Internet and parallel developments in processing capacity and data storage over the 1990s have significantly altered the environment for ICT use across society and in government. While the longer-term effects of this "digital revolution" are likely to be profound, these developments have already increased pressure on governments to perform and provided them the capacity to do so.

34. Governments were not immune to the attractions of what is now seen as the "dot-com" bubble. However, they now understand better that real value can be obtained through the use of ICT, but that the need for basic assessments of benefits and costs, risks and opportunities remains.

35. In response to these new capabilities, OECD governments have issued e-government strategies, set targets and established e-government co-ordination bodies. In a number of countries, e-government is the specific responsibility of a minister; in others, it is part of the information society or other ministerial responsibilities. These responses suggest that, primarily owing to the emergence of the Internet, there has been a qualitative shift in the role governments assign to ICTs. This parallels similar responses in the broader economy, where the Internet’s potential had led to the information society and e-commerce policies, initiatives and co-ordinating structures.
1.2 Definitions, objectives, structure and methodology

36. Defining e-government. There are many definitions of e-government, and the term itself is not universally used. The differences are not just semantic and may reflect priorities in government strategies. The definitions fall into three groups:

- At the broadest level, e-government is equated to the use of ICTs in government. While the focus is generally on the delivery of services and processing, the broadest definition encompasses all aspects of government activity.

- E-government is defined as Internet (online) service delivery and other Internet-based activity such as e-consultation.

- E-government is defined as a capacity to transform public administration through the use of ICTs or indeed is used to describe a new form of government built around ICTs. This aspect is usually linked to Internet use.

37. Definitions and terms adopted by individual countries have shifted, as priorities change and as progress is made towards particular objectives. This is as it should be; the area is a dynamic one and policies and definitions need to remain relevant. In the context of the OECD E-Government Project, the term “e-government” is defined as:

<table>
<thead>
<tr>
<th>OECD Definition of E-Government</th>
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<tr>
<td>The use of information and communication technologies, and particularly the Internet, as a tool to achieve better government.</td>
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38. While the relative importance of the Internet in the overall framework of ICT use in government will be a matter for debate for a long time to come, this report focuses more on use of ICT that involves the Internet than other, more established ICT applications. This is in recognition of the fact that use of the Internet is in its relative infancy, and as such raises more issues for public administrators and governments generally than the use of more established technologies. The Internet, building on the established base of ICT use by governments, offers new opportunities for governments to do their job better, and it is primarily for this reason that governments are focusing on it. However, e-government is more than Internet use or online service delivery. Internet use by governments cannot, and indeed should not, be isolated from the broader “digitisation” of government activity as a whole; the issue is therefore one of emphasis.

39. Objective and structure. As will become clear in the course of this report, it is well recognised that changes involving ICTs need to be accompanied by broader organisational change if they are to be effective; merely introducing ICTs into existing organisations and work processes will not produce the desired improved outcomes. This report aims to identify what needs to change if e-government benefits are to be maximised. It is designed to assist e-government practitioners and those concerned with the modernisation and reform of public administrations. It analyses country experiences and good practices, identifies key challenges and impacts, and sets down possible strategies and guidelines as a framework for action by individual countries. There is no single path to good governance outcomes via e-government, and each country’s action will reflect its individual governance and economic and social circumstances and priorities.
40. In accord with the project’s priorities, this report does not evaluate countries’ e-government activity, nor does it attempt to rank or undertake a comparative analysis of progress in advancing e-government objectives. A number of organisations have undertaken statistical analysis of e-government initiatives, and some of this analysis is included in Annex 3. However, the OECD E-Government Working Group feels that existing statistical studies are misleading, as they give only a shallow picture of e-government and do not take into account country priorities, service quality, or any of the back-office changes that this report argues are essential for e-government. The OECD is currently laying the groundwork for further analysis of this issue, including eventual quantitative evaluations (see the section on “Monitoring and Evaluation”).

41. Instead, this report seeks to be forward looking and to consider the longer-term vision by addressing the following questions:

- Where are we now, and where are we going?
- How can governments meet future challenges?
- What are the pathways to the longer-term vision?

42. More specifically, for the purposes of this report, the full range of government public administration activity is addressed – planning and policy making, service delivery, e-consultation and internal management. Particular attention is paid to experiences at national government level, although relations between national and other levels of government are examined insofar as the latter are partners in meeting national policy objectives.

43. The study focuses on governance issues and impacts, that is, on ways that e-government can help governments do their job better by reinforcing good governance objectives. It takes the perspective that the value of e-government initiatives can be assessed against long-standing governance principles, such as efficiency and accountability. It recognises that introducing e-government initiatives will challenge existing governance frameworks, such as those dealing with how public administrations operate, and considers potential solutions.

44. The findings and observations presented in this study emerge from the deliberations and guidance of the project’s working group; from the series of project seminars, involving commissioned papers and the seminar deliberations; from papers and information prepared by member countries; and from analysis of countries’ e-government strategies and other material. As will appear, there are major deficiencies in data on e-government activities, so that it has been impossible to carry out a detailed analysis of comparable quantitative information.

45. The examples and information used in this text come largely from the OECD Working Group on E-Government. This group consisted of 12 countries: Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, Korea, Mexico, Netherlands, United States. The OECD E-Government Task Force also undertook an in-depth pilot study of e-government in Finland, and many examples and case studies stem from this report, “E-Government in the Finnish Central Administration”. Country examples in the report are taken from ministries and agencies, as well as at the national level.

46. The structure of this report is as follows:

- Section 1 provides an introduction and context and sets out objectives and definitions.
Section 2 examines the case for e-government; the impact of e-government on what governments are trying to achieve and its value to users of services, drawing on experience of member countries.

Section 3 looks at barriers to e-government.

Section 4 focuses on key strategic implementation issues and the changes that may be necessary to maximise the benefits from e-government.

Section 5 identifies future challenges, and the suggested approaches and guidelines that have emerged from the study.

An Annex links the report to consultant and other background papers related to the study.

A Glossary provides definitions of terms used in the report.
SECTION 2. THE CASE FOR E-GOVERNMENT

47. Public management reforms to enhance performance continue to be an important issue for all OECD governments. The need to respond to changing pressures resulting from globalisation, fiscal demands, evolving societies and customer expectations has meant a continuing process of reform, notwithstanding significant changes over the last two decades. While common elements can be identified, particularly the need to do more with less, the timing, pace and nature of reforms have been diverse, reflecting the conditions for reform and the strategies adopted in each country.

48. Reforms have addressed the full range of good governance objectives, seeking legitimacy, rule of law, transparency, accountability, integrity, effectiveness, coherence, adaptability, participation and consultation. In many areas, ICTs have been an important enabling tool for reform. While the pursuit of efficiency gains and the effective delivery of programme outcomes have been main drivers of ICT use in government, the focus has turned more recently to other good governance objectives, such as improving services, increasing accountability and transparency and facilitating consultation and engagement.

49. This section looks at the reasons for embracing e-government as a means of reforming public management and contributing to broader policy objectives. In practice, while a specific e-government initiative can be driven by a single major goal, such as cost savings, most aim to achieve a number of often competing objectives. Drawing on information submitted by working group members, this section discusses the case for e-government:

- **E-government helps improve efficiency in government.** ICTs are a necessary enabler of reforms to the ways in which public administrations work. Improving internal operating systems – financial systems, purchasing and payment arrangements, internal communications and sharing of information – and programme processing and delivery arrangements can generate operating efficiencies and improve performance.

- **Enhanced quality of service** has been a major component of public administration reform over the past two decades, and the use of ICTs to generate improvements in services has been a primary driver for e-government activity. In particular, the use of the Internet has given a major boost to customer-focused, seamless services, which aim to transcend the structure of public administrations. Online services are increasingly seen as part of a broader services strategy, with important customer and efficiency benefits. As users of government services are often obliged to interact with government, user dissatisfaction with the quality of government services can quickly become a major political issue.

- **More effective outcomes** in key policy areas such as health, welfare services, security and education. Ultimately, governments and public administrations exist to deliver policy outcomes, and ICTs are a major enabler across all major policy areas. The use of the Internet to deliver value in these areas is a major preoccupation in member countries.
• Better governance arrangements in themselves will **promote economic policy objectives**. More specific effects may range from impacts on ICT production, e-commerce diffusion and business productivity to indirect effects such as reduced fiscal requirements owing to more effective programmes and efficiencies flowing through to the broader economy.

• E-government can help **forward the reform agenda**. When aligned with modernisation goals, implementing e-government can help administrations focus on the additional changes needed to meet service delivery and good governance concerns. At the same time, it provides some valuable reform tools and builds support from political officials and government employees for achieving those objectives.

• Through citizen engagement, e-government can **improve the overall trust relationship** between government and public administrations. E-government, by improving information flows and encouraging active participation by citizens is increasingly seen as a valuable tool for building trust between governments and citizens.

50. These objectives may involve trade-offs between efficiency and effectiveness, efficiency and openness, accountability and customer focus. When this is the case, priorities will need to be set, but it should not be assumed that such trade-offs are inevitable. For example, it may not be that effectiveness can only be enhanced by a trade-off of efficiency, or, at a more specific level, that seamless government services aimed at effective outcomes can only proceed at the expense of reduced trust in government owing to a lessening of individual privacy.

2.1 E-government and efficiency

51. The search for **efficiency gains** is a major driver of ICT use in government, and most national strategies specifically address this goal. ICT use in government has often been driven by the need to reduce the call on resources, either to reduce overall spending or to allocate funds to higher priority areas. Mass processing tasks, distributed networks of service outlets, payment processes and internal public administration operating processes such as procurement, payroll and human resource management (HRM) all depend on ICTs to operate and will continue to be targets for efficiencies.

52. More recently, Internet-based applications have been deployed, using online filing to cut down costs of data re-entry and checking, to save on communications costs with customers and within government, to use scarce resources such as skilled staff or facilities more efficiently by improving booking arrangements, to replace paper-based application processes and to reform payment and procurement.

53. With the increasing introduction of seamless online government services, significant future efficiencies are likely as a result of greater sharing of data within government and between government and private sectors such as health care and welfare services. Arrangements which allow for re-use of data (ignoring for the moment service quality and greater effectiveness) can create efficiencies by reducing the need for multiple collections from the same customer, data reconciliation and checking, and indeed, from the point of view of the customer, for the need for some services at all. If progress is to be made, the key issues are privacy protection and the need for agencies to operate in a common framework to enable interoperability.

54. Additionally, major savings can be obtained by transforming businesses processes. More recently, the focus has turned to the Internet and online applications in areas such as online data collection to reduce data entry costs, the use of e-procurement and other e-commerce applications, reductions in
publication and distribution costs of government publications and data through online publication. Sharing of common data within and between agencies to reduce collection and data reconciliation costs is emerging as a major focus of efforts to reduce costs within government. It also provides considerable benefit to customers of government services.

55. It is generally thought that greater efficiencies are generated from ICT projects that involve a major transformation of business process than from those that do not. While this is broadly true, the cumulative contribution of micro-efficiencies should not be ignored, even though the absolute amounts involved may not be significant.

Box 1

The Nordic “Green Corridor” – data sharing makes access easier

An example of increased efficiency is the Nordic “Green Corridor” system, in which electronic sharing of information has helped customs officials manage processes with greater speed and at reduced cost. In co-operation with Swedish trade, Finnish customs, Finnish trade and Russian customs, Swedish customs have developed a system to facilitate border crossing when entering Russia for compliant operators. The Green Corridor is based on accreditation of customs processes and a fully electronic chain of information, starting with the Swedish or Finnish trader and ending with the Russian customs officers at point of entry. Via the Internet, Russian customs has access to the trader’s customs declaration submitted online and thus can better plan and perform control measures. This makes mutual risk analyses possible and ensures that control measures are performed only when high risk is perceived.

An approved Swedish or Finnish trader joining the Green Corridor enjoys a release time of a maximum of two hours when entering Russian territory, since all necessary information is already available when the merchandise appears at the border. Special measures ensure the authenticity of submitted information and electronic signatures guarantee consistency from consignor to consignee.

The Green Corridor, an international facilitation measure within the successful Swedish Stairway®, promotes compliance on the international level and makes use of the e-solutions implemented within the Virtual Customs Office of Swedish Customs. True partnership applies since the services of the Virtual Customs Office are also available to approved traders in Finland and the information submitted is available for the three customs administrations in Sweden, Finland and Russia.

2.2 E-government improves service quality

56. The improvement of government services is an objective of all e-government policy statements examined in this study. Indeed, given the emphasis in both policies and in commentary more generally on online service issues and online service targets, one might assume this to be the sole objective of e-government. It has been useful as a way of galvanising public interest in e-government, by articulating a vision (for example, services online by a specific date) often with the broader aim of engagement with information society initiatives more generally. On-line service targets have also been effective in mobilising public administrations to examine the potential of the Internet and related technologies by applying them to existing services.

57. Citizens benefit from online services because they can learn about policy changes that may affect them or specific community activities or proposals at local level and can carry out routine transactions with government, such as payments, on a more convenient basis.

58. The development of the Internet and ICTs generally have enhanced governments’ capacity to focus services on specific groups of customers, and the majority of OECD countries’ e-government strategies reflect this goal. Providing one-stop shops, facilities and services for people with disabilities and
information in different language communities are among the approaches adopted in OECD member countries. The provision of case management services, which draw together a range of programme resources to address individual needs also reflects this approach.

59. From the point of view of users, ICTs have made it easier to integrate the services of individual agencies. To date, this has overwhelmingly concerned Web-based information services, such overall government portals and sub-portals focused on a particular subject or customer group. Such services require co-ordinated activity across agencies, with agreement on standards for metadata, for example. Integrated cross-agency transaction services are starting to emerge, and are under active consideration in many member countries.

60. Specific initiatives adopted to improve service quality include:

- Development of **online portals** focused on particular topics or groups which bring together information and transactions relating to that particular topic or group.

- Measures that facilitate access of **the disabled** to web-based information.

- Provision of information in a range of **community languages**.

- Measures that provide **targeting** within customer groupings, such as the ability to select information by size of business from a business portal, which helps small business find relevant information more readily, or access to information by geographical area.

- Use of **e-mail listings** to provide information, for example release by national statistical agencies of new statistical information customised for specific groups of customers.

- Services that allow **identified users** (without authentication) to access customised-information and services. For example a logon name or password allows for customisation such as by socio-demographic data.

- Services that allow individual **authenticated users** to submit taxation or other forms, to apply for assistance and to file compliance-returns online. Such services require some form of authentication related to the confidentiality and security requirements of the transaction involved. Many countries have realised the benefits of cross-agency authentication systems, and the United Kingdom’s Gateway and Ireland’s Vault projects aim to provide a common authentication point for a range of services. They also provide an important enabler for online mass customisation of services.

2.3 **E-government increases policy effectiveness**

61. Although access and convenience are important drivers of much e-government activity, there is increasing awareness that e-government initiatives can also help achieve important outcomes in major policy areas such as health, education, anti-crime initiatives and security. In fact, efforts to improve enhanced policy outcomes will encompass the full range of the policy sectors addressed by governments. The contribution of e-government to policy outcomes may take many forms, but a characteristic of effective initiatives is use of the networking potential of the Internet to share data more effectively among a range of dispersed stakeholders.
62. E-government initiatives may involve online services that interact directly with end users, for example to provide information and enrolment facilities to boost take-up of a welfare payment programme or online information on education and training options. Initiatives may also involve sharing information among various units of governments and intermediaries, for example in the health sector, where arrangements are made to capture and share more efficiently information on pharmaceutical use and medical services in order to reduce aggregate costs and provide better care to individuals. Such initiatives are being developed in countries such as Finland and Australia.

63. Improved collection of taxes, reduced demand for health services through better use of health information or reduced unemployment payments owing to better matching of the unemployed to vacancies via online job registers can also have a significant impact on government’s fiscal position.

64. Additionally, e-government can help improve social policy. For example, e-government can help administrations promote the use of native languages and provide information about indigenous peoples. It can help form communities of interest around public issues and providing information to specific and disenfranchised groups.

65. An increase in programme effectiveness through the use of ICT will require attention to the following:

- A framework for identifying and assessing the potential contribution to the relevant policy target. Many e-government initiatives have been developed from a supply-side “build and they will come” focus. While this is understandable in the early stages of online service rollout, initiatives need to meet a clear business need if they are to be effective. There is a need to be able to measure potential demand, policy outcomes and quality improvements that can result from e-government initiatives.

- Recognition of the fact that capturing the benefits of better information flows and networking in general is complex in sectors such as health and welfare services and will require both patience and full engagement by stakeholders. Time frames must be realistic, and there may be considerable lags before benefits accrue.

- Sharing of information about individuals between different units of government and between governments and non-government organisations and enterprises raises issues of privacy protection. The need to justify such sharing reinforces the need to articulate clearly the benefits to be reaped.
Box 2

Denmark: User benefits expected from health portal

A collaborative effort to establish a common public health portal on the Internet is a fundamental element of the introduction of digital administration in Denmark. Based upon the initiative of the Danish regions, the health portal initiative became a part of the 2002 economic agreement between the government, the regions and certain local authorities and stressed the project’s importance as a framework for electronic communication in the area of healthcare. Phase one of the portal is expected to be launched at the end of 2003 and run through 2004.

The health portal’s overall purpose is to support the general aims of Danish National Health Service (NHS), including better information and service, quality assurance and improved use of treatment and care resources. It is intended to give targeted access to the NHS, affording users opportunities for information and communication in order to gain insight when necessary into their possibilities for treatment. At the same time, the principle that healthcare problems must as far as possible be solved at the primary treatment level (typically general practitioners – GPs) must be respected.

As a means of facilitating communication between the parties involved in the NHS, it is crucial for the health portal to be seen as a tool capable of being integrated into clinical work in such a manner as to allow healthcare professionals to solve the tasks supported by the portal in a quicker and/or better way.

Security is the first concern for the health portal. Patients may only access their own data following individual authentication via digital signature. Healthcare professionals may access patient data after obtaining the relevant consent and local authentication.

The search engine is expected to be the most frequently used access mode. The quality of search results for the large amounts of varied data that the portal will contain will be highly dependent on the accessibility and quality of metadata. Automatic generation of metadata and use of classifications that match the NHS’s usage are therefore essential.

The portal must support a coherent patient treatment process, including supporting patient opportunities for attending to their own healthcare and their own treatment and for contacting relevant healthcare professionals, and supporting transfer procedures between healthcare professionals involved in the treatment process. Support of patients with chronic illness through home monitoring and telemedicine is envisaged.

To avoid duplication, the portal where possible use information produced under the auspices of the public healthcare authorities. This principle will be reinforced through the establishment of a central editing function and through regional editing environments. The editors will be responsible for further developing and updating a range of information, including profile areas for NHS actors, national waiting list information, patient guidelines, information on healthcare and prevention, etc.

During the first two years, selected counties’ electronic patient medical records are to be integrated. In addition, to ensure more appropriate use of medicines and remedy inappropriate polypharmacy, personal medical profiles will contain a review of the use of prescription medicines. This information will be adapted and used for communication between health-care professionals.

Patients will also be able to communicate with their GPs through electronic appointments, e-mail consultations and ordering of repeat prescriptions. There will also be a pilot project on GPs’ receipt of test results from medical laboratories. The health portal will also support communication between general practitioners and hospitals concerning examination information, clinical guidelines, etc.

Source: Fjeldberg (2002).
2.4 E-government contributes to economic policy objectives

66. *The New Economy: Beyond the Hype* (OECD, 2001) assessed the impact of ICTs on economic growth and indicated that assessment is difficult in this area, particularly for activities within the government sphere. E-government activity may generate savings for governments by reducing the need for outlays, but the economic impact will depend on how these savings are used. Accordingly, no firm conclusions as to the scale of aggregate impacts can be drawn; moreover, as will be seen, assessment of impacts at the specific project level presents significant difficulties.

67. Online services have already played a strong role in **improving business productivity** and assisting in the start-up of new enterprises. In many OECD countries, administrative simplification is a priority, especially as regards policies and services for small businesses, as government requirements can have a major impact on their viability. Initiatives have involved reducing compliance burdens by making business registration requirements accessible online, enabling online filing of taxation forms directly from accounting software used by businesses, providing online access or filing of forms relating to unemployment insurance or statistical reporting and sharing data collected from businesses among different agencies. Governments have also developed online business portals to provide more efficient access to information produced by business assistance agencies on issues such as market trends, export opportunities and assistance programmes. Portals have been used to draw together information from a range of agencies, often at different levels of government.

68. E-government is also seen as a means of promoting broader **information society and e-commerce policies**. Government use of online applications for service delivery and government business processes can provide a demonstration effect which can help lead to the take-up of e-commerce and the Internet across the economy more broadly. This is a common goal of countries' information society and e-government strategies, though its success remains difficult to assess. Elements of this policy may include:

- Government acting as a **“leading-edge” user**, adopting emerging applications to assist in their broader take-up across the economy. For example, governments have been urged to adopt smart card or specific security applications in the hopes that this will provide a critical mass for broader use. In a context of promoting innovation, these approaches can be worthwhile, particularly if specific funding is forthcoming.

- Developing or adopting **policies and standards** which can be applied across government and broader public sector applications, in order to promote common standards and influence the potential market. Sweden and Australia, for example, have adopted policies to share authentication infrastructure between government and the banking sector to defray costs and promote take up, and thus improve the business situation for both parties.

- E-government services can be seen as a rationale for **take up of the Internet**, thus contributing not just to social policy objectives to reduce the digital divide but also, more broadly, to the value of online access in the community (the "network effect") and thus to the demand for e-services and e-commerce.

- Government **direct consumption of ICT goods and services** can be significant and is often more stable than private-sector demand. Government demand for communications capacity, particularly in non-metropolitan areas, can influence market decisions to roll out capacity. Additionally, government demand for ICT can increase demand for locally produced ICT products and services, and government ICT procurement policies often take account this objective. Governments can also help develop ICT skills in the economy.
2.5 **E-government can help forward the public reform agenda**

69. The promised benefits of e-governments do not take place simply by digitising information and placing it on-line. E-government services continue to be embedded in the environment of today’s public administrations and therefore remain limited by what these administrations are capable, and willing, to do. The term “e-government”, as used by the OECD E-Government Project, applies to the use of ICT as a tool to achieve better government. Thus, e-government is not about business as usual, but should instead focus on using ICT to transform the structures, operations and, most importantly, the culture of government.

70. Reform of the public administration has been on the agendas of most OECD government’s well before the advent of the term “e-government”. But e-government is an important component of today’s reform agendas because it: 1) serves as a tool for reform; 2) renews interest in public management reform; 3) highlights internal inconsistencies; 4) underscores commitment to good governance objectives.

71. As a reform tool, ICT use in government makes it easier to monitor the efficiency and effectiveness of service delivery, tying individual output to overall project objectives. It has been used to simplify and make more transparent financial, case management and human resource management processes. Such tools are only effective, however, if they are linked to public management objectives and used as part of an overall change management strategy.

72. E-mail and electronic communications technologies have laid the groundwork for the much heralded “webbed” or non-hierarchical administration by allowing collaborative editing of documents, broader sharing of information and the tracking of documents waiting for clearance. One of the most important implications for e-government is its potential for integrating services and processes in order to achieve more seamless government. Seamless government cuts across the boundaries that separate different jobs or functions in the public administration. E-government can create networks of information flow among the different parts of the administration, irrespective of legislative or administrative boundaries and/or hierarchies. In fact, one can question whether or not government agencies can maintain their current internal divisions and territories while trying to maintain a single, simple interface with the citizen through e-government.

73. E-government has also helped to renew interest in public management reform by capturing the imagination of political leaders and government employees alike. While there is a danger of overselling the benefits of e-government, political officials are interested in both the potential for service improvements and the participatory aspects of e-government. Public sector trade unions, on the whole, have been supportive of the transition to e-government. Especially in the context of shrinking working populations, e-government may offer more skilled employment for some. Government interest in ICT has also renewed focus on developing employee skills and on recruitment and retention.

74. E-government also increases pressure for reform by promising service improvements. Once countries begin implementation, they realise that technology alone is insufficient and that workplace practices and structures need to be reformed as well. E-government raises citizen expectations putting further pressure on government. For example, Statskontoret, the Swedish Agency for Administrative Development, notes that serving citizens 24 hours a day, seven days a week is not simply about having a web presence: “the 24/7 agency, must, through its choice and implementation of service channels and electronic services, become part of the larger context that is central e-government. This calls for voluntary collaboration between agencies or Government-led development and strategy throughout the central public administration.” (The 24/7 Agency. Statskontoret, 2000.)

75. Finally, e-government raises good governance issues that are at the heart of many current debates on how to improve relations between government and citizens. As noted by the OECD Ministerial Council
good governance is an essential ingredient of the mix of policies than underpin economic growth and development. By contributing to reduced corruption, greater openness and trust in government institutions, e-government can help to meet economic policy objectives and build citizen trust in government.

76. Much has been made about the potential for new technologies to increase the transparency and accountability of government. One cannot assume, however, that making services available online will automatically increase the transparency of the public administration. Undeniably, the enhanced information dissemination capacity of the Internet increases the pressure on government to be more transparent. But it is up to governments to decide, in dialogue with citizens, business and civil society, how best to safeguard the public interest, reconciling the search for better knowledge management with the demand for data privacy and responding to pressures for greater transparency and disclosure at reasonable cost.

77. It is worth keeping in mind the incentives, opportunities and constraints of the public administrations that are being asked to carry out e-government initiatives. In the wake of September 11, for example, legitimate policy objectives of security have, in many instances superseded concerns about transparency. The question is not whether one is more important than the other, but rather have countries laid out the appropriate criteria for deciding among diverse governance concerns?

78. Modernising government structures and processes to meet e-government demands will have some fundamental impacts on how services are delivered. The current model of the public administration in most OECD countries, for example, restricts information sharing because the collection and use of data is segmented along with the structure of government. This separation according to functions, however, also serves to protect privacy of citizens’ data. In creating a more seamless government, government will have to strike an equilibrium between protecting citizens’ privacy and better meeting their needs with more efficient, pro-active services. What starts as an exercise aimed at developing more responsive programs and services becomes an exercise in governance (Lenihan 2002).

2.6 Citizen engagement and trust

79. Citizen engagement can help build and strengthen the trust relationship between governments and citizens. This is fundamental to the achievement of good governance and in turn to fulfilling broader economic and social goals. In the absence of trust, the rule of law, the legitimacy of government decisions and specific reform agendas may be called into question. While the overall relationship involves a complex web of factors, ICTs can act as an enabler to engage citizens in the policy process, promote open and accountable government and help prevent corruption. Citizen engagement at a basic level includes information, consultation and feedback by service users. At a more advanced level it includes citizen engagement for policy making.

80. Access to information can have a pervasive impact on the promotion of good governance (Citizens as Partners, OECD 2001). In themselves, they indicate governments’ and administrations’ willingness not only to accept public scrutiny and accountability, but their desire to facilitate this by improving the scope and efficiency of these processes. Fine-tuning the presentation of online information can reduce the number of costly follow-up contacts, for example if applications are not filled in correctly. Transactions that can be completed online effectively can generate considerable savings.

81. The nature of online services facilitates the collection of information on user experiences. At one level, data on Web use can provide information on pages accessed, user pathways through information and points where users abandoned the application. More active feedback from short online questionnaires or
feedback contacts, while not representative, can provide qualitative information directly based on user experiences.

82. Feedback from users can help refine service arrangements to make them more effective. For example, user feedback on the design of forms or the way information is presented can help ensure that citizens are aware of entitlements and requirements.

83. Opening up decision-making processes can improve the quality of decisions by enriching decision makers’ understanding of the context and impact of the options before them. Consultation and informed participation can help lead to policies that better address constituents’ needs and also increase support for, and trust in, public institutions and their policies. Governments are actively developing online applications in these areas, and many countries are also developing “e-democracy” policies, which may include e-voting and political engagement issues.

84. However, while new ICTs offer significant opportunities for greater stakeholder engagement in policy making, they also raise a host of new questions for government. How are citizens’ rights of access to information to be ensured in the online era? What aspects of government’s current structure, organisation and resource allocation need to change to respond to new standards for their interactions with citizens? What is the status of civil servants’ online responses to citizens’ queries or their submissions to an electronic discussion forum?
SECTION 3.  BARRIERS TO E-GOVERNMENT

85. Identifying potential gains from e-government is one thing; actually realising them is another. Implementing ICT projects, particularly large-scale projects that can have a major impact on service quality improvements or efficiencies, can raise a number of problems, many of which relate particularly to operating within government. E-Government barriers are those obstacles that are external to ICT projects at the individual agency level. As such, they often concern breakdowns, missing components or lack of flexibility in the government-wide frameworks that enable e-government. The result is oftentimes the inability to achieve a whole-of-government or seamless perspective in e-government implementation. Legislative and regulatory barriers, financial barriers, technological barriers and the digital divide can all impede the uptake of e-government.

3.1 Legislative and regulatory barriers

86. The success of e-government and the spread of e-services are highly dependent on government’s role in ensuring a proper legislative framework for the e-enabling of electronic services. The first requirement for e-services to gain widespread acceptance is their formal equivalence and standing as the paper process. Additionally, current frameworks based on the assumption that agencies work alone (in terms of performance management, accountability frameworks, data sharing for example) inhibit collaboration and information sharing between organisations. Complexity of regulation is another barrier, with many agencies unable to determine what is required of them, and unwilling to invest in a project that may not conform with requirements. Finally, privacy and security need to be ensured before online services can advance.

Recognition of e-processes

87. The uptake of e-government services will remain minimal without a legal equivalence between digital and paper processes. Some governments have already begun transferring a significant part of public services into electronic forms, but in order for e-services to become more widespread, legislation is needed.

88. For example, the legal recognition of digital signatures is necessary for the widespread uptake of submission of electronic forms. Such legislation would need to be implemented in accordance with technological standards and accompanying services.
As of 2002, 26 of the 30 OECD countries have passed legislation recognising digital signatures, though a much smaller number have actually introduced applications beyond a pilot phase. Many are waiting for the private sector to fill the void.

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<th>Country</th>
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<td>UNITED STATES</td>
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Note (1): Though Switzerland has taken major efforts in catching up with the development of e-government related legislation, the process towards the recognition of a full legislation on e-signature is still ongoing. A law recognizing the equivalence between traditional and electronic signature has not yet been enacted. An experimental regulation (decree) has been issued regarding the conditions under which certification service providers may be recognized on a voluntary basis. The scope of the decree is to promote the provision of secure electronic certification services to a wide public and encourage the use and the legal recognition of digital signatures.

Source: www.bmck.com/home-transactions.htm; updated 11 February 2003

89. Digital signature legislation ranges from simply authorising the use of electronic signature in very limited circumstances to a more formal regulatory approach governing the manner in which digital signature may be used and the way certification authorities may operate. However, a lack of common frameworks across countries can impede more widespread use of digital signatures.
Complexity of regulation

90. Confusion about what exactly is in the law is another problem. Agencies may need clarification on what they can and cannot do, particularly in the areas of data security and technical standards. Especially in the case of small agencies with few resources, the cost of developing an e-government project in the wrong direction or using the wrong standards is potentially prohibitive. A vicious circle may occur when ignorance of current regulations leads to wrong development of e-government projects and to waste of internal resources, and in turn results in more regulation.

91. The web of government regulations around ICT procurement, industry support, contract requirements, compliance with security requirements and other standards can increase costs and drag out implementation timetables. Unfortunately, seamless government services involving a number of agencies unavoidably adds to the complexity of implementation; it is understandable that ICT implementers within agencies feel more comfortable working alone.

92. Combining existing legislation with clear informal/regulatory guidance is a primary challenge to e-government. Government should address the issue of how a better clarified and explained existing regulations can match e-governments operators’ expectations and in turn impact the implementation of services.

Collaboration frameworks

93. E-government has the potential to improve collaboration across agencies and organisations, but there are a number of regulatory barriers to collaboration. For example accountability rules, designed to ensure responsible use of public resources by clearly identifying who does what, can impede collaboration as it may be unclear who is accountable for shared projects. Similarly, performance management follows clear distinctions of who did what, and there is little flexibility for evaluating shared projects. Finally, legislation enacted in order to protect the privacy and security of citizens’ data can impede data sharing across government (see below).

Privacy and security

94. Citizens are unlikely to use e-government services without a guarantee of privacy and security. Governments, on the other hand, have a strong interest in maintaining citizens’ trust as well as getting involved in closer collaboration with the private sector on the issue of security.

95. The difficulty of protecting individual privacy can be an impressive barrier to e-government implementation. Ensuring that e-government initiatives are in step with society’s expectations in this area is a crucial means of building trust. Privacy is not just respecting privacy principles and protecting people and their rights, but is doing so while allowing data sharing and developing the so called joined-up government (see section on collaboration). Privacy laws and data protection authorities should also take into account citizens right to use networks.

96. Rigorous application of security (including appropriate standards and procedures) has become a priority for IT service implementers. The lack of common standards on the level of data encryption for example, may lead to the identification of better solutions. However, government exposure to technological risks without a strong business orientation may lead to security solutions that don’t match market expectations (see the section on technological barriers).
France: Protection of privacy with regard to the need for links between electronic files

France’s chief priority has been to protect privacy in response to the threat posed by the expansion of electronic files and the potential uses of new information and communications technologies (NICT), and in particular the possibility of matching files which contain personal data. At the same time, some countries have sought to use NICT to simplify administrative formalities by connecting various files so as to minimise the need to ask citizens to supply the same personal data several times. Other countries have sought to make their administration more efficient by authorising it to match information on the same individual. France is not opposed to endeavouring to deliver administrative services more efficiently to the citizen, nor to simplifying administrative formalities; it requires only that constant care be taken to ensure that the rights of the individual are safeguarded when automatic processing of personal data is introduced.

The Law of 6 January 1978 “Informatique et libertés” recognises that individuals have a number of rights in regard to the automatic processing of personal data by the public and private sectors, as does most of the legislation on data protection, and the Council of Europe Convention No.108 for the protection of individuals with regard to automatic processing of personal data, which was ratified by France. These rights are: the right of individuals to ask any body whether it holds information concerning them, to have knowledge of that information, either directly or indirectly through an intermediary in the case of data concerning national defence or public safety for example, the right to rectify data, to refuse that a file be kept on them when such a file is not obligatory by law, or the “right to be forgotten”, which allows individuals to request that certain non-permanent personal data concerning them be removed from a file.

Another fundamental right is that bodies wishing to introduce the automatic processing of personal data must inform individuals in advance of the use of that will be made of the data concerning them. Prior to implementing any computerised data processing project, an administration must submit it for an opinion (or declare it, in the case of the most routine processing) to the Commission Nationale de l’Informatique et des Libertés (CNIL, http://www.cnil.fr/index.htm), a body set up by the Law of 6 January 1978. The CNIL examines the proposed uses of the data and ensures that there is transparency, so that the individuals concerned can exercise their various rights.

The administration responsible for processing personal information must inform the CNIL of the aim(s) of the processing it wishes to introduce, in order to obtain its opinion. It must also specify the data that will be recorded for the purpose of that aim, how long they will be stored and the categories of persons who will have access to them. The content of the processing must correspond to the declared aim and must not be used for other purposes, under pain of constituting a criminally punishable offence. This means that the purpose of a file that would be shared several administrations must be clearly specified and receive a favourable opinion from the CNIL.

One of the government’s priorities is to facilitate citizens’ access to the administration by reducing the number of agencies they have to deal with, by simplifying administrative formalities, by reducing the time it takes to deals with requests, and by making the administration more user-friendly. In accordance with the measures of the Law “informatique et libertés” of 6 January 1978, a personalised citizen’s portal is being launched “mon.service-public.fr.” This portal will eventually allow the user to obtain a personal set of information and e-services, either anonymously or personalised as the case may be. The objective is to support the development of e-government by progressively building personalised portals and electronic user accounts so as to allow citizens to access records containing their personal information and to facilitate citizens contacts and relations with the administration.

3.2 Budgetary barriers

OECD governments operate within vertical funding structures, in consonant with the core public management principle of holding an agency accountable for achieving organisational objectives and giving it the resources to accomplish those objectives. However, such budgetary frameworks do not take into account the specific needs of e-government projects, specifically relating to long-term investment, collaboration, and innovation and control. ICT projects are of a different nature than traditional projects,
especially with regard to infrastructure and the need for collaboration. For this reason, budgetary needs are different, and current budgetary arrangements can in fact work as barriers to e-government. In order for e-government to provide the capacity to reform the operations of public administrations financing issues must be addressed.

98. The table below highlights the virtually inverse relationship between traditional government budgeting and ICT investments (Harvard Policy Group 2001):

Table 1. Traditional budgeting and budgeting for ICT investments

<table>
<thead>
<tr>
<th>Focus of traditional government budgeting</th>
<th>Characteristics of high-value ICT investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-year (or biennial) expenditures</td>
<td>Multi-year investments</td>
</tr>
<tr>
<td>Programme-by-programme performance</td>
<td>Enterprise or cross-boundary performance</td>
</tr>
<tr>
<td>Financial cost/benefits</td>
<td>Financial and non-financial costs/benefits</td>
</tr>
<tr>
<td>Level of effort within existing work flows</td>
<td>Changes in the flow of work</td>
</tr>
<tr>
<td>Ongoing operations</td>
<td>“Start-up” operations</td>
</tr>
<tr>
<td>Control</td>
<td>Innovation</td>
</tr>
</tbody>
</table>

Specific budgetary barriers

99. A number of features of current budgetary arrangements in OECD countries work against efficient implementation of e-government. Current budgetary frameworks provide financing for individual projects, but do little to account for the shared responsibility inherent in many e-government projects. The principle budgetary barriers include barriers to the funding of shared ICT projects and budgetary barriers to collaboration.

100. Barriers to funding:

- To the extent that an explicit choice is made, the implementation of e-government is often unlikely to win out in competition with other compelling public policy objectives such as education, security and health. While most e-government proposals will be argued for in terms of programme outcomes rather than in terms of advancing e-government per se, the level of resources devoted to e-government is ultimately a matter for governments to determine in light of their overall priorities.

- The difficulty of providing cost/benefit analysis for e-government projects makes it hard to evaluate and fund successful projects.

- ICT often involves capital expenditures that may challenge budget time horizons. As with other capital projects, many ICT projects are multi-year, with lumpy benefit and expenditure patterns. ICT expenditure involves maintenance costs and associated recurrent staffing costs. E-government innovation is also vulnerable to deferral or cancellation when competing with more immediate budget pressures. Additionally, many e-government projects will cover several years and thus require commitments to spend resources over a long period, sometimes well beyond the annual or multi-year budgeting horizon.

101. Barriers to collaboration:

- There are a number of budgetary rigidities that prevent shared funding arrangements. The vertical nature of current arrangements means that it can be difficult to request joint funding,
to pay into a project being done by another agency, or to pool funds. There are few mechanisms for shared funding, and it can be difficult to assess the extent to which agencies are benefiting from (and hence should contribute to) a shared project.

- The use of **performance-based budgeting** can create disincentives for collaboration, by rewarding independent behaviour at the expense of shared projects (see section on legislative and regulatory barriers).

- There is no framework for **profit sharing**. Agencies have no incentives to eliminate redundant systems by sharing systems with other agencies unless they can share in some of the savings generated.

**Possible solutions**

102. A number of steps can be taken to help overcome the aforementioned budgetary barriers. **E-government funding** can be assisted by the following measures:

- Major ICT projects could be usefully **classified as capital investment**, involving a single or a series of up-front capital outlays, with a consequent stream of benefits. Not only will classifying ICT projects as capital investment help with funding of e-government projects, but it will also help with the problem of budget time horizons.

- In a number of countries, spending on e-government requires separate **approval by the e-government co-ordinating office** to ensure that there is no duplication or inconsistency with broader strategies and architectures. Clear rules and structured consultation processes will help maintain agency confidence in this approach.

- **Public-private partnerships** can be used to bypass budgetary constraints and thus respond to a number of barriers, including obtaining capital, budget-time horizons and disincentives for innovation and collaboration. For example, using a private partner to build the required infrastructure, and then leasing it, or otherwise paying on a user-pays basis will reduce the need for up-front capital, but with the risk of greater longer-term cost.

- Specific central **funding for innovation** can be used to fund innovative and high-risk demonstrations that otherwise would not receive funding. Arrangements could be used to augment this funding though linked (or matching funds) from other agencies, private partners, or by using seed financing with the expectation that the investment will be repaid (in part or in full).

- An agreed approach to the **assessment of costs and benefits** of e-government can help evaluate and fund successful projects (see section on Monitoring and Evaluation).

- The ability of agencies to **retain savings** generated from e-government initiatives will be important as an incentive for agencies to look for efficiencies.
In 1998, the government set up a Capital Modernisation Fund, separate from allocations to individual departments, to finance innovative investments based on project proposals. These funds, which were available as a result of under-spending of conventional capital allocations, have been used extensively for ICT projects. According to the Treasury Web site, “the Capital Modernisation Fund was set up to support capital investment to improve public services. For 2000-01, GBP 200 million were added to the Fund as part of the Budget 2000 announcement to take the Fund to GBP 2.7 billion between 1999 and 2001-02”. Funding is allocated on a competitive basis and on the following criteria:

- Extent to which the project applies genuinely innovative approaches to service delivery.
- Quality and strength of the economic appraisal of the project.
- Impact on the efficiency and effectiveness of the service.
- How far the project contributes to the department’s objectives.
- How far the project is genuinely additional.
- Robustness of arrangements for delivering, managing, accounting, monitoring and evaluating the project.

Successful projects have included e-government initiatives. In the first round (1999-2000), e-government projects funded included: GBP 470 million as part of the National IT Strategy to provide 1 000 IT learning centres across the country; GBP 1.1 million to “pump-prime” various e-commerce procurement initiatives, in particular to develop a government “shopping mall” to provide electronic tendering for low-value transactions to and from government which could save over GBP 10 million a year; and GBP 600 000 for electronic procurement by foreign and Commonwealth Office posts overseas. In the second round, GBP 23.3 million were allocated to transform the Crown Court and reduce delay in the criminal justice system by more effective management of cases through the Crown Court while improving the quality of service to court users. This involved: a PC-based system for electronic presentation of evidence, producing significant savings in court time in complex cases; electronic transcripts of court proceedings through a digital audio recording of the official record; and improved distribution of information by displaying relevant information on how cases are progressing on public information kiosks and a read-only access IT source.

The linked nature of many e-government projects across traditional programme and organisational lines means that shared budgetary arrangements are essential. On the basis that the bulk of funds for e-government will (and should) be provided through agency budgets, the budget process can be used to promote co-ordination of e-government initiatives. **E-government collaboration** can be aided by the following measures:

- **At the simplest level, a central register** of e-government initiatives seeking funding would enable agencies and e-government co-ordinators to see the range of new proposals and identify potential duplication.

- **Central funds** can be used to encourage certain activities, such as collaborative initiatives by agencies.

- Under the **lead agency model**, an agency funds a project that benefits other agencies as well as itself.

- Another possibility is that a number of **agencies co-ordinate their approach** to obtaining funds. This may be done, for example, by dividing a project into segments. (However, this approach can lead to implementation problems regarding the division of the project, especially as some agencies may be successful in obtaining funding while others fail.)
• Under **pooled funding** arrangements, agencies share funding for a common project. It is important to be able to formalise such arrangements in quasi-contractual arrangements, to provide clarity for all parties and to allow for a unified project management and implementation approach.

• **Agency payment models** involve arrangements in which the co-ordinating agency funds the development of the project, and agencies that use the service then pay to use it. The advantage of operating on a voluntary basis is that agencies will join if they feel the service is of value. This approach also incites the co-ordinating agency to meet agency needs.

• **A mandatory levy** on agencies may enable some projects to proceed that otherwise would not. However such a levy could be difficult to negotiate.

• Additionally, performance-based budgeting should **take into account shared responsibility** in order to create incentives for shared projects.
Box 6

<table>
<thead>
<tr>
<th>Canada: Central funding criteria</th>
</tr>
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<tbody>
<tr>
<td>The objective of Government On-line (GOL) is to transform the machinery of government into a more efficient whole. It is a client-focused and takes a “whole-of-government” view for clients, with significant economies of scale, while still maintaining ministerial accountabilities and responsibilities.</td>
</tr>
</tbody>
</table>

Central funding has been the catalyst for horizontal co-operation among federal departments and extending into other jurisdictions. The ability to inject significant amounts of supplementary funding into departmental accounts has permitted the government to look for collaborative opportunities, sometimes more complicated and expensive up front, but which clearly promise an eventual return on investment stemming from the horizontal nature of the project. It has also allowed the government to insist on high standards of documentation, governance and reporting. The centralised approach has accelerated, in some cases by several years, the successful delivery of Internet-based services, including in departments where tight discretionary budgets did not allow for the early introduction of such capabilities. There is now a large and growing network of key personnel who co-operate outside of departmental boundaries and stimulate the efficient sharing of best practices, technical tools and key lessons learned.

Early projects were carefully screened and successful projects received appropriate central funding. In most cases, this central funding covered only part of the project’s total cost, with the balance contributed by sponsoring departments and their contributing partners. Three examples of successful projects that have substantially benefited from the centralised approach to GOL are:

- **Seniors Canada On-Line**, a project led by Veterans Affairs Canada (VAC) and involving multiple partners and jurisdictions, responds to the need for more and better information specifically tailored to the needs and the realistic computer capabilities of Canadian seniors, their families, caregivers, service providers, and supporting organisations.

- **e-Client Status Query**, a project led by Citizenship and Immigration Canada (CIC), allows individuals to check electronically on the status of their immigration applications. This project involves the safeguarding and transmission of personal information and was therefore a logical choice to act as a prototype for a highly secure electronic communications network.

- **The Canada Site**, an omnibus project led by Communications Canada which includes input from virtually all federal departments, is a layered portal comprising three subordinate “gateways” and a single point of entry to all information holdings that are pertinent to interactions between government and its various clients. This major undertaking has absorbed large amounts of funding for development, maintenance and marketing, amounts that only became possible with central direction, co-ordination and funding.

This project has shown that central investment can achieve overall cost savings by funding services that are cheaper to provide once as a joint solution. It also supports a “whole-of-government” approach by funding departments to work with partners on common solutions. Incremental funding, even if on the margin, can influence the pace or approach to the re-engineering of services by departments. The approach has accelerated the move towards greater horizontal management across departments and opened a new channel for communication and collaboration.
Box 7

**Italy: Central funding criteria**

Almost EUR 250 million have been allocated to e-government projects for the delivery of services by regional and local governments. At the beginning of March 2002, a first call for projects was launched by the Minister for Innovation and Technologies (http://www.innovazione.gov.it) to identify, select and finance projects proposed by regions and local governments in two categories: i) development of online services; and ii) development or enhancement of communications infrastructure and services to enable interoperability and co-operation between administrations.

To get the best possible results, the following characteristics were considered: strong selection, co-financing, involvement of a minimum number of citizens, public-private partnerships, careful monitoring, admission of projects already started. However, in the process of preparing the project proposals, the local public administrations emphasised the difficulty of activating public-private partnerships as a major issue.

Box 8

**United States: “Pass the hat” - pooled agency funding of projects**

The Clinger-Cohen Act (formerly known as the Information Technology Management Reform Act) implicitly encouraged multi-agency projects by directing the Office of Management and Budget (OMB) to issue “guidance for undertaking … multi-agency and government-wide investments in information technology…”, thereby prompting the OMB to issue guidance on capital planning as part of its omnibus policy document on information resources, “Managing Information Resources” (OMB Circular No. A-130). The Act also gives OMB the authority to redirect funds from one agency to another to finance multi-agency projects. Finally, the Act permits joint agency funding of projects, known as “pass the hat” funding, a practice otherwise prohibited under most US appropriations laws, which tend to require single agency funding and accountability for projects.

The authority to redirect funds has, until recently, not been used. In May 2002, OMB did invoke this authority in support of an e-government initiative, online rulemaking management. In July 2002, OMB announced its intent to use its Clinger-Cohen authority to support the realignment of government functions envisioned by the Administration’s proposed Department of Homeland Security by limiting individual agency investments in projects that will need to be consolidated.

The “pass the hat” authority has also played a role in financing e-government initiatives in at least two important ways. It is being used to finance the activities of the Federal CIO Council (www.cio.gov), the principal co-ordinating body for federal ICT activities, and to fund the FirstGov initiative.

Box 9

**Mexico: Co-ordination of the government budget process**

The Mexican government established SAETI, a system for planning, budgeting and evaluating ICT projects from all federal agencies. The system helps match ICT projects against overarching objectives, detects overlaps and aids in evaluating the performance of ICT investments.

### 3.3 Technological barriers

A number of technological barriers can impede the implementation of e-government programmes and initiatives. Major barriers include legacy systems, shared infrastructure, and the rapid pace of new technological developments.
Legacy systems

105. Since the late 1960s, governments have made considerable ICT investments and currently have ICT systems already in place. However, legacy systems (systems that were designed for specific purposes) can be inflexible, and incompatible systems make it hard to deploy new applications and can lead to increased costs. In fact, the difficulty of integrating legacy systems with new initiatives can be a major barrier to e-government.

106. Integrating legacy systems with the Internet and the World Wide Web is a prerequisite for obtaining the benefits of e-government. This includes integration of back-office information management and information processing systems, but also the integration of legacy systems in order to provide government services online.

107. Legacy systems in areas that are critical to government operations are especially cumbersome, and should be the first to be replaced. Legacy systems in areas that are less critical may not need to be replaced immediately, but new investments should not be made in the system, which should be upgraded as it is replaced. Private sector partners can be of help when trying to integrate legacy systems (see section on public-private partnerships).

Shared infrastructure

108. A lack of shared standards and compatible infrastructure between departments and agencies can impede inter-agency collaboration and the uptake of e-government. But the expense of implementing modern infrastructure can be a major barrier to the implementation of e-government initiatives. Shared infrastructure among agencies is one way of overcoming this problem. However, the development of shared infrastructure can be difficult because of budgetary constraints (see previous section), and the difficulties of collaboration.

109. Government can help by providing a technological framework for delivering electronic services. Establishing common technical standards and infrastructure can pave the way for greater efficiency within government. Important economies can be gained through a whole-of-government approach, both in terms of reducing redundant systems and by lowering the legal and technological barriers for co-operation across organisations. A national approach may range from shared systems to common rules and/or standards governing separate, but connected systems. For example, governments can benefit from scale economies for some common back-office processes, such as human resources management and payroll.

Box 10

**Finland: Shared infrastructure**

Large-scale or cross-agency e-government initiatives in Finland have usually been planned by or at least have had heavy involvement and/or support from either Ministry of Finance or Ministry of the Interior. These ministries can act as a catalyst as well as a formal or informal mediator for the interests of the participating agencies. For example, the JUNA project, the citizen ID card, the citizen portal and the TYVI project all originated in either the Ministry of Interior or the Ministry of Finance.

In Finland, interoperability work is carried out through JUHTA, the Advisory Committee on Information Management in Public Administration. So far, JUHTA has set over 40 IT standards. There is bound to be frustration, however, as there will always be a lag between the changes in the technical system, services and technological possibilities and the rules governing them.

New technological developments

110. Governments face the challenge of fostering the development of e-government while there is still great uncertainty regarding technological change and negative impacts (e.g. system vulnerability and illegal activities). Technological advances are very rapid, and it is difficult to anticipate future policy impacts in detail. One approach to dealing with technological risk is to partner with the private sector. But such partnerships are difficult when governments are trying to establish standards that may not yet be available on the market (see box below).

111. Broad approaches to policies in emerging areas include (OECD IT Outlook, 2002):

- Technology neutrality in legislation and regulation to avoid closing off promising options.
- Flexibility within broad regulatory frameworks and adaptation of current laws to a digital world.
- Involvement of all stakeholders in regulatory processes.
- Performance requirements rather than technical specifications when procuring new technologies.
- Increasingly looking to international co-operation to harmonise approaches to transborder issues.

Box 11

Finland: Smart Card Case Example

The Finnish electronic identity card is a smart card that replace the existing citizen identification card with a smartcard that serves all of the identity card’s previous functions while adding new electronic capacities: it can be used for electronic identification and digital signatures, as a tool for encrypting sensitive documents and as an enabler for information exchange among citizens, business and public authorities, as well as for secure electronic transactions.

One of the causes for the relatively weak uptake of the card is the lack of private - public collaboration in developing user solutions and interactive services for the card. Public higher security standards (stronger data encryption) didn't take in consideration neither the development of private market technologies nor the desired and actual needs of the potential users. The results has been the fairly limited development of electronic service and the under-utilisation of the card.

Co-operation with the private sectors in developing electronic applications for the card may have help broaden not only the user base, but may have also bring the additional benefits of breaking up technological barriers and establishing a common framework for developing applications.

Source: E-Government in Finland (2003).

3.4 The digital divide

112. The digital divide is a barrier to e-government in that people who do not have access to the Internet will be unable to benefit from online services (see also the IT Outlook 2002). In OECD countries a growing number of people have access to the Internet, but there are still large numbers of people who do not (see Figure 1 and Annex 2). While e-government can improve services to citizens through other
channels (notably by improving back office procedures), the inability to provide online services to all citizens can hold back e-government projects.

**Figure 1. Households with access to Internet, 2000 and 2001**

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>60%</td>
<td>65%</td>
</tr>
<tr>
<td>Norway</td>
<td>55%</td>
<td>60%</td>
</tr>
<tr>
<td>Denmark</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>United States</td>
<td>35%</td>
<td>40%</td>
</tr>
<tr>
<td>Canada</td>
<td>25%</td>
<td>30%</td>
</tr>
<tr>
<td>Australia</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>Finland</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>Ireland</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Japan</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Austria</td>
<td>5%</td>
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<tr>
<td>Italy</td>
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<tr>
<td>Germany</td>
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<tr>
<td>France</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Turkey</td>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>

*Note: For Denmark, Ireland and the United Kingdom, access to the Internet via a home computer; for the other countries access to the Internet through any device (e.g. computer, phone, TV, etc). 2001 for selected countries only. Source: OECD IT Outlook 2002, based on ICT database and national sources.*

113. Additionally, the groups in society with lower levels of access tend to be those that are already disadvantaged. For example, lower income groups have less access to the Internet than higher income groups. Such disadvantaged groups are often the targets of government interventions and have a higher level of ongoing interaction with government. Many of their interactions with government are complex – establishing identity, entitlement for assistance, complex medical or social intervention – and they are not all well suited to online provision. While access to government information and services would be important for such groups, they may not benefit from enhancements to service quality and greater choice through online services.

114. E-government services may by their very existence encourage individuals to access the Internet. However, for most citizens, transactions with government are relatively rare and will not generally provide households with the main incentive to purchase a PC and Internet connection. However, government information and opportunities for consultation and participation, particularly at the local level, may be important in conjunction with other factors such as educational uses, access to e-mail and messaging and home PC use. It is thus important, on e-government grounds alone, for governments to continue policies and specific interventions to reduce the digital divide. A specific focus on frequently used government services with value to groups with low access, along with overall marketing of online government services, could be an important element of digital divide policies.
SECTION 4. IMPLEMENTING E-GOVERNMENT

115. Capturing the potential benefits of e-government is challenging OECD member governments to take a more co-ordinated approach to implementing e-government. Governments are actively engaged in developing policies and plans and rolling out e-government initiatives, as well as co-ordinating existing initiatives in order to improve the integration of services. The incorporation of the Internet into the mix of technologies has clearly provided an impetus to ICT use in government and provided new solutions, but has also raised new problems.

116. Most member countries have established new organisational units to facilitate e-government implementation or have added to the responsibilities of established structures. While actual responsibilities may differ, the relevant units face a central challenge of finding a balance between, on the one hand, meeting the need for improving co-ordination and catalysts for action and, on the other hand, continuing to foster flexibility, innovation and individual responsibility.

117. Given the complexity and breadth of implementation issues, the working group focused on issues faced by all members for implementing e-government. E-government places a high priority on improving services and increasing citizen engagement in the policy making process. But the reform of back-office administrative processes (including organisational change, leadership, central co-ordination, collaboration and seamless government, e-government skills, public-private partnerships, managing risk and cost and monitoring and evaluation) will be one of the most challenging areas for e-government.

4.1. Vision statement/plan

118. A vision statement and plan can help administrations set a course at the start, monitor progress forthrightly, help orient individual initiatives and make numerous mid-course corrections. Where possible, reform efforts should encompass a vision statement, broad objectives at national level, and a planning process with specific goals and targets.

Vision statements

119. A common vision is essential to e-government as a means to engage and co-ordinate agencies. A shared vision also serves to engage political leaders and to impress upon them the importance of e-government. A common vision is not a goal in itself, but a means to achieve policy priorities.

120. In OECD countries, most advanced e-government organisations have a vision statement. Such a statement may be linked to political commitment at a higher level, or it may be dependant on a general manager or even the head of an IT unit with sufficient determination and resources. Whether the vision is shared across the government or is limited to an individual organisation, however, makes a significant difference. No matter how advanced they are in terms of the services that they provide, organisations dependent on their own vision may not be aware of co-ordination problems that extend beyond their own services. Ministries tend to be in a better position to see the problems that may arise from lack of a
common vision, whereas the front-line perspective of agencies does not give them much room to worry about whether or not their e-government initiatives are consistent with those of other agencies.

121. A government-wide vision helps to tie e-government initiatives with broader strategic and reform objectives. A vision statement can help promote inter-ministerial co-ordination, ensure balance and fairness and help to stay the course over a number of years. Having a clear vision of reform helps to maintain consistency and a sense of purpose. Towards this end, political officials are key supporters of an e-government vision. Political leadership serves to diffuse the vision and to give it added weight. While a vision statement is needed, it is not enough, and the vision, the rationale and the validation for reform need to be communicated to the bureaucracy.

122. Increasingly, however, political commitment alone is not sufficient. In order to ensure ownership of an e-government vision and to ensure that it can be translated into realistic action plans, a variety of stakeholders are being brought into the process of defining an e-government vision, including users (both citizens and business), non-governmental organisations, and government employees.

**E-Government objectives**

123. E-government objectives are distinguishable from the more general vision in that they translate the broad values contained in the vision into more concrete outcomes, usually with a stronger operational basis, reflecting actual programmes, procedures or outputs. They can either indicate a broad goal or desired programme direction (e.g. “serve more citizens”) or a more specific target (e.g. “serve all eligible citizens by 2005”). Objectives can therefore form a planning hierarchy in which agencies set specific targets in support of broader goals defined by the ministry, which in turn, help to achieve the overall e-government vision.

124. The e-government planning process within the central government helps to establish and diffuse the vision and to translate it into goals and targets. Goals serve not only to provide a direction for action and achievement, they can also be used to prioritise and even advance action. Government-wide planning and the setting of objectives can also improve co-ordination between government organisations, serve to establish criteria for reconciling conflicting approaches and signal preferred approaches and shared resources for overcoming challenges.

125. Objectives can be set at the national, ministry, agency or project level, taking into account the specificity of each sector or organisation. For example, some countries have chosen quite specific goals at the national level in order to create pressure to advance their e-government initiatives. Objectives at the national level can be used to:

- Secure support, involvement and responsibility from the top political and management level in all ministries.
- Ensure the necessary legislation and central funding.
- Create useful co-ordination and co-operation mechanisms.
- Ensure motivation/incentives for cross-administration projects.
- Ensure that targets are integrated into performance and budget management processes to create/facilitate ministerial steering mechanisms.
• Ensure ownership/responsibility at the central level for overall co-ordination, monitoring and evaluation of national strategy.

• Ensure that the steering of the national vertical strategy is integrated with the horizontal steering of administrative fields (to solve the decentralisation/centralisation dilemma).

Box 12

European Commission: eEurope objectives

The European Commission has played an important role in identifying the actual and potential benefits of the information society and acting as a stimulus to ensure that all members continue to advance in this area. The e-Europe programme is a political initiative aimed at “bringing every citizen, home and school, every business and administration, into the digital age and online; creating a digitally literate Europe, supported by an entrepreneurial culture ready to finance and develop new ideas; ensuring the whole process is socially inclusive, builds consumer trust and strengthens social cohesion”.2

In order to achieve these goals, the e-Europe programme has defined priority actions and set targets for providing IT training to young people, providing cheap and fast access to the Internet, accelerating e-commerce, developing safe authentication systems for citizens (smart cards), enhancing e-participation for the disabled, improving health care online and strengthening e-government. As in other areas, specific targets for e-government have been set (i.e. simplify online public information) for electronic information and service provision, and indicators have been developed to measure countries’ efforts towards achieving these goals.

126. Without milestones to measure the achievement of goals, there is less overall pressure for agencies to act. Without clear targets, ministries and agencies may have difficulty knowing what they need to do or how to prioritise their actions. If goals are the bridge between an overall vision and specific action, what is sometimes perceived as a lack of e-government vision and strategy actually reflect a lack of clear goals and targets.

127. Many countries have issued targets as a central element of their e-government strategies, with common targets for placing services online by a specified date. These can be important as a way of generating momentum and gaining public engagement. However, missing these targets, or even perceptions that they will be missed can sour public perceptions. Dealing with this can require much energy and attention. A problem can also arise from the necessarily long time frames for meeting ambitious targets. Targets themselves may become somewhat outdated and cease to reflect newer thinking and policy development; the lock-in involved in such targets may be inconsistent with “Internet time” cycles of change.

128. In reality, many national targets are based on inadequate information about citizen demand, government resources and technological developments. Without a plan on how to achieve them, broad targets are not particularly useful and may even be counter-productive if too unrealistic. They should be distinguished, however, from more specific, short-term targets that build on each other and are negotiated with ministries and agencies or developed in consultation. The plan can be used to advance action, secure leadership buy-in and improve accountability.

129. Performance measures, within the framework of national vision and goals, can also serve to improve accountability by offering indicators against which to measure performance (see section on monitoring and evaluation).
Almost all agencies and ministries in Finland responding to the OECD survey used for the Finland Pilot Study reported including explicit goals in their e-government plans (90%), and most also include an explicit strategy on how to reach those goals (87%). Evaluation plans and frameworks for monitoring goals were less common. Over half of respondents reported that their plans stated how to monitor goals. Even fewer (50%) included an evaluation framework.

Source: E-Government in Finland (2003).

4.2 Front office

The term “front office” refers to government as its constituents see it, meaning the information and services provided and the interaction between government and both citizens and business. Implementation of e-government initiatives concerns two areas regarding the front office: implementation of e-services and engagement of citizens.

E-services

In order to survey the depth of e-services proposed by central administrations, the OECD E-Government Task Force adapted a model for electronic service delivery from the Australian National Audit Office. Several international surveys about e-service development have been carried out using a similar model, but there is no general agreement on how to define the stages of e-service delivery. In particular, the definition of the last, and supposedly most advanced, stage, seems to cause the most difficulty. This is not surprising given the limited experience with e-services at this stage.

The OECD E-Government Task Force provides a framework based on an Australian model, which can be used for country self-assessment. The model is also used in OECD country reviews such as the review “E-Government in Finland”. The Australian model defines four possible stages of e-service delivery:

Stage 1: Information. A Web site that publishes information about service(s). Since this stage primarily involves the digitising of available information and making it available online, it has required, to date, the least investment in process re-engineering and therefore can be undertaken with a minimal amount of planning.

Stage 2: Interactive information. Stage 1 plus users’ ability to access agency database(s) and to browse, explore and interact with that data. While stage 1 information tends to be static, developing services to stage 2 allows users to access an agency’s database for publicly available information and to interact with the information to do electronic searches and calculations based on their own criteria. Both stage 1 and stage 2 services focus on providing information to users. However, stage 2 services necessitate a greater investment in thinking about how citizens and information will use that information, about the rules for making certain information public and accessible, and about the target audience and the types of tools that can add value to the user experience, making it easier to find what he or she is looking for and/or tailoring information searches.

Stage 3: Transactions. Stages 1 and 2 plus users’ ability to enter secure information and engage in transactions with the agency. Developing e-services to stage 3 makes it possible for customers to enter
secure information and engage in electronic transactions. Many services that are currently at stages 1 or 2 can be transformed into stage 3 services.

**Stage 4: Data sharing.** Stages 1, 2 and 3 plus the agency’s ability, with the user’s prior consent, to share with other government agencies information provided by that user. It is particularly difficult to define a model for e-service delivery with regard to such advanced e-services. In certain countries, sharing data among ministries or agencies is prohibited because of privacy protection legislation (see section on barriers). Yet data sharing can create significant savings in public administrations and help ease procedures. All data matching needs to be legally approved or explicitly permitted so as to prevent the unauthorised or illegal combination of data (including anonymous data collection for research). The level of transparency of data-collecting organisations and confidence in data protection authorities are critical both for the accuracy and quality of data and for the protection of citizens’ rights.

**Figure 2. Stages of service maturity and core service delivery objectives**

Source: OECD.

133. Specific service delivery policies have been developed by governments to improve the quality of their services to customers. Key elements have included quality charters, incorporating timelines for specific services, agencies’ customer service standards, benchmarking with private-sector service organisations and customer surveys. At the agency level, there is a desire to have e-services for their own sake or for their demonstration effect, but such services are increasingly being developed in the context of broader, multi-channel service policies.
Service quality

134. Building service quality is important. Successful services are built on an understanding of user requirements, and online services are no different. There were difficulties in the rollout of online services as experience built up, but there is now an increasing amount of data on what works and what does not.

135. Effective services need not be complex. Information services can provide high levels of user value, with only a small additional value flowing from the ability to complete related transactions online. The various stages of online service may imply that it is obligatory to proceed to complex transactions as rapidly as possible and that a country’s e-government rating will suffer if this does not occur. However, an understanding of user demand and preferences is necessary. Sometimes simple and good information is valuable enough to users, and transactional services are not necessary. It is more important to identify whether users need more advanced services than to hurry to have everything ready for the next country survey.

136. It is essential to consider the ability of those with fewer online access opportunities – those with low incomes and/or lower educational attainment – to access government services. While maintaining choice in delivery mechanisms is important, care needs to be taken to ensure that a “two-tier” arrangement (with quality online services and lower quality other services) does not develop.

137. The adequacy for online services of existing administrative appeal and scrutiny mechanisms may need to be addressed. The argument that online services need to be integrated into broader frameworks would support the view that existing arrangements for scrutiny should cover e-service provision. A review of the adequacy of existing arrangements and, in particular, the competencies required for effective oversight may be useful.

Box 14

Denmark: User feedback mechanisms

The project Top of the Web carries out an annual evaluation of all public sector Web sites and users' opinions on the services. Public assessments of Web sites inspire government institutions to improve the quality of service they provide to citizens. Few public institutions want to rank at the bottom of the list. The Top of the Web evaluation uses a series of criteria to define the characteristics of a high-quality government Web site. The evaluation is based on user friendliness, practical value and openness.

User-friendliness: Users should find their way around the site effortlessly regardless of their level of expertise.

Practical value: Users’ potential benefit from the information given, which must be up to date and offer users relevant self-service options.

Openness: The degree to which users understand who takes decisions and how they can influence a decision-making process. It is also involves meeting users’ needs, e.g. by enabling them to ask questions and receive answers electronically.

138. Seamless services are likely to be more effective than delivering separate services to the same customer group. While online services provide greater opportunities for integration than other delivery mechanisms, the development of joined-up services within a broader service channel strategy can provide the opportunity for both effective and efficient service delivery (see below).
139. On the basis of member country experience and in the context of the digital divide, e-government services clearly need to be developed as part of a broader service channel strategy. Goals to place services online have been important, as such action broadens the choice of services available to users. However, implementing these services by integrating them with other channels as part of an overall transformation of a particular service makes it possible to take a structured approach to meeting the needs of particular customer groups. This approach is essential for customer-focused services. It also makes it possible to put the use of online services into context, with the online service channel a complementary access point rather in competition with more established approaches. An integrated approach is also more efficient in the longer term, as more intensive use can be made of common infrastructure and data.

140. The need to preserve choice is fundamental to any customer-focused strategy. Providing alternative delivery channels and indeed choice of online access points (e.g. phone, kiosks, counter, etc.) will improve chances of ensuring access and effectiveness. Choice of approach is in itself valuable to service quality. The principle of “no wrong door” to access government services should be adopted.

**Box 15**

**Finland: Channel strategy**

Managing different service channels is part of an e-government strategy, including how many and whether some traditional channels can be reduced when there is sufficient electronic service coverage. In this connection, reactions to the Finnish government’s experiments with limiting some traditional delivery channels in certain instances will be closely watched. Two examples:

- Even before the advent of the citizen portal, the hard copy and disk versions of the citizen’s handbook were eliminated, making it available only online. The reason was to ensure that information communicated was always up to date. In justifying this decision, the Ministry of Finance says that it has more than doubled the number of users with online access to the citizen portal compared to those who had access to the citizen’s handbook.

As part of a 1999 agreement in the JUHTA project to expand the electronic collection of data, Statistics Finland now requires compulsory schools to answer a questionnaire by using the Internet and has developed a collection of Web-based forms for the questionnaire. The decision was taken in consultation with schools, taking into account their needs and Web access. The results have been positive and Statistics Finland is also likely to test a single-channel strategy for the collection of financial information from municipalities (Björkqvist 2002).

*Source: E-Government in Finland (2003).*
Canada: Government-wide multi-channel service transformation

Initially, Canada’s Government On-line (GOL) focused solely on the provision of electronic services via the Internet. However, to respond to individuals’ and businesses’ preferences and expectations, the initiative has adopted a broader vision focusing on client-centred service delivery across the range of service delivery channels (Internet, in person, telephone). This demands a much higher degree of co-ordination and integration across the whole of government, and Canada is now pursuing an approach that views the electronic channel as the enabler for delivering multi-channel service improvement. This requires a number of government-wide strategies to ensure client-centred, responsive, cost-effective, accessible, trusted and secure service delivery. Changes have been made in the GOL and service initiatives’ governance structure to promote the shift towards a broader multi-channel service vision and pave the way for long-term governance of more integrated service delivery. The interdepartmental committee structure that oversees GOL has been enhanced to include the multi-channel service concept, and the committees that support the senior level governance committees have received a broader mandate.

Work has been carried out over the past year to support multi-channel service improvement and delivery of key e-services in five key areas:

- **Service transformation and multi-channel integration:** pursuing a user-centred approach to electronic, in person and telephone service delivery, driven by client priorities and expectations.
- **Common, secure infrastructure:** building the enterprise-wide electronic service platform that enables integrated services and supports secure Internet, telephone and in-person access.
- **Policy and standards frameworks:** addressing privacy and security with respect to information management to build confidence in e-services and link transformation of services to client satisfaction.
- **Communications and marketing:** encouraging the take-up of electronic service options to fit the government’s capacity to deliver high-quality services through consultation, public reporting and marketing, while assuring citizens of the government’s commitment to respect their channel preferences.
- **Human resources:** developing the necessary skills in the government’s work force to adapt to change and operate effectively as a provider of client-centred services in technology-enabled, integrated, multi-channel services.

With a new governance structure in place, strategies in each of the five key areas are beginning to produce results.


**Citizen engagement**

141. ICT can be used as tools for providing information, consulting and engaging citizens in policy making. The objective of technology-enabled information dissemination, consultation and participation is to improve the policy-making process through a range of devices (Macintosh, 2002):

- Reach and engage with a wider audience to enable broader participation.
- Provide relevant information in a format that is more accessible and more understandable to the target audience to enable more informed participation (for example, making online content available to the handicapped, see box below).
- Engage with a wider audience through a range of consultation and participation technologies to cater for the diverse technical and communicative skills of citizens.
• Facilitate the analysis of contributions to support policy makers and to improve policy.
• Provide relevant and appropriate feedback to citizens to ensure openness and transparency in the policy-making process.
• Monitor and evaluate the process to ensure continuous improvement.

Box 17

Japan: Guidelines for handicapped accessible Web site contents

In order to facilitate increased participation in government, Japan has decided that it is important to enable the handicapped to access government Web sites easily. The guidelines give Web content makers (homepage makers, page designers) and developers of Web site creation tools and methods for creating barrier-free Web content that can be converted to diverse forms. The guidelines involve:

- The need for alternative means of representing content using sound and images.
- Avoidance of dependence on colour information.
- Appropriate use of mark-ups and style sheets.
- Need for clarity in the use of natural language.
- Ensuring that tables created can be converted.
- Ensuring that users can convert new technologies where necessary.
- Ensuring that pages are accessible even if users have not introduced or do not use newer technologies.
- Ensuring that users can cope with content that changes over time.
- Accessibility of the user interface.
- Ensuring that the design does not rely on specific equipment (devices).
- Emergency countermeasures should be available.
- Technical standards and guidelines for the Internet must be respected.

The guidelines for creating content that can be understood and is navigable involve:

- Providing information on context and page structures.
- Explaining clearly the system of navigation.
- Clarity and concision of documents.


However, the following design issues and trade-offs need to be explored (Macintosh, 2002):

- Balancing the need for straightforward access to systems with the need to collect personal data for various reasons such as authentication and evaluation.
- Balancing the need for standard, generic interface features with the need to reflect the expectations of a variety of target audiences.
Supporting easy and flexible navigation through issues.

Deciding how much information should be provided to help individuals to be adequately informed on issues and so have the competency to contribute.

Finally, balancing rights of access, protection of privacy and security with issues of transparency, accountability and trust.

When, who and how?

143. Three key questions rapidly emerge when approaching online engagement of citizens in policy making, namely: when? who? and how?

144. When? Most of the case studies describe e-engagement exercises at the agenda-setting stage of the policy cycle. This is not surprising given that this stage of the process is most open to suggestions from citizens and is characterised by a significant degree of public deliberation, which new ICT tools are designed to facilitate. It may also indicate the exploratory or experimental nature of these online initiatives, given that this is the stage where e-engagement is most likely to complement, rather than disrupt, traditional methods of policy making. A few countries offer examples of online tools adapted for use at all stages of the policy cycle; others offer illustrations of e-engagement at a specific stage (e.g. policy formulation or monitoring). Whether the lack of examples of online engagement during the implementation and evaluation stages of policy making indicates that these are less amenable to e-engagement, or simply less widespread, remains an open question.

145. Who? The case studies illustrate the wide range of public bodies now exploring the use of new ICTs to engage citizens in policy making with local governments, national governments and parliaments, and bodies operating at the intergovernmental or international level (e.g. the European Commission). Obviously, the objectives, scope and target groups of e-engagement efforts undertaken by these bodies differ considerably. Nonetheless, they all offer valuable insights into the opportunities, dynamics and limitations of online information, consultation and participation in policy making. The target groups addressed also vary and may include all citizens (e.g. within a given geographic area), all interested parties (e.g. independently of location) or specific sub-sections of the population (e.g. marginalised groups, businessmen, youth).

146. How? Most case studies illustrate the importance of ensuring the integration of online and traditional methods of citizen engagement in policy making both to provide information on a policy issue or the e-engagement exercise (e.g. through posters, printed brochures, local press) and to offer a range of options for citizens to provide feedback (e.g. post, telephone, fax, e-mail or co-ordinated traditional and online discussion forums). The importance of active promotion of online consultation exercises (e.g. through leaflets, stickers, Web site advertising banners) is also important. Specific technologies chosen for e-engagement vary in their degree of sophistication – but most feature a dedicated Web site with e-mail options. Others adopt specialised software to manage online deliberations or use password-protected discussion areas for registered users. It is also essential to ensure competent and constructive moderation of online deliberations.

Access to information

147. The Internet is the medium of choice when providing citizens with access to government information anytime, anywhere. ICTs offer powerful tools for searching, selecting and integrating the vast
amounts of information held by public administrations as well as presenting the results in a form that can be used by individual citizens.

148. Access to information by citizens regarding government and administrative activities remains a basic precondition of government accountability, reinforcing formal representative arrangements. This opening up of processes, whether for policy decision-making, processing of applications or government procurement can, through external scrutiny by citizens and civil society organisations, reinforce ethical behaviour and the consistent application of laws and regulations.

149. Online information provision can also be an important element in preventing corruption. Information on entitlements and costs of services can open up decision making and reduce opportunities for arbitrary behaviour. Systems that guide applicants through complex entitlement procedures can be incorporated into information provision and can help reduce fears of corruption by clarifying the decision-making process. Online tracking of the processing of an application can also be a mechanism to promote openness and reduce fears of corruption, particularly when linked to formal timeliness standards for approval processes.

**Box 18**

**Korea: Preventing corruption by improving transparency in administration**

In the past, citizens not only had to worry about unreasonable charges arising from delays for civil applications; they were also unable to track the processing of their applications. To alleviate these problems, the Internet Procedure Enhancement for Civil Applications, which provides access to information on application, processing and result of civil services through the Internet, was adopted.

Currently, information on applications, review results and government employees responsible for civil applications is available on the Internet for all government organisations, including local governments and communities. (An example is the Seoul metropolitan government’s OPEN system at http://open.metro.seoul.kr)

This system has made civil administration services highly transparent by eliminating unreasonable processing of civil applications and reducing processing time.

150. Decision-support systems that guide applicants through complex processes or legislative entitlement provisions can also, through use, improve the confidence of citizens that laws and regulations are being applied fairly. This can reduce administrative and judicial appeals, which impose costs on both administrations and customers. Take-up of entitlements will also be facilitated by helping potential applicants and their advocates better understand the options available.

151. Government information can also be seen in broad terms as a common resource of value for a range of individual social and economic processes that, in the great majority of cases, do not involve engagement with government. The online environment provides the opportunity for government to act as an authoritative source of information, and to this end, many governments build on existing business and other information programmes. Some of the most popular government Web sites deal with the weather and genealogy, hardly a major policy focus of government.

152. **Access** and **accessibility** are two key issues in enabling citizen to obtain online information, as defined in a recent report on online consultation by the Government Online International Network (Poland, 2001, p. 9):

- **Access**: "the real possibility of consulting or acquiring government information electronically".
• **Accessibility**: "the ease with which one can actually make use of the possibility of consulting government information electronically". This definition usefully emphasises the perspective of end users of government information and their capacity to find, digest and use relevant information. The report proposes seven criteria to determine the degree of accessibility of online information: recognisability and localisability; availability; manageability; affordability; reliability; clarity; and the ability to cater for special needs (e.g. persons with disabilities).

153. Improving the accessibility of online information can be achieved by: providing the information in terms of specific “life events” or policy issues; search engines; software for style checking and improving the intelligibility of government texts; multilingual translations of official documents; provision of online glossaries.

**Consultation**

154. The unprecedented degree of interactivity offered by ICT has the potential to expand the scope, breadth and depth of government consultations with citizens and other key stakeholders during policy making. At the same time, these new tools pose significant challenges to governments in terms of their technical, political and constitutional implications. Among the questions raised are: How can government ensure an equal hearing and “assured listening” to so many individual voices? How will such inputs be integrated into the policy-making cycle? What is the role of traditional mediators (such as civil society organisations) and elected representatives (such as parliamentarians)?

155. A number of tools are available to governments intent on collecting citizens' views and suggestions on issues proposed for online consultation, including: government consultation portals or Web sites; e-mail lists; online discussion forums; online mediation systems to support deliberations; ICT support for off-line consultations. Current experience in OECD countries clearly shows the importance of ensuring competent, independent and effective moderation of online public deliberations.

156. In the interests of transparency and accountability, governments also need to develop ICT-supported tools for the analysis of public input and to provide feedback to citizens on how their comments and suggestions have been used in reaching decisions on public policy.

157. Among the issues to be addressed when launching online consultations are (Macintosh, 2002):

• Who defines the criteria by which citizens' inputs are analysed?

• How can e-contributions be incorporated into decision-making?

• How are judgements made about the relative weight of e-contributions with respect to other inputs?

• How and to what extent can technology support or highlight areas of agreement and disagreement?

• Can technology adequately support the summarising and content analysis of contributions?

158. As has long been the case in traditional off-line consultations, the earlier e-consultation takes place in the policy cycle the better its chances. Online consultation also faces some specific challenges,
such as its in-built self-selection of participants with access to the Internet; this raises the risk of over-representation of a small cross-section of the population. However, such risks can be obviated by efforts to enable wider access (through public kiosks, cyber-cafes and community centres, as well as TV and other digital platforms) and an adequate investment by government in promoting and supporting online consultations.

Public participation

159. As defined in the OECD’s Citizens as Partners, active citizen participation in policy making is “a relationship based on partnership with government in which citizens actively engage in defining the process and content of policy-making. It acknowledges equal standing for citizens in setting the agenda, proposing policy options and shaping the policy dialogue – although the responsibility for the final decision or policy formulation rests with government” (Citizens as Partners, OECD 2001). Few concrete examples of this strong formulation of government-citizen partnership are to be found at national level, whether online or off-line.

160. Options for online public participation are currently being explored in OECD countries. They include the use of e-petitions (to government or parliament); online referendums and shared online work spaces for deliberations and development of policy options. Additionally citizen participation includes proactive engagement in the provision of public services, such as community-based activities.

161. Only a very few OECD countries, however, have begun to experiment with online tools and discussion formats that leave citizens much latitude for proposing opportunities for participation, setting the agenda for discussion, submitting their own proposals and shaping the final outcomes (OECD, 2001, p. 58). While many of the barriers to innovative forms of e-engagement may be technical, others are more closely related to cultural resistance in policy making to new forms of partnership with citizens and civil society and factors that shape the traditional policy process in representative democracies.

Future challenges

162. The main challenges for e-engagement include (Macintosh, 2002):

- **Scale.** From a citizen’s perspective, the question is how technology can ensure that an individual’s voice is not lost in a broad debate. One approach is to design technology to give individuals the electronic means to find others with a similar point of view. There is a need for technology to make available virtual public spaces in which an individual’s voice can develop into a community (public) voice. From a government perspective, there is the challenge of how to listen to and respond to every individual. Fostering online communities and developing e-engagement tools to support such communities could enable a more collective approach.

- **Capacity.** The second challenge is harnessing ICTs to encourage citizens to think constructively about public issues and listen to, and engage in, argument and counter-argument. There is therefore a need for accessible and understandable information and an opportunity to debate using tools such as next-generation mediated discussion forums. Related to this challenge is the effort to involve otherwise disenfranchised groups in policy making (e.g. the socially excluded, youth). There is a need for e-engagement tools that provide citizens with an opportunity to participate in, and to understand, collective decision making and develop the skills of active citizenship.
• **Coherence.** Governments need to take a holistic view of the policy-making cycle and design technology to support the processes of informing, consulting, participating, analysing, providing feedback and evaluating. Inputs received at each stage in the policy-making cycle need to be made available at other stages of the process so that policy is better formulated and citizens are better informed. Consideration should be given to addressing if, and to what extent, knowledge management techniques can support the policy-making cycle.

• **Learning.** Online engagement in policy making is new and examples of good practice are scarce, hence the need to build on the experience of others and the need for comparative work. National governments should take advantage of innovative e-engagement work under way at the local level, in parliaments and in other countries. Of course, any e-engagement system that proves successful in a given context must be adapted to the culture, traditions and objectives of other government units that might wish to replicate their experience.

• **Evaluation.** Tools are needed to assess what value added online engagement has, or has not, brought to policy making. There is a need to understand how to assess the benefits and the impacts of applying technology to open up the policy process to wider public input. As governments increasingly support the development of ICTs to enable citizen engagement on policy-related matters, there is a corresponding need to know whether e-engagement meets both governments' and citizens’ objectives (see also section on Monitoring and Evaluation).

### Box 19

**Italy: Mo-Net – Modena’s civic network for e-consultation**

Modena is a local administration able to carry out e-consultation. Its Mo-Net offers an example of back-office re-engineering which has strengthened relations with other territorial administrations, activated interest groups such as associations, schools, professionals and public utility projects and delivers targeted services, thereby forming the basis for public/private partnerships.

However, its success is hindered by the fact that regional and national government systems lack the means to finance similar initiatives. Paradoxically, its scope of action is the main problem, as it is difficult to justify the expense borne by a single local body for the delivery of services used by people living in other areas of the country.

### 4.3 Back office

163. The term “back office” refers to the internal operations of an organisation that support core processes and are not accessible or visible to the general public. The implementation of e-government goes hand-in-hand with a number of back office reforms. One the one hand e-government will help bring about these reforms, while on the other hand e-government requires such reforms in order to be successful. The back-office operations described in this section include:

- Organisational Change
- Leadership
- Central co-ordination
• Collaboration
• Skills
• Public-private partnerships
• Managing risk and cost
• Monitoring and Evaluation

164. In this section, each of these areas will be discussed in turn.

Organisational change

165. ICTs have been changing the way public administrations operate since they were first introduced in the 1950s and 1960s. Mass processing tasks have been transformed, as have internal business processes such as personnel record keeping and payments to officials and contractors. The Internet has led to wider sharing of information and interaction both within government and between government and society. E-services provide an opportunity for process re-engineering and improvement – even though administrations may or may not seize this opportunity.

166. To date, government structures have been resilient in the face of this technological onslaught. Traditional bureaucracies still hold sway in public administrations, albeit in an environment of reform that has seen greater use of devolved agencies, the disposal or outsourcing of non-core activities and increasing performance flexibility for public administration managers.

167. Governments, in general, have tended to try to use technology as a patch to provide a seamless interface with users to a Byzantine administrative structure. All too often, ICTs are overlaid on an existing organisational structure without any thought to how those structures can be improved. For example, since it is much more difficult to change agency behaviour and to establish a culture of co-operation, it has been easier to create national web portals so that users can find everything they need by going to a single site. In this respect, compiling website links under a single portal resembles the earlier process of digitising information onto web sites – information is rearranged without a fundamental shift in processes or procedures.

168. Over time however, can administrations continue to meet the challenge of proactive electronic service delivery using current practices and structures? For e-government to deliver its benefits, the ways in which public administrations work will have to change. This process has begun, and in fact is difficult to separate from the introduction of the technology. This section of the report looks at the broad changes in management strategies that are needed to build sustainable change around e-government and at organisational features that may be emerging in response to the rollout of e-government initiatives.

Building sustainable change

169. Evidence from both private and public sectors reinforces the view that ICT needs to be seen as one aspect of reforming organisations to achieve greater efficiency and other governance objectives. Member countries understand the need for a package of changes, involving both ICT and non-ICT elements. The benefits sought – more effective outputs, greater efficiency – require more than just introducing ICT into existing organisations and work processes.
170. Possible organisational changes to accompany further deployment of ICT can be considered at the individual project level, the level of the organisation and from a cross-government perspective. These aspects are linked; while changes in individual processes will also require organisational changes, there ultimately must be congruence between the changes and the culture and operations of the organisation. The broader frameworks in which public-sector organisations operate also need to be able to accommodate and facilitate necessary agency-level changes.

171. At the e-government project level, new work processes need to be accompanied by deep training programmes, structured communications strategies and job redesign. They may involve a flattening of hierarchies as the need for checking or direct supervision of achievement of tasks disappears. Requirements for semi-skilled staff may be reduced, as routine tasks are automated; invariably efficiencies in this context mean the need for fewer staff. Smaller-scale activity, such as the development of a Web site as an additional publication channel, may not require complex supporting changes or have as great an impact, but will require consideration of organisational change and its consequences.

172. Introducing successful reform will require coherent change management strategies. The key element here is dialogue with stakeholders within and outside the organisation. The involvement of front-line staff at the project initiation stage is increasingly seen as an effective way of reducing the conception-reality gap between the initiation of reform projects and final deliverables.

173. Change is needed at the level of the organisation. While small-scale projects can be successfully implemented without disturbing the broader organisational environment, at some point changes in this environment become crucial if ICT-enabled reform is to work. Re-engineering processes may require a shift in the balance of roles and responsibilities between different functional areas or between the agency’s central office and local offices. Increased data sharing within an organisation may upset individual arrangements, by making particular data holdings (and their operators) redundant, and require concerted management effort to gain acceptance of the new arrangements. Greater sharing of data, enhanced communication and more consistent decision making can facilitate a devolution of decision making to an organisation’s lower levels and the creation of specialised units at local level or of units focused on specific customer groups, while maintaining overall policy coherence.

174. Key issues to be addressed include:

- The need for understanding and support by senior management. As with the introduction of e-government across government as a whole, support from senior management is a precondition for the success of reform. This requires more than statements of principle and good intentions. Crucially, it involves senior management time and understanding, factors which can be in short supply. Examples of successful major reforms involving ICTs indicate that senior management’s understanding of the impacts of proposed reforms, their risks and benefits, is required if the reforms are to be sold to staff and to key external stakeholders such as political leaders. Without this understanding, senior managers will less enthusiastically deal with the internal governance frameworks of the broader public administration that may hamper reform.

- The willingness and ability to adopt new ways of working. At one level, this will be determined by the willingness of senior management to commence the process of changing the organisational culture. It will also depend on the willingness and ability of unions and individual staff to adopt new work practices, such as more decentralised decision making, teamwork, information sharing among peers, new recruitment arrangements and remuneration and incentives to support the desired changes.
175. Internal governance frameworks in the public administration may hamper the adoption of practices that facilitate ICT-enabled reform. OECD analysis of the use of ICTs by firms has highlighted the importance of flexible labour markets and the legal frameworks covering ICT-based activity and the need generally to reduce barriers to initiative and innovation. While governments need to balance a full range of factors, public administration frameworks will need to allow ministries and agencies to adopt new practices arising from e-government. While frameworks differ greatly across OECD member countries, key aspects are likely to include the following:

- **Human resource management policies** need to allow for flexible remuneration and working conditions, for the development of teams, for flexible working hours to deal with demand peaks and for job redesign to cover a broad range of customer needs and government programmes.

- **Legal frameworks** need to provide public officials with certainty regarding their use of ICTs, for example regarding liability for advice provided online, the status of electronic decision-making processes, of authentication and of online business processes.

- **Privacy and data protection frameworks** need to clarify the situation as regards the sharing of information within and between agencies, officials’ rights and responsibilities, and the rights and entitlements of citizens.

**Box 20**

**Canada: Creating an Agile Work Force within Existing and Evolving Policy and Accountability Structures**

The public expects governments to provide high-quality service across all channels, including the Internet, and to use the most effective practices and technologies. Meeting these expectations requires a more agile work force capable of adapting government processes rapidly in response to changing needs and circumstances. This involves fundamental changes in cultures and a commitment to creating “learning organisations”.

The Organisational Readiness Office in the Chief Information Officer Branch of the Treasury Board of Canada Secretariat has adopted a community-based strategy to address human resource issues related to service transformation in the information technology, information management and service delivery communities. Members of these communities are public servants who play strategically crucial roles in transforming and “e-enabling” service delivery.

Community-led initiatives such as competency-based staffing, greater use of pre-qualified pools, generic competitions for executive-level positions, repositories of work descriptions and the e-Learning Gateway are demonstrating that existing legislation and regulations are not insurmountable barriers to the modern management practices needed to implement a service transformation agenda.

176. On the basis of the foregoing, some tentative conclusions can be drawn:

- ICT enabled organisational changes may **reflect particular applications** and the changes adopted to carry out their functions and achieve their objectives.

- Organisational change is a **dynamic process**, albeit with phases of different rates of development and change.

- While individual processes may be transformed, changes will occur less quickly for organisations, reflecting the **differential levels of impact** on different functions. For public administrations overall, the rate of change will be slower still.
While certain ways of working may become more pervasive in the future, with greater data sharing and networking, greater process automation and greater collaboration between and within agencies, there will be no single model for e-government organisations. Even if there were, it would soon be out of date.

Those dealing with public management organisational issues should act as facilitators rather than developing grand plans to restructure public administrations around a particular current technology. Frameworks are required for ICT use, and they need to be reviewed to ensure their continuing relevance. Broader internal governance frameworks for public administration need to be reviewed to ensure that they support, rather than hinder, the adoption of ICT-enabled reforms.

At the project and organisational change level, senior management commitment is essential for carrying out complex organisational changes. Major changes are disruptive by definition and in particular may raise broad managerial and political issues that go beyond the organisation involved. Dealing with potential job losses as a result of ICT initiatives is particularly challenging. E-government co-ordinators can provide support to senior managers by ensuring the sharing of experiences and good practice approaches (see section on leadership, below).

**Leadership**

177. E-government implementation can be difficult, risky and expensive. Governments are increasingly asked to translate a general vision into effective public services while facing time constraints, lack of resources and political pressures. The cost of wrong policies and the risk of losing the reform momentum can be high.

178. Leadership is not just about motivating people and creating incentives and opportunities for actions. E-government is also about change, and many e-government advances to date have been driven by the enthusiasm of individuals and individual agencies. But there can be considerable resistance to change particularly to the level of change required if some of the more significant efficiencies and service enhancements through seamless services are to be realised. E-government has a potential to disrupt these barriers to change. While the form and arrangements adopted will be very much determined in the context of each member country’s political and administrative environment, and will continue to evolve as lessons are learnt, leadership is an essential ingredient of e-government in order to motivate and break down barriers to change.

179. Sustained leadership is important at all level of the e-government cycle. At the early stages, there is a need to gain acceptance of concepts and benefits, and to put in place frameworks to sustain momentum and structure implementation in an efficient manner. As more complex transactional services are implemented, the need for leadership and support will continue, particularly as benefits may take time to emerge.

180. Leadership is a catalyst for innovation. Broad reforms require perspectives and pioneers able to translate the vision into action. E-government leaders have learned how to put in place the right administrative mechanism to support agencies in the e-government implementation. Breaking the rules and forcing the reform momentum can have incredibly high costs in terms of adjusting the internal processes and bring innovative thinking into the organisation.
Types of Leadership

181. There are many styles of leadership. Different kinds of leadership may co-exist and be a key to success, depending on the stage of the e-government process. In a very early stage of e-government development the leader may obtain views on what needs to change, share a common vision with the personnel and evaluate new ideas. In a more mature stage, selling the benefits of a vision and creating personnel commitment to it are leverage to success.

182. Leadership can be exercised at all level of the organisation. Political leadership has an important role in shaping and backing e-government initiatives. Political leaders contribute to the establishment of the e-government vision, define priorities, filter citizens’ needs have to make the decisions and have the will to carry them out. Strong political leadership can make a difference in forcing the momentum for change and easing the reform process. But can also increase management motivation and sense of responsibility.

183. Leadership can also articulate a unifying theme that can propel the e-government initiative through all the necessary steps (see box 21). It is important to understand that results are most likely when leaders elevate the public profile of their vision and press for its successful implementation by tying it to broader human development and democratisation goals.

**Box 21**

**Estonia: Mobilising with a unifying concept and presidential leadership**

Presidential leadership in Estonia declared Internet access a human right, thus creating strong national support for the implementation of the Tiger Leap Forward Initiative, a multi-sector program with the overall objective to create an e-society. The Estonian President was an outspoken advocate for the Internet, and this greatly influenced the success of the initiative.

The concept of the Tiger Leap was initiated at a high political level, when Ambassador of Estonia to the U.S. Toomas Hendrik Ilves and Minister of Education at the time Jaak Aaviksoo initiated an exchange in 1996. This exchange insinuated that the new information and communication technology will alter not only the general life arrangement but the whole educational paradigm. Symbolising the radical changes and technological spurt proposed for Estonia, the program was called Tiger Leap upon the example of the economic giants in Asia.

The programme was defined to include participation of the President of Estonia as patron of the program. On February 21, 1996 President Lennart Meri declared the Tiger Leap project officially open in his address on the national television.

The Tiger Leap project has been successful, in part because of strong, high-level leadership:

− A key feature of Tiger Leap was a commitment to connect every school in Estonia to the Internet, a goal that was achieved in 2000. The Foundation is currently giving support to about 720 primary and secondary schools, including about 100 schools that serve the Russian-speaking minority in Estonia.

− As a result of these efforts, the generation of Estonians now in school are 100% computer literate. Teachers report that students are highly motivated to learn computing, both out of personal interest and because they know it will lead to better job opportunities.

− Tiger Leap has also had an impact in publicising the Internet: the media attention given to the program ensured that Estonians heard about the Internet even if they had never used it themselves, and it reinforced the feeling that Internet access was something important.

**Source:** The Tiger Leap Foundation
184. Political leadership is also linked to administrative simplicity. As a tool for administrative process simplification, e-government can be used as an effective reform leverage only if there is a strong political leadership to support its introduction and development.

**Box 22**

**Korea: the role of the leadership in e-government**

Korea’s experience in establishing an environment of co-ordination and leadership for constructing e-government has been singular. Until recently, individual ministries without any co-ordination among departments had carried out digitalisation efforts.

After an initial phase of uncertainty due to internal resistances to change, an organisational structure a non-standing committee with both government and non-government committee members was created and was co-chaired by a civilian member and the Senior Secretary to the President for Policy and Planning. The resultant organisation met the demands of ministries, in particular the Ministry of Information and Communication and the Ministry of Government Administration and Home Affairs who had previously debated the optimal structure for the organisation.

The e-government committee that was established became the key co-ordinating body. The committee had the ability to bring about inter-departmental co-operation largely depended on the leadership role of the President, the powers afforded it to co-ordinate between ministries, the personal networks of the committee members and the goodwill and integrity of members. Its non-threatening status and overarching role facilitated early progresses, which also led to greater respect and participation from ministries.

The Korean experience shows how high-level leadership has enabled the committee to stand above ministerial conflicts and promote an environment of co-operation better than if it was headed by a particular ministry or even jointly between two or more ministries. At the same time it stresses the role of the President as an active leader with a strong interest in backing the government initiative and to push for achieving a greater co-ordination. The personal and professional ties of the chairmen formed over years served as a tool in building a strong network for the committee and linking government with various sources that enhanced capacity to create e-government.

*Source: Korea Country Paper (2002)*

185. Top management involvement at ministerial level is essential to ensure vertical e-government planning, to get the necessary resources, to motivate staff and support dealings with external partners and stakeholders and to ensure co-operation across ministries and agencies. Top management involvement, support and responsibility is also necessary in order to produce an e-strategy that is integrated both with the general business plan of the organisation as well as incorporated into the planning and budget process. Top management attention, however, is a scarce resource and ICT projects are often regarded as low priority technical issues rather then key to the success of the overall business plan (see The Hidden Threat to E-Government, OECD, 2001).

186. Top management initiatives to drive organisational changes should be accompanied by **lower management efforts**. E-government planning and implementation can succeed without top management involvement provided that an organisation has extremely innovative lower level managers, able to translate a broad e-government vision or objectives into precise actions and policies.
Interviews with several Finnish ministries and agencies that are advanced in terms of e-government planning and implementation gave the impression that top management interest in and support of e-government activities were not present at the outset. The main drivers of e-government initiatives were the need to make organisational changes and awareness by lower-level managers that e-government could be used to support changes in the business process. Given the proper initiative (and resources), IT offices can drive change. An IT official from the Ministry of Labour said, “saying that it is the fault of the political authorities not getting involved is an easy way out.”

This is not to say that top management responsibility is not important when planning e-government. What is suggested, instead, is that extensive e-government planning and implementation can succeed without top management involvement if an organisation has extremely innovative lower-level managers and e-government initiatives can facilitate general organisational changes.

Source: E-Government in Finland (2003).

Leadership as a co-ordination tool

187. Leadership is an indispensable tool to promote co-ordination within the organisation, and is fundamental in managing e-government projects. This is even more stringent for the public sector where governments have a wider mix in their products and services than what private companies have, making co-ordination even harder. Managers must be able to exercise leadership and to manage responsibilities of their own IT systems in order to avoid duplications, produce savings and increase efficiency through joined up services.

188. Leadership is not about centralisation of competencies. In an increased complex environment, e-government organisation should be in line with the principles of delegation of power and responsibilities. Creating local leaders (team leaders, project leaders, etc.) is the key answer to the principle of decentralised management and decision power distribution over IT in their own organisation.

189. As e-government has disrupted old organisational hierarchies and facilitated team working and information sharing, the ability to co-ordinate people, resources and responsibilities has become an asset. Japan’s experience revealed how strong leadership from their Prime Minister strengthened executive level co-ordination by facilitating e-government strategies and policies among ministries (see box, below).
### Japan: The IT Strategy Headquarters

The Japanese government has recently undertaken significant efforts in promoting the development of the information society, with e-government playing the role of the catalyst for IT spread. The political and governmental support to the project has been essential in setting up the organisational structures.

In January 2001, the Strategy Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society (the IT Strategy Headquarters) was established within the Cabinet for the purpose of “further promoting policy measures rapidly and intensively to create an advanced information and telecommunications network society”.

The headquarters is chaired by the Prime Minister and consists of all the Cabinet ministers, representatives from the private sector, etc. It is in charge of formulating and adopting overall national IT strategies and policies, e-Government being one of the major issues dealt with by the Headquarters.

A body in charge of IT policy had existed within the cabinet ever since 1994, but the new Headquarters differs in: 1) it was established by the strong leadership of the Prime Minister; 2) a law was adopted in the Diet for its foundation and, therefore, it has explicit duties and powers; 3) it has its own secretariat with exclusive staffs.


The IT Strategic Headquarters reviews the Priority Policy Program every spring, studies the implementation status of measures every spring and autumn, and make the study result public, in order to ensure steady implementation of the measures included in the program.

*Source: Japan Country Paper (2002)*

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**Barriers to leadership**

190. Exercising leadership implies knowing organisation strengths and weaknesses and being able to make the organisation commit to the achievement of goals even if this can lead to the breaking of internal balance and distribution of power. E-government should create incentives for leaders to emerge by setting up transparent organisational structure and clear sets of responsibilities.

191. Leadership requires certain skills, which may not be available without training (see section on skills). Organisations must spend more attention in training new leaders by improving their managerial skills and avoid thinking that structure and technology alone could supplement human resource management. External acquisition of IT is one of the reasons for a lack of IT leadership within organisations. Term contract and external appointments can contribute to the dispersion of top management IT skills.
Box 25

**Principle for Successful E-government Leadership**

- Co-ordinating resources and responsibilities within the organisation
- Developing a common vision and set objectives (e-agenda)
- Developing the ability to persuade people to that vision in order to convince the enthusiasts and engage the sceptics
- Developing a customer-led and customer-focused mentality
- Ensuring that leadership can be recognised and encouraged wherever it is found in the organisation
- Raising the awareness and developing the skills of employees, encouraging innovative solutions to organisational problems
- Assessing and building the capacity to deliver e-services, leading people through the difficult process of change, securing the commitment from staff along the way and managing their programme of work
- Ensuring technological development within the organisation and make sure that personnel can fully benefits from that
- Recognising the full use of technologies but not chasing technological solutions in itself

Source: elaborated from the Skills Foresight Report (http://www.lgemployers.gov.uk/psd/eskills/leadership.htm)

**Central co-ordination**

192. Central co-ordination is a feature of most OECD e-government strategies, and generally involves formal organisational units located in public administration ministries or linked to broader information society units. Central co-ordination can bring strategies from different agencies together, ensure compatibility and reduce duplication.

**Benefits of central co-ordination**

193. An important role of such central co-ordinating units is to act as a focal point for promoting government-wide e-government development. This may involve being responsible for developing the e-government strategy, monitoring progress towards goals, promoting benefits to the public, linking e-government activity to broader information society goals and generally acting to generate and sustain momentum. This may also involve reporting on progress and reassessing strategies in the light of experience and as progress is made.

194. Central co-ordination can also facilitate the efficient implementation of e-government, for example by:

- Promoting sharing of information and good practice. Measures here include central online registers of projects, seminars, publications and Web sites on good practice and communities of interest. This can also include brokering joint operating arrangements and exchange of best practice on common operating processes such as ERP systems.
Facilitating efficient acquisition of ICT products and services. This may cover e-procurement, compulsory central purchasing of communications services and software, sharing of price and other information between agencies.

Gaining acceptance across government of various frameworks and standards to facilitate interoperability and efficiencies, such as policy frameworks, outlining principles governing acquisition of ICT, business and technical policies and standards.

Taking steps to avoid duplication of effort by information sharing, expenditure approval processes, brokering of joint contracts.

Facilitate collaboration (see next section), especially regarding seamless online services and shared infrastructure projects.

And central co-ordination can promote innovation and risk taking. Agencies implement critical applications and have little scope to experiment and take risks. If funding is available, a central e-government unit can act as a central R&D unit on behalf of agencies across government.

Invariably, some form of governance arrangements such as a co-ordination committee (or committees) have been established to develop and co-ordinate these practices. These generally comprise representatives of key agencies and may include representatives from the private sector and other levels of government.

Whole-of-government structures are important to steer e-government implementation across government, to provide a framework for collaboration across agencies and a vehicle for input from the senior management level, and to keep e-government activity aligned on broader public administration agendas. Approaches that have been adopted include committees of agency heads and chief information officers. The roles of such bodies vary, from purely advisory and information sharing, through to policy development and implementation oversight. The involvement of non-government representatives from industry bodies, academia and civil society organisations has been effective.

The Mexican government has established networks of senior managers working on different topics, such as innovation, human resource management, social communication and ICT use. The latter network is formed by 60 agency chief information officers. Its goals are to build a government-wide technological infrastructure, to agree on standards, architectures and joined-up e-services, to foster savings and re-engineering through ICT, to promote knowledge management and e-learning within government and to enhance citizen participation.

Requirements for co-ordination

OECD countries understand that decentralisation is an effective management tool. Business unit managers manage ICT as they do other resources and are generally the best placed to be aware of business needs that can be efficiently addressed by ICT applications. However, agencies cannot operate in isolation, especially with regard to ICT. The nature of e-government requires a level of co-ordination to ensure interoperability, avoid duplication, ensure coherent action in a range of crucial areas such as security and privacy protection, and to provide the framework and capacity for seamless services. The need for co-ordination becomes more pressing as member countries increasingly move to implement more complex, transactional services. The cost of introducing such services, and the cost of making them
interoperable after they have been introduced, makes avoiding duplication and implementing projects in a structured environment all the more pressing.

199. There is as a result a central dilemma for e-government implementation. In the terms of the Finnish Council of Ministers: “a basic problem is how agencies’ responsibility for results and autonomous operation can be retained while at the same time ensuring the interests of the government administration at large in questions pertaining to interoperable systems and shared use of information resources”. While this reflects the broader issue for government of co-ordination versus devolved management responsibility, if e-government is to succeed it is crucial to get the balance right. The stronger the control exercised over co-ordination, the higher the costs due to the web of regulations and requirements to which new, creative initiatives must adhere. Co-ordination may stifle innovation and initiative, leading to foregone opportunities. On the other hand, a co-ordinated approach may generate efficiencies, reduce risk and facilitate a faster and broader rollout of e-government initiatives.

Box 27

Italy: Network of regional competence centres (RCCs)

The Department for Public Administration and the Department for Innovation Technologies launched at the beginning of 2002 a joint project to establish a nation-wide network of regional competence centres for the development of e-government and the information society.

The general objectives of the RCC project are: 1) to support regional and local actors in defining and implementing e-government programmes and projects, while ensuring coherence with the national strategy; 2) to identify and develop models, approaches and tools jointly to address aspects of e-government construction; and 3) to promote and support collaboration among the different levels of government within and across regions.

The RCCs are to act as facilitators. At the same time they are expected to receive, understand and co-ordinate the demands and needs of local administrations and to propose methodologies, processes and solutions.

In the start-up phase, it was decided that the project should be as flexible and simple as possible and test organisational solutions appropriate for different regional conditions. Thus, project teams are being created, typically with a dedicated group of four or five volunteers from different levels of government. To these groups of civil servants two to three consultants are assigned on a full-time basis by the central project co-ordinator. Their role is mainly to support technical assistance and training activities at local level. The central group and its network of consultants ensure the circulation of ideas and practices as the competence centre is built, leading (it is hoped) to shared features, operational approaches and service quality levels which can lead to a new national network, albeit not a state one network.

The creation of the project teams and, at a later stage, of the competence centres, is not imposed by central government but must come from the needs and interests of the local authorities. This is important: the presence of a strong commitment is essential to ensure the centre’s self-sustainability after the start-up phase. Consequently, the RCCs are being developed at different rates.

200. Peer review of anticipated projects by a panel of agencies can provide a valuable means of bringing input to the planning of the specific project. It can also provide a return to the reviewing agencies in the form of further knowledge of what is occurring across government and sharing the knowledge of peers.
To ensure co-ordination and implementation of the e-government agenda across all departments and public agencies, a series of instruments has been put in place. A high-level cross-departmental group of senior officials (Assistant Secretaries from the Information Society Implementation Group) promotes and monitors the e-government process across the Irish public sector.

201. Whole-of-government business and technical architectures provide a structured framework in which agencies can plan their activity, provide for interoperability across government and capture efficiencies through sharing of knowledge and joint projects. Specific information management standards support interoperability and provide users with a common interface when accessing online portals and services. Mandated minimum security, privacy and authentication standards are common. Such standards could usefully be adopted by other levels of government, such as provinces and municipalities.

Germany: SAGA - standards and architecture for e-government applications

SAGA has guided the implementation of e-government in Germany. Its aim is to develop standards for the smooth flow of digital information between citizens, business and the federal administration and to make as many electronic services as possible available using uniform procedures. Data models must be defined in order to develop integrated and interdisciplinary e-government applications.

In its current version, SAGA can be accessed via the federal government’s service portal at www.bund.de/saga. The document includes an explanation of what is necessary to respect its aims in terms of standards and architecture. SAGA describes its aims and the basic agreements, responsibilities and applications of SAGA, the architectural building blocks of SAGA, i.e. the components needed for a functioning e-government architecture, and the standards for the basic components defined in BundOnline 2005 (e.g. content management system, platform for payment transactions).

SAGA is not a final document. It is constantly revised to include the latest developments and amendments. To develop the SAGA document in a targeted way, the federal government’s service portal now includes a technology forum at http://foren.bund.de. It offers German-speaking experts and anyone interested a discussion area covering the various topics of SAGA, such as appropriate interface connections or interdisciplinary data models.
Box 30

Australia’s Business Authentication Framework (BAF)

Jointly managed by the Australian Taxation Office (ATO) and the Department of Employment and Workplace Relations (DEWR), in consultation with the National Office of Information Economy (NOIE), the BAF project aims at developing functionality that will allow Commonwealth government agencies to authenticate the online identity of businesses that use the agencies’ e-commerce applications. The BAF provides utilities to assist agencies with the development of e-commerce applications using public key infrastructure (a Certificate Signing Interface – CSI) and will assist with the validation of incoming business certificates by providing a centralised validation service (Certificate Validation System – CVS).

The BAF collaboration grew out of a number of business-centred e-commerce initiatives undertaken by the ATO and DEWR which require digital signature certificates as core enablers for secure and trusted messages sent via the Internet. While each agency is nominally responsible for developing one project element (i.e. the CSI element by the ATO and the CVS by the DEWR), which suggests a straightforward division of labour, the success of the project nonetheless depends on the mutual dependency of the two elements and requires close collaboration for the BAF project as a whole.

The BAF Joint Taskforce was established to manage the development and implementation of both elements of the framework, and is represented by ATO, DEWR and NOIE. It has two main groups.

- A senior executives group meets periodically to manage high-level issues, including the impact and influence of the BAF on other initiatives. The group includes representatives from other agencies that might use the BAF, such as the Australian Customs Service.
- A project management group, whose more direct role is to steer the BAF project to the completion of specific milestones.

There is also an associated users group, with members from interested government agencies and businesses. Owing to successful collaboration between the two agencies through the joint taskforce, and the structure of the taskforce itself, the BAF is now approaching operational readiness. The CSI recently entered a testing phase, and the CVS is due to begin testing soon.

202. One example of central co-ordination has been the use of centralised e-procurement systems. E-procurement is the procurement of goods through an Internet or ICT-based process. In the broadest sense, it begins with contract establishment, but also covers ordering, invoicing and payment. Efficiency needs are a driving force for e-procurement. E-procurement can lead to savings through administrative simplification and time saving, but also through increased transparency and competition among suppliers. In addition, e-procurement can lay the groundwork for increased co-ordination if it is used to promote interoperable systems and common solutions.

203. In order for e-procurement to be effective, it must allow organisations to pool their purchasing power. As ICT systems and e-government needs become more complex however, agencies are no longer looking for off-the-shelf solutions, but instead want tailored systems or even outsource solutions, including development and operations of systems. This makes it very difficult to develop economies of scale. In addition, decentralisation has meant that purchasing has been done independently, and thus organisations have different legacy systems and different needs stemming from different approaches. This can also be a major barrier to e-procurement.

204. The use of e-procurement can increase collaboration, but only with accompanying organisational change. Procurement personnel need to start thinking in terms of modular solutions that can cover different types of needs and contexts. They also need to build their skills to develop tenders for procuring and evaluating complex services and not simply units of hardware. At the agency level, procurement officials
need to better balance IT offices’ demands for flexibility with savings pressures. Finally, e-procurement is likely to reduce procurement personnel.

Box 31

European Commission: World Leaders in E-Procurement

The IDA Transborder eProcurement Study identified the world leaders in e-procurement to be: Australia, Canada, Finland, Germany, Norway, the United Kingdom and the United States. These countries have clear and nationally defined e-procurement strategies, and a wide range of mature projects in place. The report especially mentioned Finland as “the most advanced system”, as it covers almost all of the procurement cycle.

Source: IDA 2002

205. Use of co-ordinated budget funding for e-government initiatives, including specific approval arrangements, can avoid duplication and help governments set priorities across overall e-government activities. However, this may also add an extra layer of regulation and absorb much senior management time and capacity. The rules by which such arrangements operate need to be clear to all parties if they are to operate effectively.

206. A programme of key projects can be managed to test innovative approaches, provide broader demonstration effects, provide seed funding for initiatives that remove a bottleneck, or provide a model of common processes that can be adopted by a number of agencies. Such a programme can have important longer-term benefits by encouraging agency investment that would otherwise not occur and speeding up overall progress.

207. For the above measures to operate effectively, they require:

- **Central resources and support** from the e-government co-ordinating agency or a lead agency. For example, structured information sharing arrangements require at least some support to operate effectively and to remain valuable. Specific arrangements need to be reviewed over time to remain relevant and to take advantage of new approaches.

- **Commitment** by participating agencies. At the simplest, this will involve a commitment of staff time, for example, to release qualified staff to review activities and to participate in policy development committees.

- A government framework that acknowledges the value of co-ordination. Government-endorsed e-government policies generally provide the overall context, but the message needs to be reinforced, at both the political and senior public management level, that such co-ordination is valuable and indeed essential for many aspects of e-government activity. A particular target group is agency leaders, who, understandably, are driven by urgent agency-specific agendas, and need to see the value of devoting resources to co-ordination and shared information, with short-term costs and less apparent longer-term benefits. Engaging this group is extremely important.

- In a number of areas, such as security, privacy and authentication, **minimum standards must apply to all agencies**. These are generally embodied in legislation or regulations. The greater the degree of compulsion, the greater the responsibility on e-government co-ordinating agencies to make correct judgements and to involve user agencies in the decision. Consultation with user agencies to develop and implement requirements will be crucial.
208. These efforts can provide a framework for the efficient rollout of e-government initiatives. Requirements to share information on anticipated projects will help avoid duplication of spending and facilitate better use of corporate knowledge.

209. Given the inherently decentralised nature of e-government implementation, such an approach implies a model of co-operation that is more collaborative and horizontal than a top-down framework controlled by a central co-ordinating agency. In such a context, the latter’s role is broadly to facilitate sharing among agencies; ensuring that the overall regulatory framework is efficient; and managing whole-of-government key projects, frameworks and functions (see below).

**Collaboration and seamless services**

210. The dominant structural forms in all OECD governments are “stovepipe” or “silo” organisational units. Such units have relatively clear, mutually exclusive areas of responsibility and control and political accountability. However, the capacity to offer integrated, seamless government services so that users can interact with government as a single organisation, represents one of the major advantages of Internet and broad ICT use in government.

211. A core element of member countries’ reform agendas and e-government strategies is the adoption of a customer focus, with the objective of providing citizens and businesses with a coherent interface with government which reflects their needs rather than the structure of government. This customer focus has long been an element of broader public management reform and predates the generalised use of the Internet as a service delivery mechanism. One-stop shops, advice bureaux, whole-of-government telephone call centres and services such as information kiosks have attempted to bring together information and services from different government agencies.

212. The Internet has brought a quantum leap in efforts to provide this customer focus, and member countries are actively developing initiatives to draw together information and services for specific customer groups. These **seamless online services** aim to transcend the agency-based structure of the supply of information and services and present users with a coherent, integrated package of government information and services. Such services can provide higher levels of value to customers than separate services.

213. As services become more complex, efficiency considerations require greater co-operation between agencies, in areas such as authentication, shared processing and the exchange of data. The need for collaboration between agencies thus has both “front-office” (service to the customer) and “back-office” (efficiency in government) dimensions. From the customer’s point of view, government should appear as one organisation; from government agencies’ point of view, the customer should appear as a single customer.

214. Experience with implementing e-government seamless services has highlighted the impact they can have on agencies’ ways of working, structures and culture. The challenge of implementing and operating seamless services has also highlighted the need for change in internal governance frameworks of public administrations. The following section looks at these impacts to draw out potential lessons; these services can be seen as representing a leading indicator of likely future trends and pressures in e-government more generally.

215. One challenge to effective e-government collaboration is the need for **accountability**. In line with the acceptance of ICT, new public management models have promoted the empowering of managers by freeing up control over inputs and making managers accountable for specified outputs. The consequence is that managers need to have the power of decision over ICT use in their organisation if they
are to be effective. Top-down control of ICT, for example by controlling inputs, may reinforce the “flight from responsibility” for ICT use and related unit outputs by managers who are adverse to ICT.

Seamless online services: progress to date

216. At the level of information provision, online government portals are well established as a means of gathering together material from different parts of government. Significant co-operation among agencies has been required to enable these portals, but e-government central co-ordinators have also played a key role.

217. But the development of portals to provide customer-focused information, while challenging, has generally not required addressing differences in agencies’ ways of working or technical interoperability issues beyond a certain level. In practice, portals have also been established in some isolation from other service delivery channels (although in a number of countries call-centre and front-counter staff use the co-ordinated online information as a core resource).

218. The situation changes, however, when integrated transactional services are desired, and these are an important goal in most member countries’ e-government strategies. By their nature, such arrangements will require a greater level of collaboration to operate effectively. While many countries are active in this area, the current number of integrated transaction services involving services from more than one agency is small.

219. Increased collaboration is also needed in order to increase efficiency through shared projects. Shared infrastructure, for example for authentication of key customer groups, can facilitate individual agency initiatives that would otherwise lack a business case. It can also free agencies to focus on their specific content issues. Shared infrastructure is developed centrally, or by a lead agency, to facilitate seamless online services and improve the business case for specific agency initiatives. The use of such infrastructure by agencies can be mandatory, as for the UK’s Gateway, or available to be adopted if the infrastructure meets agency needs. For some initiatives, such as whole-of-government portals or secure networks, their value lies in their inclusive nature.

Box 32

Japan: Shared infrastructure - Kasumigaseki WAN

The Kasumigaseki WAN, which connects all national government head offices, has been in operation since 1997, as a secure intranet for national government. In 2002, it was connected to the Local Government Integrated Administrative Network to link central and local governments. In a first stage, it connects the central government and some 60 local governments (prefectures, major cities), and it is expected to cover all local government by 2003. This joining up is expected not only to improve the level of government services to citizens but also to promote streamlined and efficient administration in central and local governments.

220. Various “middleware” solutions are emerging as the dominant approach to technical integration in a number of member countries, allowing information to flow between the integrated customer interface and the various agency “back-office” environments. Implementing this approach varies, with different degrees of centralisation involved. The UK Gateway project aims to provide a common authentication and message hub for use generally across governments, as does Ireland’s Reach Agency (see box, below). In Australia, middleware development has advanced primarily in the area of business services and taxation, while arrangements in that sector in Finland use private firms (TYVI operators) as data gatherers and distributors.
Box 33

Ireland: Public Services Broker - an approach to middleware

In 2000, Ireland adopted the Public Service Broker model to deliver online public services. The Reach Agency (set up in 1999) was mandated to deliver it. Ireland is committed to having all key public services capable of electronic delivery available online, through a single contact point, by 2005. Delivery of public services progress through the framework of the Public Services Broker, which will provide “all day, every day” public services. The Broker’s key features are:

- Integration: Providing integrated access to services of central and local government through a single contact point.
- Multiple access channels: Making services available through multiple access channels, including online self-service, and intermediate services through both telephone contact centres and one-stop shops.
- Data security: Providing protected data vaults for secure storage of the personal or business information necessary to facilitate access to public services, while making available to public service agencies only the information that is strictly necessary for the delivery of specific individual services.

221. On the basis of experience to date, it is evident that the use of agreed standards and approaches and overall levels of co-operation between agencies is more important when agencies share users of their services. Close co-operation is a prerequisite for seamless transaction services, with pooling of market research on shared customers, common approaches to presentation, data sharing within government and the authentication required. Customer-focused co-operation can thus be seen as a key organisational principle for e-government; the greater the sharing of citizen or business users, the greater should be the level of co-operation among the relevant organisations.

222. The resulting landscape may have clusters of agencies with common customers, with strong levels of co-operation and common activity within clusters within a broad framework of co-operation across government.

Box 34

Sweden: Wilma - information system for processing migration cases

Wilma, the Web-based Information System Linking Migration Authorities, is a new IT support tool shared by Swedish authorities involved in processing migration cases. These authorities are the Migration Board, diplomatic missions (embassies and consulates general), the police border units and the Aliens Appeals Board. The purpose of Wilma is to process information concerning individuals, cases, documents and decisions. IT support is to embrace the entire chain, from application for a visa or residence permit at the diplomatic mission to a decision in the case and any appeal. IT support will promote more efficient monitoring of entries and exits.

The development of Wilma is part of broad changes aimed at rationalising the multi-authority process affecting the work of diplomatic missions. The improvement involves a basic strategy for applying a holistic approach to developing process-oriented methods. In addition to IT support, the new measures include the development of various forms of collaboration, skills development, strengthening of resources in the form of migration officers posted overseas, a central help desk, improved information, improved follow-up, etc.

Implications of seamless government

223. Arrangements for reconciling back-office systems with an integrated customer interface may give the impression that collaboration can be achieved primarily at the technical level, and that other operations...
can be left undisturbed. In practice this is unlikely to be the case. In effect, collaborating for seamless e-government services will lead to a deeper engagement between the agencies involved:

- Implementation of integration models for online services will require a high level of cooperation for architectures, service delivery policies and standards, implementation methods and schedules, and the co-ordinated acquisition of ICT services and equipment by individual agencies. This will have implications for budgets, business plans, skills and resource management generally. Joint teams may be established to implement new arrangements and may be retained to carry out or co-ordinate maintenance and upgrading.

- Seamless online service content will require deeper collaboration on issues such as service quality, presentation of material, decision making on individual cases, dealing with problems, complaints and appeals. This will have an impact on ways of working, decentralised authority and other dimensions of organisational change.

- Overall service delivery policies involving all delivery channels will need to be agreed and co-ordinated by agencies dealing with the specific customer group. There is little point or value in providing a seamless government online service while leaving other channels uncoordinated. In practice, such an approach would be difficult to sustain.

- Seamless service delivery will reinforce pressures for co-ordinated policies covering the particular customer group. This implies a further layer of collaboration between agencies, building on what may already exist.

224. Seamless online government service initiatives challenge traditional accountability arrangements. Ministers and senior executives are generally responsible for administration of specific legislative or executive instruments. Accountability rules and practices have been developed to clarify responsibility in situations where the service is outsourced, with public administrations and ministers accepting responsibility for the action of non-government providers. The situation may be more complex when the situation involves an agency outside a minister’s area of responsibility that provides a service for which the minister is responsible or where cross-agency teams operate. Arrangements need to be made to assign responsibility in these cases. As already occurs in a range of policy areas, responsibilities will invariably be shared. This is not necessarily a problem, so long as there is clarity about the sharing.

225. Similar comments relate to the issue of parliamentary or audit scrutiny. There is a need to preserve the integrity of established overview arrangements while allowing more complex cross-agency activity in the name of more effective and efficient service. Achieving such a balance is difficult, and will require collaboration between service agency and audit and parliamentary officials and representatives to reach an agreed position on information and other requirements.

226. However, while communication and other change management strategies can be used to align ways of working and culture with the requirements of the overall system, if teamwork and integration are not apparent at senior management levels performance will not be maximised. There is a danger that the overall objective of the seamless service can become no one’s responsibility, and that each agency will aim to maximise its own outputs irrespective of the overall results and that a cultural divide will persist and detract from the overall performance of teams.
The role of managers and e-government co-ordinators

227. The management of seamless government initiatives raises its own challenges for agency managers, who are faced with issues of managerial autonomy and collaboration in the context of practical implementation. The experience of member countries suggests that managers and central e-government co-ordinators can facilitate the development of seamless online services with common customers by:

- Developing a **shared vision** for services for the customer group, ultimately gaining endorsement by political leaders, staff, unions and agency management of the need to collaborate and accepting the value of a customer rather than an agency outlook. This includes the development of plans that could usefully cover projected services, implementation paths, agreed standards and procedures and co-ordinated change management strategies.

- Increasing use of **formal co-operative mechanisms** such as quasi-contracts or other statements of co-operation spelling out joint responsibilities, objectives, agreed contribution of resources and other aspects of the linked but separate roles of each agency involved. This could involve the adoption of a shared responsibility approach, with a formal agreement covering resource issues and performance of the system. It could also be helpful to create other **incentives for collaboration**, such as a central facilitation fund to focus on design, innovation and incentive structures to facilitate progress.

- Facilitating the development of **customer-focused clusters** to help identify opportunities for closer technical, service delivery and policy integration. Sharing of infrastructure and development or use of a lead agency model will be important for collaboration and would be facilitated by co-ordinated acquisition of ICT within each cluster. Cross-agency teams can help implement and manage specific projects or to act as a within-government application service provider to the relevant agencies.

- Taking action to address constraints arising from **internal governance frameworks** in the public administration and adopting team-based approaches involving staff from more than one agency. This will require human resource management frameworks, legal frameworks and privacy and data protection.

228. In practice, collaborative models will involve elements of all of the above approaches, and the approaches will change as co-operation becomes more ingrained.
Korea: Privacy and data sharing between agencies

Through e-government services, many agencies share administrative information and documents are issued in electronic format and circulated on the network. The Korean government takes a strong interest in the level of security protection afforded private information. As an way to ensure security, the network for the shared use of information between administrative agencies is closed and only links government agencies, thus blocking in advance intrusion and hacking.

Strong regulatory measures also exist in the form of various laws (laws on protection of public agency private information) that prohibit access for inappropriate purposes such as disclosure of private information by internal government employees, unauthorised perusal of personal information and use by unauthorised personnel.

The use of administrative information from another agency is subject to approval by the agency providing the information through a separate approval procedure, after which user registration is required. The perusal of information is possible only after logging in with an administrative electronic signature issued by each administrative electronic signature registration agency.

Skills

229. OECD countries recognise that ICT-related skills are important not just for ICT production and service industries, but for the economy as a whole. ICT skills have become a new general skill, like literacy or numeracy, and governments have implemented a range of policies to promote the acquisition of basic and advanced ICT skills across the economy. E-government initiatives increase the importance of the ICT-related skills required by public administration work forces.

230. The skills required for e-government are not simply technical, as general managers need broad skills to engage in e-government decision making. Necessary skills include basic technical understanding (IT literacy) but also an understanding of information management and the information society. Managers must be able to lead (and not be led by) the organisation’s IT department and outside partners, and they must be able to integrate the organisation’s ICT strategy with the broader goals of the organisation.

231. Furthermore, traditional management skills need to be updated and strengthened to deal with the impacts of e-government. Additional competencies are needed in areas such as organisational change, cooperation and collaboration across departments, public-private partnerships, accountability frameworks and performance management.

232. Four specific sets of skills can be identified as essential to successful e-government strategies: information technology (IT) skills, information management (IM) skills, information society (IS) skills, and updated management skills. While the borders of these skill sets are blurred, they provide a useful framework for analysis.

233. Governments should take steps to identify and ensure the skills needed for effective e-government. This section identifies the types of skills needed for effective e-government, with an emphasis on the skills needed by managers. It also discusses approaches to skill development and training and gives examples of the development and evaluation of e-government skills in various OECD countries.
Who needs e-government skills?

234. In the early phases of online services, when the Internet was relatively unfamiliar, many projects were driven by IT specialists. General managers lacked interest and/or the required skills. A major challenge is to overcome the view, still held by many employees and managers, that e-government skills are technical matters best left to specialists.

235. Table 2 gives a broad overview of the types of skills needed by managers and specialists. While general employees and IT specialists need updates and training in new skill areas, managers require the greatest number of new skills.

<table>
<thead>
<tr>
<th>Skills</th>
<th>Needed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology</td>
<td></td>
</tr>
<tr>
<td>basic IT literacy</td>
<td>all employees</td>
</tr>
<tr>
<td>specialist IT skills</td>
<td>IT specialists</td>
</tr>
<tr>
<td>Information Management</td>
<td></td>
</tr>
<tr>
<td>internal information management</td>
<td>managers and IM specialists</td>
</tr>
<tr>
<td>external information management</td>
<td>managers and IM specialists</td>
</tr>
<tr>
<td>privacy protection</td>
<td>managers</td>
</tr>
<tr>
<td>feedback mechanisms</td>
<td>managers</td>
</tr>
<tr>
<td>Information Society</td>
<td></td>
</tr>
<tr>
<td>understand capabilities of ICT</td>
<td>managers</td>
</tr>
<tr>
<td>ability to evaluate trends</td>
<td></td>
</tr>
<tr>
<td>foresee ICT’s impact on organisational culture</td>
<td>managers</td>
</tr>
<tr>
<td>ability to set ICT strategy</td>
<td></td>
</tr>
<tr>
<td>Management / Business</td>
<td></td>
</tr>
<tr>
<td>organisational change</td>
<td>managers</td>
</tr>
<tr>
<td>risk management</td>
<td></td>
</tr>
<tr>
<td>accountability frameworks</td>
<td></td>
</tr>
<tr>
<td>financing arrangements</td>
<td></td>
</tr>
<tr>
<td>co-operation and collaboration</td>
<td></td>
</tr>
<tr>
<td>public-private partnerships</td>
<td></td>
</tr>
</tbody>
</table>

Source: OECD.

Skills for all employees

236. As ICT is increasingly integrated into public administrations, a basic knowledge of technology and the Internet is becoming essential for all employees. Basic IT skills include a working knowledge of applications and how they can improve work quality and efficiency. For employees who do not have these skills, training should be available.

Skills for managers

237. The adoption of e-government solutions has been hampered by business unit managers’ lack of knowledge about how technology can be used as a tool to accomplish or improve government processes. Managers need to be able to work with their organisation’s information technology and information management experts to match government processes with appropriate technical solutions.
238. Like all employees, managers need basic IT skills to use ICT effectively. But managers also need to be able to understand the possibilities of ICT, to set or manage the information strategy for the organisation and to deal with the impact of e-government on the organisation. They need to understand how new technology works, how it can be incorporated into existing government functions, and how e-government applications can build new government services and products or open new channels of communication. A solid understanding of the options and their strengths and weaknesses will give managers confidence to negotiate and to specify characteristics for developing projects that will work.

239. Given the requirements of e-government, understanding the uses of technology has become a necessary management competency similar to budgeting, strategic planning and personnel management. Managers need basic IT skills, information management skills, information society skills and updated management skills (see below).

Types of e-government skills

Information technology skills

240. IT skills are the technical skills necessary to implement e-government. They include basic IT literacy (for all employees), and technical skills to design and implement the technical elements (hardware, communication and software) of an e-government initiative (for IT specialists).

241. While employees and managers increasingly need basic IT skills, most managers and employees do not need specialist skills. Specialist IT skills are for technical staff working in fields such as information technology supplies and services, telecommunications, IT consultancy, multimedia and Internet-based products and services (Box 36).
Information management skills

242. IM skills cover the **deployment of knowledge resources** within an administration and the sharing of knowledge with partners and others outside the organisation. These skills play an important role in co-ordination and collaboration within the organisation, in creating an organisation that is transparent to the public, and in improving services to citizens and businesses.

243. IM managers and specialists collectively share responsibility for meeting government's information management needs. IM professionals in government include librarians, archivists, specialists in access to information and privacy, communications managers and record managers; traditional IM skills now need to be updated for ICT use. Additionally, managers need IM skills to set the organisation’s strategy for information sharing, privacy protection, transparency and customer feedback mechanisms (Box 37).
Box 37

<table>
<thead>
<tr>
<th>IM skills for managers and specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy and planning (for managers)</strong></td>
</tr>
<tr>
<td>- Understand the organisation’s needs in order to design the information system.</td>
</tr>
<tr>
<td>- Design the strategy for information management within the organisation and externally.</td>
</tr>
<tr>
<td>- Design training programmes for employees and end users.</td>
</tr>
<tr>
<td><strong>System development (for IM specialists)</strong></td>
</tr>
<tr>
<td>- Identify relevant sources of information for the organisation.</td>
</tr>
<tr>
<td>- Design the system of retrieving and keeping information electronically for future use.</td>
</tr>
<tr>
<td>- Help to establish the content to be provided for output media and target groups.</td>
</tr>
<tr>
<td>- Design the technical system to update and maintain information in different output media.</td>
</tr>
<tr>
<td>- Achieve the goals of interoperability of data and information.</td>
</tr>
<tr>
<td><strong>System implementation and maintenance (IM specialists)</strong></td>
</tr>
<tr>
<td>- Administer and maintain the archive system composed of traditional and electronic means.</td>
</tr>
<tr>
<td>- Maintain and update information (knowledge content) from external and internal sources.</td>
</tr>
<tr>
<td>- Implement content management system for various output media and target groups.</td>
</tr>
<tr>
<td>- Filter and codify information.</td>
</tr>
<tr>
<td>- Continuously evaluate the system through selected performance indicators.</td>
</tr>
<tr>
<td><strong>Service and user support (for IM specialists)</strong></td>
</tr>
<tr>
<td>- Respond to problems with information reported by users.</td>
</tr>
<tr>
<td>- Develop and maintain training programmes for employees and end users.</td>
</tr>
</tbody>
</table>

Source: Parrado-Díez, 2002.

Information society skills

244. IS skills relate to the ability to use ICT resources to implement an e-government strategy coherent with the organisation’s overall strategy. They involve understanding the possibilities and the limits of new technology as well as the organisation’s overall service strategy, so that the manager can engage in e-government decision making.

245. IS skills are essential for e-government managers, and comprise areas such as relationship management, ICT awareness to support organisational strategy, e-government implementation management and evaluation management (Box 38).
Box 38

Information society skills for managers

*Relationship management*
- Determine the level of citizen involvement in decision making; set the level of responsiveness.
- Establish long-lasting relationships with ICT suppliers and specialists.
- Define the level of ICT integration with suppliers and other stakeholders.
- Consult staff regarding their needs for e-government services.
- Ensure that staff have adequate support and training.
- Identify common sources of co-operation with partners to achieve seamless government.
- Help to establish governance principles of transparency, responsiveness, responsibility and equity among different partners.

*ICT awareness to support organisational strategy*
- Understand technology developments related to the organisation’s e-government strategy.
- Scan technological tools that can support the organisational strategy.
- Understand the organisation’s ICT architecture and the possibilities for innovation and expansion.
- Monitor and understand the activities of suppliers.
- Understand standards for security, privacy and authentication, so that they can be met.
- Understand the principles of risk management.

*Implementation management*
- Establish the relationships and responsibilities between the supply side (technology) and the demand side (e-services).
- Ensure that the end users receive e-services in an appropriate manner by meeting quality standards.
- Combine traditional channels and electronic channels of e-government service delivery.

*Evaluation management*
- Apply project management evaluation to the development of the information system, to the introduction of ICT-related services and to business process re-engineering.
- Identify and apply a library of indicators (with other stakeholders if necessary) in order to evaluate the impact of a strategy of e-services adequately.


Updated management skills

246. E-government clearly has a major impact on the structure and organisation of public administrations. This impact is so significant that managers must update their traditional managerial skills to meet new organisational needs. Managers need the skills to manage organisational change, improve customer responsiveness, develop accountability frameworks, create incentives for co-operation and collaboration, and manage relationships with the private sector.

*E-government skill assessment*

247. The availability of e-government skills in the work force (and especially among managers) will greatly affect an organisation’s ability to adopt an e-government strategy. Finding personnel with the skills needed for an e-government strategy remains a problem. Specific skill needs vary by agency and position, and assessment procedures must be simple enough to be practical.

248. As various examples demonstrate, OECD countries are taking steps to identify and provide the skills and competencies needed for public administrations to efficiently implement e-government initiatives and to reap their benefits.
Box 39

**United Kingdom: E-Envoy - an information skills map**

The Office of the E-Envoy in the United Kingdom has outlined a skills map as part of the UK Online Strategy to prepare UK government agencies for e-government adoption. The E-Envoy has defined seven areas for skill development: leadership, project management, acquisition, information professionalism, IT professionalism, IT-based service design and end-user skills.

The E-Envoy has produced a skills assessment toolkit to determine the e-readiness of each agency. The toolkit has been used for departments’ self-assessment to gain an understanding of the skills required for planning, implementing and delivering e-government services. The assessment identifies the skills available internally through in-house technology and information professionals and identifies skill gaps that may need to be addressed by expanding staff or outsourcing.


Box 40

**United States: The State of Washington’s applications template**

The State of Washington uses the Applications Template and Outfitting Model (ATOM) to bring together policies, infrastructure components and technology and integrate them into a task list. The model also identifies the skill gaps that may need to be filled through training, recruitment or outsourcing. The model defines the following steps:

1. Project definition.
2. Requirements analysis.
3. Detailed design.
4. Project review.
5. Deployment.


Box 41

**Germany: The Net Readiness Analysis - a KPMG approach to BundOnline 2005**

The Net-Readiness Analysis is a self-assessment instrument to help evaluate an organisation’s capacity to implement e-government. It was devised by KPMG and is included in the E-government Manual of the German Federal Office for Information Security. This instrument helps measure the e-capacity of a public organisation, as it provides a set of issues to be resolved before initiating an e-government strategy. The analysis of four dimensions (technology, learning skills, leadership, organisation) is accomplished through a questionnaire. The results of the analysis label the organisation as agnostic, aware, savvy, expert, visionary.


Skills development and training

249. The scale, complexity and rate of change associated with e-government require structured initiatives to ensure that skills remain relevant. The public sector has a range of options for e-government skills development, including hiring of skilled professionals, in-house training and partnering with outside organisations for skills development.
250. Government recruitment of IT and IM specialists should be considered in the context of overall demand, as peaks and troughs in ICT activity affect the availability of skilled staff. Governments generally lag the market in remuneration, and thus find recruitment of specialist skills a problem. More flexible arrangements, such as supplementary payments for specific skills, short-term appointments and the use of contractors and private outsourcing organisations are all used to access specialist skills. However, it is important to maintain a core level of expertise within the organisation.

251. Governments can make better use of the existing work force (through retention and training), provide more information on skill needs and opportunities (including new pathways to IT jobs) and develop adequate training programmes for various categories of workers (including unemployed and older workers).

Current skills development

252. OECD countries are taking a variety of approaches to developing and retraining skills. While specific skill sets vary, most countries recognise that technical IT skills are not enough.

253. The CIO University in the United States is an example of a government-sponsored training programme. Learning objectives are organised into 12 broad topics, each of which contains a number of necessary competencies.

| Box 42 |
| United States: CIO University |
| The 12 topics of the CIO University cover: |
| 1. Policy and organisational. |
| 2. Leadership/managerial. |
| 4. Information resources strategy and planning. |
| 5. Performance assessment. |
| 6. Project/programme management. |
| 7. Capital planning and investment assessment. |
| 8. Acquisition. |
| 10. IT security/information assurance. |
| 12. Desktop technology tools. |


254. Meeting the public’s new and changing expectations requires a more agile work force capable of adapting government processes rapidly in response to changing needs and circumstances. In Canada, the creation of an office for change management demonstrates government’s recognition that the success of service transformation depends critically on ensuring that public servants have the knowledge, skills and competencies to deliver public services in an integrated, client-centred, multi-channel environment. However, sustainable “change readiness” requires leadership and commitment at all levels of the public service.
Canada: Change management skills

The Organisational Readiness Office’s (ORO) approach to building an agile work force has two main themes: a need for new knowledge and skills to support citizen-centred services; and a need to operate more “horizontally” in partnerships that cut across programmes, departments and even jurisdictions. Workplace cultures are changing, and cultural change of the nature and magnitude expected will not come from the traditional human resources (HR) function alone. The acceptance of individual responsibility for career planning and a focus on adaptability and flexibility also constitute a significant cultural change from the traditional “top-down” approach to skills training and staff development.

The ORO business strategy focuses on identifying alignment between community and organisational interests on HR issues, particularly those related to service transformation. The three key elements of the strategy are awareness and engagement, human-resource capacity building and sharing of management and work practices.

Building on the experience of various initiatives, the IT community is exploring the development of a community-based approach to managing human resources. In the proposed framework, assessment against 15 accepted competency profiles would form the basis of recruitment, staffing, performance management and learning and development plans. The HR framework will include tools, development approaches and procedures that could increase the adaptability and agility of the work force and increase readiness for change across government. The more profound implication of the framework is that it recognises that there is a place in modern management for input and insights from communities, especially in government workplaces where structural changes to accommodate organisational needs for horizontal integration and collaboration may not be an option.


Long-term skills development

255. **Maintaining skill levels is an ongoing process, not a one-time fix.** Long-term skills development techniques include providing information to students about possible careers, developing stronger IT skills in secondary schools, assisting in teacher training, making IT careers more attractive (in particular to under-represented groups such as women), ensuring better integration of educational programmes with “real world” problems and helping workers maintain up-to-date skills.

256. As current IT workers retire, the need for skilled workers is increasing in certain OECD countries. In the United States, this is a long-term issue that will require significant change on the part of administrations. Creating systems that unify and simplify citizens’ access to information and government services requires new designs, new perspectives and new skills. In an organisation as large and complex as most administrations, such change is necessarily tied to the organisation’s history. There must be a concurrent emphasis on retaining a talented workforce with knowledge of the organisation’s traditional missions and a strong understanding of how existing systems and strategies can be retooled to support e-government innovations. Japan has had initiatives to develop e-government skills since 1960.
Creating a blended work force and turning innovative designs into reality present significant challenges, the first of which is recruitment. Overall US government employment has been static or in decline over the last decade. Although there has been some growth in the employment of IT professionals, a significant amount of this growth has come from existing employee ranks. Recruitment has, in the case of most agencies, been at a maintenance level with turnover in the 2-3% range. There has been little pressure to improve a slow and outdated recruitment and selection system that makes little use of technology.

This stable work force has become progressively older, with 40% of IT professionals in their 40s and another 29% over age 50. About 50% of the federal IT workforce will be eligible for retirement in the next few years. In an independent study commissioned by the Federal CIO Council, the National Academy for Public Administration stated the challenge as follows:

“It is probably safe to assume that over 50% of the current federal IT professionals, or around 30 000 workers, will retire within the next ten years. Over the same course of time, the federal government is projected to need over 16 000 additional IT workers. This translates to a net need of over 45 000 IT professionals in the next ten years.”

Building the e-government work force in this environment requires change. Change is under way and starts with a human capital plan and a process for developing government IT workers and project managers as well as the skills of the contract work force that performs much of the government’s IT requirements.


Japan’s experience shows that e-government training must be adapted over time to respond to changing requirements.

1960: Implementation of training courses on information systems for national officials. Two courses given for managers and for management analysts.
1968: Decision that “training of key personnel will be implemented uniformly”. Automatic data processing (ADP) management course created in 1969.
1994: Decision to promote government-wide use of information technology, including steps to enhance human infrastructure and promote IT use. This included securing staff in the information system sector and training core personnel who lead IT services.
1996: Curricula radically revised and courses organised into basic training, specialist technical training and procurement and management training.
1998: Steps to improve the information literacy of employees. New course created for network specialists and Internet-related technology added to the curriculum.
1999: To improve information literacy and increase use of ICTs, courses created for personnel education support training, security specialist training and information analysis and utilisation.
2000: To accompany the updating of local area networks (LANs), the number of courses and terminals increased.
2001: Training courses revised, volume of training courses increased and quality improved in all ministries and agencies (including IT literacy education).
2003: Date scheduled for the introduction of online training.

Outsourcing for e-government skills

257. Once skills gaps have been identified, organisations need to decide whether training should be provided in house or outsourced. Some basic skills may need to remain in house, for example project management, data security, IT strategy and procurement skills.

258. Care must be taken in determining which skills to outsource, taking into consideration risk management, privacy, confidentiality and the security of data, and relationships between business skills and ICT-related skills. This is particularly important for skills which are strategic for an organisation. The following checklist can be used to help determine the extent of outsourcing (Parrado-Diez, 2002):

259. Pre-outsourcing question on skills
   - What is the skill level of the organisation for deciding the pre-outsourcing conditions?

260. IT function and the e-government service
   - Is the organisation’s IT function clearly defined or definable?
   - How critical is the IT service level for the organisation’s performance and strategy?
   - What are the strengths and weaknesses for internal provision of IT?
   - What are the mid- and long-term perspectives for the internal and external provision of IT?

261. Cost of e-government services and market competition
   - Does the market provide for cost optimisation?
   - What is the total cost of operating the service?
   - What is the total cost of ownership of the IT assets?
   - What is the level of competition on the market?

262. Skills level to manage the contract
   - What are the organisation’s experience and skill level for managing complex contractual relations?

Skill recommendations

263. While e-government skills needs and arrangements vary considerably among OECD countries, e-government co-ordinators should consider the following points:
   - E-government skills are a crucial element of the required mix of skills for managers. It would be of value to increase awareness of this requirement at the policy level, backed up by incorporation in management training programmes, criteria for recruitment and assessment of performance.
• Assisting agencies to identify their e-government skills needs through promotion and support for a **standardised assessment approach** would facilitate the task of senior management.

• While requirements can be addressed individually, **agencies have shared training needs**. In conjunction with public-sector training organisations, e-government co-ordinating units can identify broader skills needs and work with training providers to develop appropriate training packages for different levels of experience and managerial responsibilities.

**Public-private partnerships**

264. Engagement with private-sector suppliers has been an integral feature of government use of ICT. Public-private relationships have broadened from the acquisition of products and services such as mainframe computers which governments themselves could not provide to services such as the operation of computing facilities and direct provision to end users of government services.

265. Governments’ desire to take advantage of the Internet and related technologies has highlighted the role of these relationships. The demand for more sophisticated transactional services adds a level of complexity, with consideration of relatively new technologies such as public key infrastructure. Government organisations faced with these pressures often turn to private providers not just for technical solutions but for the capacity to develop, implement and deliver whole new services.

266. In addition to providing ICT services *per se*, partnerships are increasingly used as the virtual front counter of government, delivering services to citizens and businesses. This integration of government services with non-government activity can leverage existing infrastructure and existing patterns of citizen and business interaction. While the concept is not new, the integration of online services with related private-sector offerings has highlighted it; integration can add value for both parties. Integration with non-government activity complements seamless government services; from a customer perspective, integration with relevant private-firm or civil-society services may be more relevant than linking government services.

267. E-government increases the need to engage private partners, for the following reasons:

• As ICT use becomes more widespread, there is a danger that public administrations become too deeply drawn into ICT production issues. Partnerships can free public administrations to allow a **focus on core policy and business issues**.

• Partnerships can be used to access **specialised skills**, for example for software development. Such skills may be difficult or uneconomical to maintain in public administrations or which simply can only be obtained from a private service provider.

• Partnerships can help reduce **risk** by a formal assessment of solutions available in the market and taking a partner that accepts some of the risk associated with the project in return for payment (see section on managing risk and cost).

• Partnerships can help reduce or avoid the need to spend scarce **budget** funds to operate the service, by covering costs through a series of recurrent payments.

• In some cases, partnerships can help **integrate** the delivery of government services into private infrastructure or delivery arrangements to benefit customers and to capture efficiencies.
• Partnerships can enable governments to benefit from future innovation and to capture efficiencies that they otherwise might not be able to.

• Additionally partnerships enable the private sector to acquire knowledge of the structure and functioning of the public sector, and thereby improve specific government-oriented solutions.

**Box 46**

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**Denmark: Innovative partnership arrangements**

There is limited experience with digital projects in public-private partnerships in Denmark. Therefore, both the public and private sectors have been interested to discuss together what is important for forming a successful partnership. Public-private partnerships are often used for complex projects in which knowledge from both the public and private sectors needs to be combined. While the goal must be clear from the start, the solution is most likely to be developed in partnership. This is a challenge and requires both the private and the public organisation to be ready to engage in a close partnership.

The dialogue has led to a joint document, which emphasises three themes:

1. The importance of managerial involvement in setting the project goal, clarifying existing work processes, deciding the space for restructuring and ensuring an overall efficient set-up.

2. The need to improve the efficiency of the public sector. It is important to establish a business case in order to get return on the investment. Furthermore, it is essential to agree on common goals and get the incentives right to achieve them, internally as well as for the partner.

3. To have the necessary flexibility to develop the solution, it is important when calling for tender and writing the contract not always to specify a specific solution for the project but to concentrate on essential goals and requirements. The use of options can give the flexibility necessary to change that results from an ongoing dialogue.

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**Types of partnerships**

268. At one extreme, the term "public-private partnership" could be used to cover all arrangements where governments contractually engage with a non-government entity to provide goods or services. More narrowly, partnerships involve arrangements whereby work, risk and rewards are shared. In practice, all private supplier relationships are likely to involve elements of partnership, and it is therefore useful to see partnerships as part of a continuum. The partnership management issues they raise need to be addressed as part of the implementation of any e-government project or strategy.

269. While partnerships differ in complexity and scale, they share many common features:

• They are covered by some form of contractual arrangement, specifying outputs, costs, expectations, dispute resolution mechanisms and the like, with the complexity and detail depending on the specific transaction concerned. Whatever the level of flexibility and close working relationships that may be desired, the partnership ultimately needs to operate in a contractual framework.

• Arrangements operate within established arrangements, including those of procurement, accountability and reporting. The transparency of such arrangements, particularly involving the privatisation of activities previously undertaken in house has been a major public governance issue for a number of years.
• While governments can use private firms or non-government organisations to supply or deliver goods and services, **responsibility** for the service or programme ultimately rests with government.

**Challenges**

270. The more comprehensive and innovative the partnership arrangements, the greater the likely challenge to existing frameworks. The challenges for developing sound partnerships are as follows:

• **Accountability, scrutiny and audit** requirements need to balance providing enough flexibility for innovative arrangements and preserving required levels of oversight of public expenditure. This is a difficult area, although arrangements to achieve this balance are evolving in countries with experience in partnerships both within and outside the ICT area. The use of public-private partnerships should not be at the expense of public scrutiny or compromise accepted privacy or service quality standards. The business case for partnerships should not depend on a lowering of standards.

• The **specification of outputs**, including value for money, can be difficult in arrangements designed to operate over a long period and which allow for future resetting of priorities. If specifications are too tight, it may be necessary to renegotiate – if they are too broad, requirements may be unclear. Arrangements to deal with failure also need to be clear.

• Traditional procurement arrangements aim to transfer risk while retaining control. It needs to be accepted that, in a partnership, both parties should **share the risks** and the benefits. The issue here is management of risk, with the respective risks assigned to the parties best placed to manage them.

• Retaining the public administration’s **capacity** to manage the relationship with the private partner is of crucial concern. Managerial awareness and commitment is essential to ensure that the required skills are developed and maintained (see section on skills).

• While structured review and clauses can facilitate review and formal approaches to the market, there the danger that an existing partnership may be seen as the only approach, thereby effectively **excluding other service providers**.

271. Ultimately, the overall relationship between the partners is important. The two sides must accept the sharing of risk and rewards; balance the stability that encourages investment in relationships against the willingness to reassess the value of the partnership; specify outputs in a way that allows for flexibility; accept joint responsibility for project outputs, while acknowledging the differences in accountability and responsibility between government and those it engages.

**The role of e-government co-ordinators**

272. It may be difficult to determine which types of services should be done using public-private partnerships, which should use more conventional supplier relationships and which are best retained within public administrations. For this reason it is important to make available to agencies a **structured approach for assessment**, which allows them to make an appropriate decision. Use of private suppliers can have its costs, in terms of opportunities foregone and transaction costs for establishing and maintaining them.
273. E-government co-ordinating agencies may wish to develop, in conjunction with procurement authorities and key agencies, an **e-government public-private partnerships framework**. This would assist in particular the small agencies that often lack sufficient expertise to assess proposals made by potential suppliers of services. Such a framework would also help clarify what is allowed under existing procurement frameworks, and help identify areas where change would be beneficial. It is also important for broader policy frameworks (regarding for example the use of local ICT suppliers) to be flexible enough to enable decisions to be made on the merits of each case.

274. An examination in each country by e-government co-ordinators and other relevant agencies, including national audit bodies, of audit and accountability arrangements covering private supplier relationships would help clarify requirements and give further guidance to agencies.

**Managing risk and cost**

275. Most governments experience problems when implementing large IT projects. Budgets are exceeded, deadlines are overrun and often the quality of the new system is far below the standard agreed when the project was undertaken.

276. Moreover, governments are not alone in failing. Evidence suggests that private sector companies have similar problems. The Standish Group, for example, estimates that only 28% of all IT projects in 2000 in the US, in both government and industry, were successful with regard to budget, functionality and timeliness. 23% were cancelled and the remainder succeeded only partially, failing on at least one of the three counts.

277. Large public IT projects can pose great political risks. Ministers and governments are held accountable for the failures and the accompanying waste of taxpayer money. These significant economic losses comprise not only outright waste in exceeded budgets and abandoned projects, but also – and equally importantly – lost opportunities for enhanced effectiveness and efficiency.

278. The inability of governments to manage large public IT projects threatens to undermine efforts to implement e-government. Most OECD Member countries have formulated ambitious action plans for implementing e-government. The aim is to move service delivery to the World Wide Web, to enhance information to citizens and to make public sector workplaces smarter for the benefit of citizens, politicians and civil servants alike.

279. Unless governments learn to manage the risks connected with large public IT projects, these e-dreams will turn into global nightmares. Governments must get the fundamentals of IT right if they want to harvest the huge potential of going online.

**Public management systems**

280. Public sector organisations operate in settings very different from the private sector, and these differences are important for understanding why governments fail and what challenges project managers face.

281. Change is inherent in implementing public policies. Laws are changed, priorities shift, and implementation accordingly has to adjust. However, changing specifications for IT systems that are under construction is likely to make the systems more complicated, blur agreements with providers and bloat budgets. Small policy changes can require major changes in IT structures.
282. Similarly, the time allowed for legislation to come into effect is often much too short for proper IT systems to be built and launched. Unrealistic deadlines set by the highest political authorities need to be addressed.

283. If failure is to be avoided, implementation must be taken into account when policies are formulated. Furthermore, special standards of accountability and transparency apply to the public sector. This means that failure is often widely publicised and that top-level civil servants and politicians are held accountable for very technical projects over which they may have little influence.

284. In many countries, rapid policy change, higher standards of accountability and short deadlines are unavoidable governance facts. Nevertheless, it might be possible to raise awareness of the interdependency of policy and implementation issues when it comes to e-government. At the very least, risks inherent in the governance settings should be identified and better managed.

Budgeting for risk

285. Public sector budgeting systems can encourage the funding of large and highly visible IT projects. Small projects cannot justify “new” funds and do not command attention during budget negotiations. Furthermore, large, expensive and spectacular projects are often favoured because these projects are more easily communicated as evidence of political action and response to a problem. This is unfortunate, since the risk of failure is proportional to the size of the project. Very large projects, *i.e.* expensive, long-term and complex initiatives, often fail.

286. A radical approach, increasingly adopted in the private sector, is to avoid large projects altogether, opting for small projects instead. One expert has called this change a shift from “whales to dolphins”. Adopting dolphins does not mean breaking big projects into small modules. Rather, it involves a shift to a different way of working and thinking, with total project timeframes of no more than six months, technical simplicity, modest ambitions for business change, and teamwork driven by business goals.

287. Although large IT projects should be avoided wherever possible, government is often very big business. Millions of citizens are served, regulated or taxed, and thousands of employees use the systems. Therefore, it is improbable that all IT projects in the public sector can be made smaller. Where big projects are unavoidable, they should be divided up into self-contained modules that can be adjusted to changes in circumstances, technology and requirements.

**Box 47**

**New Zealand: Funding for Risk**

In New Zealand, risk-based funding rules for complex projects have been developed. Using quantitative risk analysis, each risk is assessed along with its impact and probability. Thus, the fiscal impact of a project’s risks can be made explicit to decision-makers.

New technologies

288. New technologies are tempting because they often promise better solutions and fascinating possibilities for business change. More often, they promise solutions that enable an organisation to implement IT without changing its business processes. It is therefore not surprising that public sector organisations keep trying to develop systems based on new technologies.
289. Experience shows, however, that systems built on emerging and unknown technologies are very susceptible to failure. In some instances the potential benefits might warrant taking such huge risks; most often this is not the case.

290. Risk of failure can be reduced by using well-proven approaches or - even better - standard software, although this will often imply that business processes have to be adapted to the possibilities offered by the IT system. The application of common commercial practice, rather than custom software, has proven time and again to be the most successful solution.

291. Where the use of unproven technologies is unavoidable, a testing programme for the new technology in question carried out prior to the contract with the supplier could help identify, assess and manage the risks.

Responsibility

292. There is no such thing as an IT project in isolation. Rather, every IT system should be seen as a tool and means to other ends – notably a change in business processes. IT projects are thus business projects and must be led by top management and not by IT experts.

293. Clear lines of responsibility and account-ability are needed for good project management. It must be clear at the outset who will be held accountable for delivery, how performance will be measured and sanctioned and when assessment will take place.

294. Thus, in the public sector the role of IT must be reflected in the way organisations are managed. An isolated IT office is sufficient for internal technical applications but not for critical business applications that change the face of the agency and that affect critical legal and business issues.

Box 48

United States: Risk and Responsibility

One of the most important reasons for resolving the Y2K problem in the United States was the attention from top-level management. Because the Federal Government designated it as the foremost management objective in 1999, management policies, practices and processes were all refocused and managers were held accountable for coping with Y2K. Dealing with the risk of failure became the mission, even though it was a technological problem.

Involving users

295. The potential impact of IT initiatives on people and their jobs must be recognised. A comprehensive strategy for managing change should be part of project planning. This will include targeted communications, effective and appropriately timed education and training, and user support plans to prepare users and other stakeholders for change.

296. End-users should thus be involved as early as possible in project management and communication. Close consultation with client groups and representatives helps build ownership and commitment. Extensive user participation in systems development and testing is essential for a viable end product.
**Risk identification**

297. Risk identification and management are paramount features of successful IT project management. Some countries have well-developed guidelines and practices in this field; others still have something to learn.

298. Independent consultants from outside the administration can help identify risks. The use of such independent reviews at key stages of a project can provide a valuable snapshot of the “health” of the initiative. However, expert advice only makes sense if project management deals promptly and thoroughly with the issues raised.

299. It is interesting to note, however, that many failures can be explained by poor compliance with otherwise very good guidelines and existing good practice. Knowledge management and management control systems adapted to the national culture must be in place.

300. The general lesson is not that governments should not take any risks; rather, governments must identify risk, determine which risks they are willing to take, and manage the relevant risk within appropriate governance structures. Governments must balance risk management with innovation and value creation.

**Monitoring and evaluation**

301. It is necessary to monitor and evaluate e-government to understand demand, assess the benefits to users of alternative proposals and evaluate the effectiveness of proposals in meeting their objectives. Evaluation is needed to argue the case for new projects and expenditure, to justify continuing with initiatives, to allocate additional IT funds, to assess progress towards programme goals and to understand impacts. Additionally, monitoring and evaluation can assist with programme consolidation and selection of standards. OECD countries recognise the importance of this issue, and e-government policies and strategies reflect this recognition.

302. A number of promising initiatives exist in this area, although OECD countries acknowledge the need for improvement. Current efforts may be suitable for evaluating e-services but do not take into account the back-office changes that accompany e-government.

303. This section discusses issues surrounding monitoring and evaluation to give an overview of current practices and to discuss specific tools that have been identified over the course of the project as of particular importance (assessment of costs, benefits, demand and service quality).

**Background and context**

304. Current tools for programme evaluation provide a useful starting point but are not well adapted to e-government initiatives because they were designed for the private sector or do not take into account the difficulty of measuring the benefits of ICTs (Van Gils, 2002):

- The **Balanced Scorecard** was introduced in the early 1990s to provide a tool for businesses to evaluate their strategic performance and results. While it provides a useful base, it does not take into account the difficulty of measuring ICTs or the social dimensions relevant to governments.
• The **EFQM Excellence Model** was introduced in 1992 for self-assessment of quality in organisations. Building on this model, the **Common Assessment Framework (CAF)** was designed for self-assessment in the public sector. While both frameworks are useful for government assessment, neither takes into account the difficulty of measuring the benefits of ICTs.

• E-business evaluation tools like the **DMR Results Chain**, the **E-business Balanced Scorecard** and Cranfield’s **Process Model** have been successful in evaluating e-business, but to be suitable for e-government, they would need to incorporate social dimensions and the expected benefits of governance goals.

**Obstacles to evaluation**

305. Monitoring and evaluation of government programmes is generally difficult, given the frequent lack of clarity of objectives owing to the different and often competing views held by different stakeholders. In addition, overlapping initiatives and policies and continuous fine-tuning of initiatives complicate monitoring and evaluation efforts. The fact that e-government is relatively new and that there are few advanced services means fewer models and actual outcome experiences that can be used for benchmarking.

306. These problems are magnified when attempting to monitor and evaluate e-government programmes. ICT projects are hard to evaluate because of the pervasive nature of ICTs, the integration of ICT goals with policy goals and the organisational changes that necessarily accompany e-government initiatives. Effective evaluation requires good metrics, regular monitoring and reporting, disciplined and professional use of robust evaluation frameworks and the use of long-term evaluation practices. These qualities depend on a government’s overall evaluation culture. Table 3 summarises some of the barriers to e-government evaluation and gives various examples.
Table 3. Obstacles to evaluating e-government

<table>
<thead>
<tr>
<th>Obstacle</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of clarity of objectives -- stated goals may not have associated measures of progress; there may be multiple objectives</td>
<td>Hard to measure &quot;quality of life&quot;</td>
</tr>
<tr>
<td>Hard to define success</td>
<td>If people are spending more time online, is that good or bad?</td>
</tr>
<tr>
<td>Easy to be too ambitious</td>
<td>Several countries have set targets of &quot;all services online&quot; by specific dates. But not all services are appropriate to put online.</td>
</tr>
<tr>
<td>Information paradox</td>
<td>The benefits of ICT investment may not be visible for some time (see OECD Growth Study)</td>
</tr>
<tr>
<td>Question of who are the clients; multiple clients</td>
<td>Should one evaluate benefits for the users, the employees, the government at large, partners, etc.?</td>
</tr>
<tr>
<td>Hard to measure shared benefits</td>
<td>Shared infrastructure, multiple projects benefiting from shared portal, etc.</td>
</tr>
<tr>
<td>Private sector tools may not work for governments</td>
<td>Governments place importance on social values that are not incorporated into private sector tools and objectives</td>
</tr>
<tr>
<td>Available indicators may not be the good ones</td>
<td>Current indicators (such as number of employees with Internet connections) are helpful, but have limits</td>
</tr>
<tr>
<td>Hard to apply common methodology and definitions across governments</td>
<td>Collecting data is easier at the local level, but at that level administrations are highly decentralised</td>
</tr>
<tr>
<td>Incentives to misstate evaluation results</td>
<td>If an organisation succeeds in saving money, telling others may result in their losing that money</td>
</tr>
<tr>
<td>Challenge of sharing results</td>
<td>Hard to get organisations to report unsatisfactory results</td>
</tr>
<tr>
<td>What you measure may become focus of organisation</td>
<td>If you measure number of services online, but not service quality, priority will be on putting services online but not on service quality</td>
</tr>
</tbody>
</table>

Source: OECD.

307. To overcome these barriers and monitor and evaluate e-government successfully, a number of issues must be addressed:

- A framework for assessment must be prepared prior to initiation, as well as a framework for evaluating efficiencies once the project is completed. The process to be improved or replaced by the proposed arrangements must be clearly defined. The project’s full costs, including the costs of managing the associated organisational changes, also need to be identified. Furthermore, “success” needs to be clearly defined and if possible linked to the broader goals of the organisation and the national strategy. Both implementers and evaluators must agree on the definition of success.

- The knowledge that the evaluation may be used to determine the survival of the project or future funding creates a danger that the organisation’s sole focus will be to meet specific targets. This is particularly a problem when the indicators for e-government evaluation may not be representative of the programme’s goals. To the extent possible, e-government indicators should be designed to reflect programme goals.

- For an evaluation to be useful, results need to be available to decision makers at the right time. When information on longer-term outcomes is not available in the requisite time frame, alternative indicators should be used. Evaluation procedures should be realistic and focused.
on specific issues of value. All e-government evaluation will inevitably be a compromise between rigorous evaluation on the one hand and practical realities on the other.

- **The evaluation process should be unbiased and independent**, so that it can be used as a basis for revising e-government initiatives. It should also be non-threatening to participants. It should be general enough to apply to more than one agency, initiative or programme.

- E-government evaluations should be **based on a mixture of qualitative and quantitative indicators**. Qualitative indicators are useful because they may be better suited to some e-government benefits (such as improved quality of life) than quantitative indicators. However, qualitative indicators may be difficult to use when comparing projects and levels of success. Quantitative indicators are useful because they are more readily comparable and can be used to demonstrate concrete benefits. However, quantitative indicators are not always suited to e-government goals, and there is the danger of overvaluing their importance. As evaluation efforts become more advanced, there may be a greater reliance on qualitative measures.

- The evaluation process should take into account both **direct and indirect costs and benefits**. While indicators should be based on stated targets, they should also be flexible enough to take into account unexpected outcomes or be adapted for a later point in time.

- Finally, **e-government should be repeatedly evaluated** over time. The process should include pre-analysis, implementation analysis and post analysis.

**Benchmarking**

Evaluating national policy

308. Evaluating e-government programmes at the national level involves assembling data from a wide range of inputs, using consistent definitions and methodologies. Benchmarking sectors or national efforts with other sectors and programmes requires common approaches and definitions.

309. It is much more difficult to measure e-government at national scale than to evaluate specific projects. This requires a large degree of compatibility between data from different agencies, but their data are rarely comparable.

310. Current efforts to evaluate national policy have largely focused on the evaluation of e-services. Individual governments and some private-sector firms have used a four-tier approach to evaluating e-government services. It covers: e-service breadth (e.g. the number of services provided); e-service span (e.g. the customer target group to which e-services are delivered); e-service depth (e.g. the complexity of the e-services provided); and e-service quality (e.g. the extent to which e-services achieve their stated objectives).

311. However, these measures are only for e-services, and are not well suited to evaluating e-government at the back-office level (except for advanced services, which generally require back-office changes). Specific measures that can be used for a broader e-government evaluation include:

- Pre-requisites for online services (e.g. Internet penetration, necessary skills, etc.).
• Level of shared infrastructure (e.g. are different agencies sharing the same infrastructure resources, or is each obliged to build its own?).

• Channel delivery strategy and/or existence of a “one-stop shop” (e.g. one point of access for all government services, whether national, regional or local and whether all agencies are working through it).

• Level of regulatory framework and enforcement at national level (e.g. privacy and security standards, authentication).

• Prevalence of national standards.

• Extent of co-operation and co-ordination among organisations.

• Level of public-private partnerships.

• Existence of financing mechanisms supporting e-government.

Box 49

**Italy: E-government observatory**

The Italian Office for Innovation in the Public Administration (UIPA) has established an observatory to examine the impact of ICT on public administration, taking into account all impulse, control, and updating policies for the work the Italian public administration will have to undertake to improve its internal and external efficiency.

The guiding objective in the early stages of the project was to work with a restricted number of central and local public administrations to see how well the model worked, so that the civil servants involved would be able to evaluate performance improvements brought about by the introduction of new technology. Improvements would be in the provision of a public service (mainly to citizens and businesses, but also to other branches of local and central government) and in greater efficiency within the public administrations. In the longer term, if the model proves able to show the main reasons for change brought about by the introduction of ICTs in the public administration, the observatory could help policy makers in the decision-making process, as the effect of efficiency policies could be shown to each and every branch of local and central government.

*Source: Corsi and Gullo (2002).*
Box 50

Canada: Post-implementation reviews for e-government projects

Canada’s post-implementation guidelines provide evaluation requirements to be included by agencies in post implementation reviews (PIR). Once a project has reached its end, a PIR must be conducted, generally 3-12 months later. The focus of the PIR is to compare a project’s results with earlier estimates in terms of cost, schedule, performance and mission improvement outcomes. Three essential areas have to be evaluated as part of a complete PIR.

Citizens/end users: Surveys should be conducted to determine users’ satisfaction with the end product. Many of the intangible benefits identified at the outset will relate to how citizens and end users feel about the final projects.

Mission/programme impact: A close look should be taken to determine whether the system implemented has achieved its intended effect and whether this effect still fits mission goals. There should be a focused look at how well the project supports the organisation’s various processes. An assessment should also be made of other project-specific aspects, such as an estimate of the cost savings achieved, compliance with the information technology architecture, along with evaluations of the information product (accuracy, timeliness, adequacy and appropriateness of information) and identification of additional maintenance or security issues.

Technical capability: Finally, an evaluation should be made of the technical aspects of the project, both current and future. This evaluation may focus on such factors as the competency of the work force to use the new system, employee satisfaction or retention, the extent to which advanced technology was used, and the methodological expertise of the development team.


International benchmarking

312. Measuring progress against another or other countries (international benchmarking) is a common way of determining the success of national policy. International benchmarking can be a very powerful tool for capturing the attention of ministers and generating political commitment to achieving certain national goals. However, international benchmarking studies are inexact and judgmental and can conceal as much as they reveal. Finding common measures across countries is a very difficult task, especially as countries take different approaches to the provision of e-services. Finding effective and comparable measures is also more difficult when dealing with complex variables such as “quality” versus the more simple quantity of services online.

313. A number of private consulting firms (e.g. Accenture, Gartner, Cap Gemini/Ernst & Young) have developed specific tools for monitoring and evaluating e-government initiatives. However, current benchmarking studies are limited for the following reasons:

- They tend to focus on the supply side and do not take account of the demand for and use of e-government.
- They tend to be output- rather than outcome-oriented.
- They focus on government-to-citizen and government-to-business interactions, but do not measure government-to-government or government-to-employee interactions.
- The process is not transparent to governments and does not include a clear methodological statement.
• The process is not internationally agreed (each survey employs its own definitions and measuring tools, and other countries are not consulted).

• A country’s overall performance is measured on the basis of only a small number of elements.

• No account is taken of countries’ priorities, approaches or e-government objectives.

Box 51

**Netherlands: The need for evaluation tools**

A recent Dutch study proposes developing a common system of concepts for measurement of e-government and international benchmarking. At present, there is scarcely any quantitative material available, at either international or national level. The few internationally comparable publications often include no more than a few readiness indicators. While there are valuable national studies, they do not lend themselves to international comparison or benchmarking.

To measure e-government, OECD countries need to develop a measurement tool which covers all relevant aspects and indicators of e-government. Each country would measure and analyse its situation with regard to e-government using the same set of research tools, preferably during the same time period. Some adaptation would be possible, e.g. large countries might use a larger sample than smaller ones. In their report to the OECD, countries would be able to contextualise results in the light of specific national characteristics, such as the structure and extent of the government.

As a result, the benchmarking of e-government would be based on primary data and internationally comparable. However, it is also important to take countries’ specific context into account when evaluating its implementation of e-government. A benchmarking exercise offers space for considering qualitative aspects along with the fundamental data and thus nuancing each country’s position.

*Source*: Holland (2002)

**Standard OECD statistics**

314. Using standard statistics to make international comparisons of e-government is not easy. Not only is it difficult to delineate the concept of e-government (it may range from publishing basic government information on the Internet to letting citizens engage in dialogue with elected officials), but governments have different structures for service delivery and e-government co-ordination.

315. The statistics produced by OECD countries often refer to evaluation of national policies on the information society, but even here the statistics may vary from country to country. The OECD’s *Measuring the Information Economy* (2002) provides some internationally comparable statistics on e-government.

316. Very few countries implement dedicated surveys of e-government, *i.e.* surveys in which government agencies are asked how they use ICTs as tool for improved service and communication. Countries that do use such surveys include Australia, Canada, Norway and Denmark.

317. The OECD Working Party on Indicators for the Information Society (WPIIS) is currently developing guidelines and model surveys covering aspects of e-government. The model questionnaire on measuring ICT use and e-commerce currently includes one e-government question for enterprises, which asks about business use of the Internet to communicate with public authorities. For households and individuals, the model questionnaire includes questions about obtaining information from government Web sites, downloading or submitting forms and other dealings with government.
318. WPIIS is aiming eventually to create separate modules on e-government in the enterprise and household/individual model questionnaires by further developing the current questions, and adding one new one. By taking on this task, WPIIS hopes to act as a forum for developing common indicators on e-government demand and use. However, no plans exist for developing guidelines and model questionnaires for ICT use in government; the very different structures of government would make it difficult or impossible to compile comparable statistics.

Evaluation of e-government activity

319. A focused examination of elements of e-government activity would very valuable to most OECD countries. It could, for example, assist agency decision makers facing specific choices when implementing projects or help central e-government co-ordinators identify priorities for limited central funds.

320. Monitoring and evaluation of e-government is a broad area. The following discussion focuses on aspects judged priorities by the project working group, namely: costs and benefits, demand and service quality.
In early 2002, as part of the next phase of e-government, the Australian National Office for the Information Economy (NOIE) commissioned a study into the demand for and benefits of e-government. The aim of the study was twofold: (i) The development and application of a methodology to assess the success of the Commonwealth’s government online program through an analysis of past and future demand, benefits and return of investment; and (ii) The development of a methodology for measuring the success of future online initiatives allowing comparison. Preliminary findings of the study were released in November 2002.

The Findings – Demand
From 1997/98 to 2001/2002, the Prime Minister’s commitment and agency client service strategies appear to have provided the major stimulus for agencies to offer services online to citizens and businesses.

The study found that there is ongoing demand for online services and that users believe significant benefits are available. It found that future demand for online government services might increase by approximately 30% in the period 2002 to 2004.

Citizens and businesses indicated that in the next twelve months they would use the Internet to access Commonwealth Government information related to education, health, taxation, employment, weather, community support, and to a lesser extent family assistance information.

Benefits to Users
The vast majority of users of government online services see significant benefits from being able to access services online. 86% of government online users felt that the overall benefit of government online was either significant (36%) or moderate (50%). However, only 45% were able to quantify actual cost savings associated with interacting with Government online compared to traditional channels.

As a result of interacting with government online:
- over 80% of all users indicated a moderate to significant improvement in the ease of finding information;
- approximately 75% indicated some or significant improvement in service quality;
- 75% saw either some (24%) or significant improvement (51%) in their ability to make decisions;
- over 80% of businesses and nearly 90% of government employees saw either some or significant improvements in the quality of their decision-making; and
- access to public records was considered more open by 68% of all users.

Benefits to Government
The study estimated potential financial benefits over the period 2000 to 2004 to government agencies through a reduction in costs:
- 67% expected to reduce costs significantly due to improved business processes;
- 64% expected to reduce costs significantly by directly reducing costs of servicing – i.e. direct cost reductions, such as advertising, printed material, staff costs and client management costs; and
- 17% expected to reduce costs significantly by using multi agency delivery channels.

Future Beneficial Features
The study found that citizen and business considered that there would be further benefits from features, such as:
- seamless online government presence that provides more information, structured so that it is easy to find and does not require an understanding of how the government works; and
- further integration and clustering of services across agencies at all levels of government.

The final reports from the study were expected to be available in March 2003 on the NOIE website.

Source: www.noie.gov
Cost/benefit analysis

321. Discussions of the utility of cost-benefit analyses for e-government initiatives are ongoing. Some argue that countries should not rely on cost-benefit analysis as the single basis for public budgeting and that other non-financial gains must be considered. Cost-benefit analysis is typically readily calculable for “bricks and mortar” projects like dams and roads, but is less obviously of value for government initiatives where the expected benefit may be public convenience or even improved public perceptions of public services (Reeder, 2002).

322. For example, there is considerable debate regarding the economic value of “small time savings”. If the public, on average, spends 30 minutes less time waiting in line for a driver’s licence to be issued, are those small increments truly recoverable and put to other economically productive uses? Put differently, if 100 000 individuals each save 30 minutes once a year, has the economy realised the equivalent of 25 work years in savings?

323. Cost and benefits need separate measures before they can be combined into cost/benefit analysis. A few areas for consideration include:

- Available tools to measure the costs of an e-government project and justify launching an initiative.
- Comparing costs of an e-service and the traditional equivalent.
- Investment and uptake costs.
- Operational costs, including maintenance and training.
- Long-term costs, including the cost of updating systems and depreciation.
- Expected cost savings in the longer term.
- Opportunity costs of launching an e-government initiative.

324. The benefits flowing from ICT investments can be difficult to identify, given the integration of ICTs into broader policy goals and organisational change. More specifically, assessing the benefits of e-government initiatives to governments and to service users is difficult because:

- Benefits may be unclear, overlapping and reliant on the performance of other initiatives.
- Goals may be expressed in terms of putting services online, or putting infrastructure in place. While these goals can be evaluated in their own terms, they do not take into account uptake or the actual benefits desired or achieved by end users.
- It may not be clear who actually benefits from e-government initiatives (government, users, employees, etc.), especially as some of the beneficiaries may be unintended. It is also unclear whose benefits should be counted when adding up benefits.
- Benefits from shared arrangements such as common infrastructure can be difficult to assess.
Benefits include both direct outputs (such as the reduction in the time needed for compliance by small businesses using online services) and broader outcomes (such as the impact of the reduced time on business viability).

Benefits will inevitably involve elements that are both quantifiable (e.g., cost and time savings) and non-quantifiable (e.g., improved service quality), raising the issue of valuation of non-financial benefits.

Benefits will not be static, but will change over the life of the initiative as user expectations evolve.

In practice, the evaluation of benefits has focused on efficiencies in government that can be reasonably estimated and estimates of improved convenience for users. These estimates are often made at the project initiation stage, to justify commencing a project. Assessment of realised benefits resulting from initiatives also needs to be emphasised to identify lessons learned from project implementation and operation.

Box 53

Canada: The GOL intermediate benefits review, Victoria, 2001

The Canadian central government asked the government of the province of Victoria, a leader in e-government, to help Government On-line (GOL) by undertaking an intermediate benefits review (IBR). The goal was to provide an accurate summary of delivered and planned GOL benefits and funding in Victoria. An independent consultant conducted the IBR in three phases over a 20-week period commencing 13 November 2000. Some 460 online government projects encompassing 155 programmes, 56 agencies and a sample of 274 citizens, as well as in-depth analysis of 26 individual case studies, were surveyed. At the time of the IBR, 46% of programmes were described as complete and 54% were still in progress.

Phase 1 involved surveying project data from agencies of the Victorian Public Service over a four-week period. As it was assumed that benefit tracking was not a core competency of all Victorian government agencies, the consultant hosted pre-survey briefing sessions to prepare the respondents for calculating expected benefits and cost savings. Agencies were asked to specify expected and delivered benefits of social worth ranging from nil to significant and agency worth in financial terms across a range of bands. Finally, the agencies were asked to estimate the extent to which benefits had been realised and what risks might prevent the benefits from being realised. Agencies were asked to supply where possible or at least identify suitable metrics and baseline data for future time series analysis. When the survey ended, DMR performed a quality-control analysis of the data before freezing the database.

Phase 2 involved surveying a sample of users of GOL services (Victorian citizens, businesses and departments) to confirm the benefits identified in phase 1 from a social perspective and identify unexpected benefits and gaps where benefits were not achieved.

Phase 3 concerned future funding recommendations.

The benefits framework was built on the basis of GOL objectives, benefits estimations developed by the consultant and validation of data by opinion surveys of the population.


Assessing demand

A major focus of e-government activity has been increasing the supply of online services with relevant targets. Given their relative novelty, many services were developed without reference to potential
demand. However, as services become more complex and include transactional services, **assessment of demand becomes critical** to ensure that the benefits of initiatives both to governments and to end users match the costs involved.

327. As for other forms of service delivery, measuring demand for potential online services is complex. Issues to be addressed include identifying the potential pool of users, assessment of accessibility, including general online access by the target group, ease of use and the requirements of groups with special needs, such as the disabled.

328. Experience has shown the difficulty of predicting usage patterns before the online services are implemented. Potential users cannot be expected to have identified specific requirements for online services, as these emerge only in the light of actual experience. As services become more complex, the need for pilot testing and prototyping becomes more important. As services are implemented, **structured feedback arrangements** enable adjustments to be made in the light of experience.

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**Box 54**

**Finland: E-government-related surveys**

Since 1999, the Ministry of the Interior has made annual surveys of citizens’ views on the delivery of electronic services by the public administration. The results have suggested that while citizens are familiar with services provided by their own municipality or local state authority, they have little awareness of other public-sector electronic services. These limited surveys indicate that Finns support the development of public e-service, but they do not reveal much about the level of citizen demand for e-government.

As a part of building the national citizen portal, the Ministry of Finance carried out a user survey of 100 citizens and civil servants in 2000. The results showed that citizens recognised the need for a portal that could provide: 

i) information about public-sector organisations and their services; 

ii) advanced electronic services for which transactions are possible; and 

iii) feedback mechanisms on specific questions.

For regional portals, the most commonly used services were public services. Even though the attitude towards these services was positive and they were frequently used, these services were also seen as the ones that needed the most development.

The Chamber of Commerce and the Association of small and medium-sized enterprises have also conducted several surveys on companies’ interest in electronic services.

*Source: E-Government in Finland (2003).*
Box 55

**United Kingdom: The People’s Panel**

In 1998, the Cabinet Office’s Modernising Public Services Group set up the “People’s Panel” to be better able to provide the services that people want. Citizens’ panels had already been used in local government for many years, but this initiative was a world first at the national level. The panel is composed of 5 000 members and is representative of the UK population in terms of age, gender, region and a wide range of other demographic indicators. An additional 830 members were recruited from ethnic minorities to ensure that the sample of minority groups is large enough to be used for quantitative research.

The government is using the People’s Panel for many service delivery issues on a regular basis and has recommended that departments use it when starting and implementing e-government projects and programmes.

For instance, in April and May 2000, the Cabinet Office’s Performance and Innovation Unit (PIU) created six focus groups from the People’s Panel to get a better understanding of people’s attitudes towards electronic delivery of public services. The findings have been used by PIU in compiling their report on e-government, “Electronic Government Services for the 21 Century”.

*Source:* People Panel’s homepage: [www.cabinet-office.gov.uk/servicefirst/index/pphome.htm](http://www.cabinet-office.gov.uk/servicefirst/index/pphome.htm)

Box 56

**Australia: Victoria Tourism Online**

Victoria Tourism Online has performed customer surveys to establish performance baselines, conducted focus groups with representative users and participated in industry forums to understand the likely need for tourism services online. This knowledge of customer demand is cited as a critical element of the project’s success.


Service quality

329. Measuring service quality is of particular importance for e-government, as most governments regard improvement of the quality of public services as an important objective of e-government programmes. Quality standards, which will vary for individual projects, need to be developed in the context of broader service charters and standards. The quality of e-government services is often assessed as citizen satisfaction, measured through interviews or online questionnaires. Frequent surveys of citizen satisfaction are of particular importance in e-government, as customer’s expectations and habits are evolving rapidly in a changing service environment. Results from these surveys may be used to identify improvements that meet user needs by making services more accessible and effective. Results may also be used to update service quality standards.
The National Audit Office (NAO) has used a number of means to better understand customers’ needs. Throughout 2001, customer-segmented focus groups examined its product portfolios, the type of data provided and how best to deliver it – on paper or electronically via the Web site, for example. Customers were segmented by type and by how frequently they used the data. On the basis of this research, the NAO decided how to deliver data and services for each group.

The NAO launched a new Web site in 2001 after conducting the focus groups and laboratory usability testing to understand how its users navigated to find the information they needed.

These findings were systematically used as part of a development programme. Users are being involved at key stages of development and will influence the look, feel and functionality of the site.


This guide is a managerial tool for implementing the Service Improvement Initiative. It is directed to programme managers responsible for service delivery in federal departments and agencies. It offers a detailed, holistic method for planning and implementing service improvement, based on the client’s perspective and the establishment of service standards. It includes step-by-step descriptions of suggested activities with associated evaluation tools, questionnaires and guidelines in the appendices.

Source: Service Improvement Initiative: www.cio-dpi.gc.ca/si-as/index_e.asp

330. Improving monitoring and evaluation is a major task for e-government co-ordinators. Improvements in this area will require a balance between the practical needs of agencies – producing information that will actually be used – and the difficulty of maintaining a quality evaluation and analysis process. While countries’ priorities will differ, the need to better articulate the benefits of e-government activity means that the focus should be on the benefits of initiatives. Without clearly stated benefits, e-government implementers cannot expect political and public support. E-government co-ordinators should consider the following action:

- Establishing a network of practice across key agencies, focused on e-government evaluation issues.

- With the use of this network, developing a framework for assessment of demand, benefits and user satisfaction for use by agencies to assess individual agency projects.

- Gaining agreement of central budget authorities to use this framework as a standard, acceptable method for assessing these impacts for the purpose of budget decision making.
SECTION 5. CONCLUSIONS AND FUTURE CHALLENGES

331. Implementing e-government has certainly created challenges for member countries, in spite of a long tradition of ICT use in government. While the amount of practical experience to draw on when implementing Internet-based applications is extensive, a range of future challenges will put pressure on public administrations and on e-government programmes to be more responsive, to deliver government priorities more effectively and to do so with fewer resources. This section draws together the project’s major findings and identifies future issues and challenges.

5.1 Conclusions

Implementing e-government

332. One of the biggest challenges to implementation of e-government is the need for a seamless approach to serving citizens and businesses. A seamless approach implies a common vision, a common delivery strategy, and numerous back-office changes including organisational change, cooperation and collaboration. The lack of real collaboration in public administrations reflects their compartmentalised structure (silos) and the absence of incentives for co-operation.

333. This report identified ten guiding principles as a framework for future action to advance e-government initiatives. These ten guiding principles fit into four broader areas: vision and political will, common frameworks and co-operation and customer focus and responsibility.
GUIDING PRINCIPLES FOR SUCCESSFUL E-GOVERNMENT

Vision/political will

1. **Leadership and Commitment**: Leadership and commitment, at both political and administrative levels, are crucial to managing change. Committed leaders are required to deal with disruptive change, to persevere when benefits take time to emerge, to respond when things go wrong, and to establish visions and plans for the future.

2. **Integration**: E-government is an enabler, not an end in itself. It needs to be integrated into broader policy and service delivery goals, broader public management reform processes and broader information society activity.

Common frameworks/co-operation

3. **Inter-agency collaboration**: E-government is most effective when agencies work together in customer-focussed groupings of agencies. Agency managers need to be able to operate within common frameworks to ensure interoperability, maximise implementation efficiency and avoid duplication. Shared infrastructure needs to be developed to provide a framework for individual agency initiatives. Incentives can help encourage collaboration.

4. **Financing**: ICT spending, where appropriate, needs to be treated as an investment, with consideration of projected streams of returns. E-government requires a level of certainty of future funding to provide sustainability to projects, avoid wasting resources and gaining maximum benefit from given funding levels. A central funding programme could help foster innovation and allow for key demonstration projects.

Customer focus

5. **Access**: Governments should pursue policies to improve access to online services. Many advantages of online government information and services are not replicable offline, so that those who lack access will be excluded unless action is taken.

6. **Choice**: Customers should have choice in the method of interacting with government, and the adoption of online services should not reduce choice. A principle of “no wrong door” to access the administration should be adopted. Services should be driven by an understanding of customer needs.

7. **Citizen engagement**: E-government information and services should be of high quality and engage citizens in the policy process. Information quality policies and feedback mechanisms will help maximise the usefulness of information provision and strengthen citizen participation.

8. **Privacy**: E-government should not be delivered at the expense of established expectations of privacy protection, and should be approached with the goal of protecting individual privacy.

Responsibility

9. **Accountability**: E-government can open up government and policy processes and enhance accountability. Accountability arrangements should ensure that it is clear who is responsible for shared projects and initiatives. Similarly, the use of private sector partnerships must not reduce accountability.

10. **Monitoring and evaluation**: Identifying the demand, costs, benefits and impacts of e-government is crucial if momentum is to be sustained. E-government implementers cannot expect support if they cannot articulate potential benefits.
Implications of e-government

334. In terms of public administrations, the impact of e-government at the broadest level is simply that it will facilitate better government. E-government acts as an enabler to achieve better policy outcomes, higher quality services, greater engagement with citizens and improve back office procedures. Governments and public administrations will, and should, continue to be judged against these traditional, established criteria for success.

335. The means of enabling change through e-government is different in OECD countries, reflecting the current stage of e-government, different political structures and environments, broader approaches to collaboration and access to funding. Precise impacts on public administrations and the way they adapt to incorporate e-government capacity will differ and will continue to evolve.

336. Taking these caveats into account, increasing e-government activity has broad implications:

- **In terms of external governance relationships** between citizens, businesses and public administrations, the boundaries between public administrations and society may become more open, with a greater flow of information in both directions. Governments would increase the provision of information to citizens and open up processes, and they would receive more input and information relating to policy processes and ways of working. The boundary between public administrations and society will become more blurred as a result of the greater use of private-sector firms and social intermediaries, driven in part by the imperatives of e-government.

- **Within public administrations**, the **boundaries between agencies** may similarly become more open and less distinct, with greater information flows and overlapping processes and policies. This, in turn, would affect ways of working and involve a greater focus on customer and policy outcomes, the development of cross-agency teams and more sharing of data on customers and on policy issues.

- **More structured knowledge management strategies** may facilitate greater **information flows within agencies**. This would support a greater focus on customers, improve efficiency and develop a greater sense of organisational identity. The broader benefits of cross-agency collaboration will not emerge unless similar activity and change takes place within individual public administration units.

- **E-government ways of working will become the norm**. The issues surrounding e-government (improved services, citizen engagement, organisational change, leadership, coordination, collaboration, skills, public-private partnerships, managing risk and monitoring and evaluation) will increasingly determine how public administrations as a whole will need to operate if they are to remain responsive to the pressures and demands on them.

- The need for cross-government architectures and other collaborative arrangements to reduce duplication and ensure efficient use of infrastructure will intensify. It will be difficult to ensure that this does not result in **over-centralisation** and hinder managerial oversight and initiative.
5.2 Next steps

International Co-operation

337. In terms of international co-operation, considerable co-operation takes place through organisations such as the ICA\(^7\) and the GOL\(^8\). In addition to the present project, the OECD is active through the Working Group on Information Economy (WPIE), the Working Party for Indicators for the Information Society (WPIIS) and the Working Party on Information Security and Privacy (WPISP). [insert footnotes] Further areas where sharing experience to address common issues could be valuable include:

- Co-operation on standards, building, for example, on the work being undertaken by the United Kingdom’s GOVTALK project.
- Co-operation on architecture frameworks, such as the United States’ Federal Enterprise Architecture.
- Further co-operation on efforts to measure demand, costs and benefits for e-government initiatives.

Future challenges

338. To date, e-government has enjoyed a level of political support in OECD governments, which have seen e-government as a tool to modernise public administration, as a symbol of modernity, as a way of promoting the development of ICT industry and the move to an information society. The initial impressive visible results of e-government activity – a rash of government Web sites, a number of sophisticated transactional services, the development of portals – made support easy to find, especially since additional funding was often not necessary. The next stage of e-government, involving the development of hidden infrastructure, joined-up “back-office” arrangements, higher levels of funding and possibly disruptive changes to public administrations, is likely to have far less appeal. The benefits are also likely to emerge slowly. The collapse of the dot-com bubble has also made e-commerce and e-government less fashionable. The need for leadership and commitment to change will be more than ever indispensable.
Priorities for action

This report has argued that there is a need to take action to ensure that the benefits of e-government activity are maximised. Action is needed because the initial attraction of e-government has worn off in many countries just when e-government initiatives are starting to mature and to deliver major benefits. Additionally, in order to deliver benefits, e-government will increasingly disrupt ways of working, require increased infrastructure investment and face increasing customer expectations. Finally, the implementation of e-government initiatives needs to become as efficient and effective as possible, as reliance and expenditure on ICT increases.

OECD countries differ, and priorities for action will vary from country to country. However, a number of questions can be used to develop a framework for priority action:

What is hindering further uptake of e-government? Are the obstacles outside of the control of implementers (e.g. barriers)? Is existing legislation and regulation a barrier to e-government?

What are the objectives of e-government in your country? Is collaboration necessary to achieve these goals, and are the appropriate frameworks in place? To what extent can progress toward such goals be measured?

− What changes necessary to the front office in order to meet service objectives? What changes are necessary to the back office? Is there strong leadership, and are the skills in place to implement necessary reforms? What internal resistance is there to organisational change?

− What needs to be done in the short-term to achieve e-government goals? What long-term actions are necessary?

− What can be done through international co-operation?

Horizontal collaboration

339. The need for e-government initiatives will continue, and in all likelihood increase, in the light of the broader challenges faced by public administrations and governments. In order to be effective, e-government will force co-ordinators to rethink organisational and internal relations for horizontal collaboration within government. The logic of customer-focused, seamless government, and the need to work jointly to ensure interoperability and reduce duplication applies as much across jurisdictions as it does across agencies at the same level of government.

340. The barriers identified in this report (legislative, budgetary, technological and the digital divide) will not disappear, and barriers must be overcome in order to maximise the benefits of e-government. Since their introduction, ICTs have changed how governments operate. As e-government becomes more prevalent, and as its impact on processes becomes more profound as transactional services develop, the greater the need for organisational change to facilitate and maximise its benefits. To date, governments have been able to introduce e-government services with little disruption to existing structures and ways of operating. This phase of e-government is nearing its conclusion in many OECD countries:

341. Partnering with the private and non-profit sectors will become increasingly important to maximise the benefits of e-government. Major challenged include the specification of outputs, the sharing
of risk, accountability arrangements, and managing the relationship between public and private sector partners (including having the necessary skills).

342. The growing complexity of the problems to be faced will challenge traditional delivery modes and related accountability structures. The impact of decisions taken at supranational level, greater collaboration across jurisdictions and agencies, and the blurred border between private and public sectors in the delivery of “government” services will in all probability be more strongly felt. This will influence how citizens see government’s ability to respond to their concerns and require assessment of accountability structures, including formal parliamentary arrangements, if government is to remain accountable and open. Accountability frameworks should also take into account provision of information and feedback from service users.

343. Public administrations will need to continue to develop policies and technical solutions around the key areas of security, authentication and data storage, in order to preserve the privacy of individual citizens’ data. If not handled correctly, this issue, more than any other, has the potential to undermine support for e-government. Solutions in this area can be contentious, and privacy issues are exacerbated when linked with seamless government initiatives; the linking and matching of separate data holdings in particular heightens concerns.

**Other challenges**

344. A number of additional issues will need to be tackled in order to maximise the benefits of e-government. These issues include:

- The lack of **vertical e-government integration** across different levels of government (e.g. local, regional, national) is a key challenge to the successful implementation of e-government. Users want effective service, and care less about differences in approach and/or responsibility among levels of government. Uncoordinated local initiatives can lead to costly incompatibility or duplication.

- Managing the **transition to e-government** can be expensive, given the need to develop and maintain online services alongside traditional service channels. E-government projects should be done in conjunction with existing service channels and use the introduction of new technology as an opportunity to re-engineer overall service delivery processes.

- OECD countries have difficulty **monitoring and evaluating** e-government impacts (including cost, benefit, and level of demand), yet increased support for e-government projects will be dependent on these measures. Monitoring and evaluation should be used effectively for programme improvement and targeting, and needs to be better tied to e-government planning.

345. Citizens are interested not only in the provision of services online, but also in the opportunities ICT presents to **increase citizen engagement** in the policy process. Governments will need to create new and more direct links with civil society to improve the quality and responsiveness of decision-making. But citizens’ enhanced ability to communicate directly with public administrations may put elected representatives in danger of being bypassed. In short, e-government will affect the relationship between parliament, the executive and citizens, challenging traditional concepts of political legitimacy, representation and ministerial accountability. These changes will make striking a balance between the representative and participatory models of democracy important.
REFERENCES


CHATILLON, Georges (2002), “Confidence in E-Government: The Outlook For A Legal Framework for Personal Data And Privacy”.


FINE, Ed (2002), “Change in the Workplace”


KERSCHOT, Hugo and POTÉ, Kris (2001), “Web-based Survey on Electronic Public Services (Results of the first measurement: October 2001)”.


MACINTOSH, Ann (2002), “Using information and communication technologies to enhance citizen engagement in the policy process”.


OECD (2001), The Electronic Commerce Business Impacts Project (EBIP), OECD, Paris

OECD (2001), Public Sector Leadership for the 21st Century, OECD, Paris

OECD (2001), Citizens as Partners: Information, Consultation and Public Participation in Policy Making, OECD, Paris

OECD (2002), Information Technology Outlook, OECD, Paris

OECD (2002), Measuring the Information Economy, OECD, Paris


ROY, Jeffrey, ALLEN, Barbara and LIFSHITZ, Ariel (2002), “E-Government and Private-Public Partnerships: Relational Challenges and Strategic Directions”.


110
Country Papers


Canada Country Paper (2002c), “A Community-Based Approach to Preparing for Change in the Workplace”.


Country Presentations


Australia – “Interoperability through Collaboration”.

Australia – “Public/Private Partnerships”.

Canada – “A Community-Based Approach to Preparing for Change in the Workplace”.


Finland – “Public/Private Partnerships in E-Government Service Delivery”.

France – “Developing E-Government in France”.

Germany – “BundOnline 2005 – Challenges to Collaboration”.


Italy – “E-Government Implementation in Italy”.

Italy – “A Network of Regional Competence Centres to Support Collaboration among Local Authorities for E-Government Development in Italy”.

Japan – “Global Business Dialogue on Electronic Commerce”.

Japan – “Leadership and Co-ordination in Realising E-Government in Japan”.

Korea – “Skills for Implementing E-Government Policy: E-Government Project for Local Governments in Korea”.

Korea – “Leadership and Co-ordination in E-Government in Korea”.


United States - Public Private Partnerships: the U.S. Experience

European Union, MATHIESSEN, Jens. “Promoting and Benchmarking E-Government – An EU Approach”.

European Union – “E-Government – the role of the EU”.

Holmes, Douglas “E-Government Case Studies”.

112
ANNEX 1. GLOSSARY

ACTIVE PARTICIPATION - a relation based on partnership with government, in which citizens actively engage in the policy-making process. It acknowledges a role for citizens in proposing policy options and shaping the policy dialogue – although the responsibility for the final decision or policy formulation rests with the government.

AUTHENTICATION - a security measure for checking a user’s identity before being allowed Internet or intranet access, typically by entering a user identity and/or password.

BACK OFFICE - the internal operations of an organisation that support core processes and are not accessible or visible to the general public.

BARRIERS - e-government barriers are the obstacles that are external to ICT projects at the individual agency level. As such, they often concern breakdowns, missing components or lack of flexibility in the government-wide frameworks that enable e-government. The result is often the inability to achieve a whole-of-government or seamless perspective in e-government implementation.

CHANNELS - a means of accessing services (i.e. Internet, telephone, visit to a government office). Different types of customers use different service access channels.

CONSULTATION - a two-way relationship between the citizen and government, in which governments consult citizens and ask for their feedback and citizens provide feedback to government. Governments define the issues for consultation, set the questions and manage the process, while citizens are invited to contribute their views and opinions.

E-GOVERNMENT - the use of information and communication technologies (ICTs), and particularly the Internet, as a tool to achieve better government.

E-GOVERNMENT ACTIVITIES - is broadly used to cover all activities relating to the use of ICTs by governments. It thus covers both an agency’s activities with regard to citizens, businesses and other public agencies, as well as activities concerning internal administration processes, structures and behaviour.

ELECTRONIC PUBLIC SERVICES - services provided by, but not necessarily supplied by, the public administration to citizens, businesses and organisations as well as to other public administration units through information networks.

FRONT OFFICE - refers to government as its constituents see it, meaning the information and service providers, and the interaction between government and both citizens and business.

INFORMATION - a one-way relation in which government produces and delivers information for use by citizens. It covers both ‘passive’ access to information upon demand from citizens and ‘active’ measures by government to disseminate information to citizens.
INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) – refers to both computer and communication technology. IT (information technology) is defined as any equipment or interconnected system (subsystem) of equipment that includes all forms of technology used to create, store, manipulate, manage, move, display, switch, interchange, transmit or receive information in its various forms. Information can be in the form of: business data; voice conversations; still images; motion pictures; multimedia presentations and other forms including those not yet conceived. The meaning of communication refers to a system of shared symbols and meanings that binds people together into a group, a community, or a culture. The word communication was added to IT so as to make a network of the usage of Information Technology. 10

INFORMATION MANAGEMENT (IM) - operations which develop and maintain the information reserves and information processes of an organisation.

INFORMATION NETWORK - a system of IT hardware and services which provides users with delivery and retrieval services in a given area (e.g. electronic mail, directories and video services);

INFORMATION NETWORK INFRASTRUCTURE - the whole system of transmission links, access procedures, legal and general frameworks, and the basic and supportive services of the information network;

INFORMATION SOCIETY (IS) - a society which makes extensive use of information networks and ICT, produces large quantities of information and communications products and services, and has a diversified content industry.

INFORMATION TECHNOLOGY (IT) - means the hardware, software and methods used for the automatic processing and transfer of data.

INTEROPERABILITY – the use of agreed common standards by government organisations so as to be able to share information and integrate information and business processes.

MIDDLEWARE - Middleware is software that integrates services and distributed applications across the Internet or local area networks, and may provide a set of services such as authentication, messaging, transactions, etc. Middleware allows government organisations to share data between front office service delivery channels and back offices applications and processes, and is increasingly perceived as the best technology for delivery of joined-up e-government services.

NO WRONG DOOR POLICY - means keeping a variety of service access channels operational (government offices, telephone call centres, government web sites) so that citizens can choose and use their preferred mode of access. See also “channel”.

ONE-STOP SHOP - a government office where services by multiple public administration authorities are available on the same visit.

PORTAL – this is a dedicated service that co-ordinates and presents information and services from different, independent suppliers into one interface, typically a web site. The information is categorised in accordance with given criteria related to users’ needs.

PUBLIC ACCESS TERMINAL - a PC with Internet access installed in a public space such as a library, available for free use by the public.

PUBLIC KEY INFRASTRUCTURE (PKI) - This is the most common method on the Internet for authenticating a message sender or encrypting a message. It enables users of an insecure public
network, such as the Internet, to securely and privately exchange information and money through the use of a public and a private cryptographic key pair that is obtained and shared through a trusted authority. It provides for a digital certificate that can identify an individual or an organization and directory services that can store and, when necessary, revoke the certificates.

**SEAMLESS SERVICES** – this means presenting an easy to use, function-driven “one-stop shop” to the public. It provides citizens with *what* they need to know, without having to know *which* government level or agency they must contact to get it. It provides all the information and services a user needs in one web site.
ANNEX 2. ICT DIFFUSION AND THE DIGITAL DIVIDE

This statistical annex provides data on ICT diffusion in selected OECD countries.

Fixed telecommunication access channels in OECD countries
Per 100 inhabitants (1990, 1995 and 1999)

Source: OECD Communications Outlook 2001
Internet hosts in OECD countries per 1,000 inhabitants, July 2001
(gTLD adjusted)

Source: OECD, from Netsizer (http://www.netsizer.com).
Secure servers per million inhabitants, July 2001


Access to a home computer in selected OECD countries, 1994-2001


Households with access to a home computer, 2000 and 2001

Household access to Internet in selected countries, 1996-2001

Note: For Denmark, Internet access via a home computer; for other countries access via any device (computer, phone, TV, etc.).
Households with access to Internet, 2000 and 2001

Note: For Denmark, Ireland and the United Kingdom, access to the Internet via a home computer; for the other countries access to the Internet through any device (e.g. computer, phone, TV, etc.)

Diffusion of information technology in the education system, 1992-2001
Average number of PCs per 100 students

1. Average number of PCs per 100 full-time enrolled students. For 2001, 1999 student figures were used.
Source: OECD, based on World Information Technology and Services Alliance (WITSA)/International Data Corporation (IDC), 2002.
OECD Internet Access Basket for 40 hours at peak times using discounted PSTN rates
USD, PPP, including VAT (August 2001)

Note: Internet access costs differ substantially between OECD countries, primarily due to differences in variable telephone charges and the costs of Internet service providers. Previous OECD studies show that these differences are primarily due to the state of competition in different member countries.

Source: OECD
PC penetration by household income for selected OECD countries, 2000
Percentages

Note: Because of differences in income brackets used, data is not comparable across countries.
1. Lowest income bracket: less than AUD 25 000; highest income bracket: more than AUD 100 000.
2. Lowest income bracket: less than FRF 80 000; highest income bracket: more than FRF 450 000.
3. Lowest income bracket: less than JPY 3 million; highest income bracket: more than JPY 12 million.
4. Lowest income bracket: second income decile (the second decile is is used because lowest income decile includes students who have generally higher ICT penetration rates); highest income bracket: tenth income decile.
5. Lowest income bracket: less than USD 15 000; highest income bracket: more than USD 75 000. U.S. data for 2001 shows an increase to 89.0% for the highest income bracket, and 23.8% for the lowest income bracket.
Internet access by household income for selected OECD countries, 2000

Percentages

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<th>Country</th>
<th>Lowest Income Bracket</th>
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<td>more than USD 75 000</td>
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Note: Because of differences in income brackets used, data is not comparable across countries.
1. Lowest income bracket: less than AUD 25 000; highest income bracket: more than AUD 100 000.
2. Percentage of households having regular use of the computer from home. Lowest income bracket: first income quartile; highest income bracket: fourth income quartile.
3. Lowest income bracket: less than FRF 80 000; highest income bracket: more than FRF 450 000.
4. Lowest income bracket: less than JPY 3 million; highest income bracket: more than JPY 12 million.
5. 1999; lowest income bracket: second income decile (the second decile is used because lowest income decile includes students who have generally higher ICT penetration rates); highest income bracket: tenth income decile.
7. Lowest income bracket: less than USD 15 000; highest income bracket: more than USD 75 000. U.S. data for 2001 shows an increase to 85.4% for the highest income bracket, and 17.7% for the lowest income bracket.

Source: OECD, based on national statistics.
Internet home access among households by income level*
Percentages, 2000

* For Denmark and the United Kingdom, access to the Internet via a home computer; for the other countries access to the Internet through any device (e.g. computer, phone, TV, etc.).
2. Households in urban areas only.
Source: OECD and national sources.
PC and Internet access by educational level
In the United States and the Netherlands (%)

Note: Data apply to the educational attainment of the head of household in the US, the person interviewed in the Netherlands.

Educational levels 1 through 5 are defined as follows:
1: elementary school in US; primary education in the Netherlands.
2: some high school in the US; secondary education in the Netherlands.
3: high school diploma or GED in the US; lower general secondary education in the Netherlands.
4: some college in the US; senior, higher general secondary education/intermediate vocational education/pre-university in the Netherlands.
5: BA or more in the US; higher vocational education/university in the Netherlands.

Source: OECD from national sources.
PC and Internet penetration rate by age (%)
Percentages

Australia (2000)

France (2000)

United States (2001)

Note: Age of head of household in France. Age of individual in Australia and United States, and includes adults accessing the Internet from any site.
Source: OECD from national statistical sources.
### Internet and gender

#### Percentages

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*Note:* Individual home access in Sweden and Norway, Internet use from any location in Australia and the United States.

*Source:* OECD from national statistical sources.

### Urban homes are more connected than rural ones

#### Internet access among rural and urban households

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<td><strong>United States</strong></td>
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*Note:* For the Netherlands, “rural” is defined as a low degree of urbanisation, and “urban” a high degree. For Japan, “rural” is defined as “villages and towns” and “urban” as “cities”. For both countries, the highest categories were not taken into account. For Canada, urban refers to the top 15 metropolitan areas and rural refers to other households.

*Source:* OECD, based on national statistical sources.
English is the main language of the Internet

Links to secure servers by language
(July 2000)
(All languages)

- English: 89.5%
- Other OECD languages: 10.5%

Links to secure servers by language
(July 2000)
(Excluding English: 89.5%)

- Other OECD languages:
  - Norwegian: 0.07%
  - Finnish: 0.11%
  - Dutch: 0.13%
  - Italian: 0.20%
  - Portuguese: 0.33%
  - Swedish: 0.33%
  - Korean: 0.46%
  - Japanese: 0.71%
  - Hungarian: 0.01%
  - Greek: 0.01%
  - Icelandic: 0.01%
  - German: 0.98%
  - French: 0.87%
  - Spanish: 0.83%

Source: OECD Understanding the Digital Divide

PC access gap by income
Difference between access rates of highest and lowest income groups

Note: Income groups defined as in Figure 14.
Source: OECD based on national sources.
Internet access gap by income
Difference between access rates of highest and lowest income groups

Note: Income groups defined as in Figure 15. Details, including some 2001 data, available in Annex Table A3.

Source: OECD based on national sources.

% Growth rate of PCs in households of lowest and highest income levels

Note: Income brackets defined as in Figure 14. Netherlands growth is 1998-1999.

Source: OECD, based on national sources.
% Growth rate of Internet in households of lowest and highest income levels

Note: Income brackets defined as in Figure 15. Netherlands growth is 1998-1999. Annex Table A4 gives details of growth rates in 9 OECD countries.

Source: OECD, based on national sources.
Table 1. Households with access to a home computer in selected OECD countries
1986-2001

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1. February of each year, except for 2000, average of the year.
2. May of each year, Household Facilities and equipment Survey.
4. June of each year.
7. Fiscal year ending in March. Ministry of Posts and Telecommunications, Communications usage trend survey.
8. Households in urban areas with more than 15 000 inhabitants only.
9. March of each year. 1999 and 2000 are projections.
10. Provisional data.
11. Households in urban areas only.
14. From CBS, Sociaal-economish panelonderzoek.
15. From CBS, POLS survey.

Source: OECD, ICCP, compiled from National Statistical Offices or national official sources.
Table 2. Households with access to Internet (1) in selected OECD countries, 1996-2001

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<td>48.2</td>
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<td>36.0</td>
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<td>26.2</td>
<td>41.5</td>
<td>50.5</td>
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<td>26.5</td>
<td>45.0</td>
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</table>

1. For Denmark, Ireland, the Netherlands and the United Kingdom, access to the Internet via a home computer; for the other countries access to the Internet through any device (e.g. computer, phone, TV, etc.).
2. November of each year. Regular users.
3. June of each year.
4. Percentage of Households with home Internet access, not necessarily only from a PC. Provisional data for Italy.
5. Fiscal year ending in March.
6. Households in urban areas only.
9. Fall of each year.

Source: OECD, compiled from National Statistical Offices or national official sources.
Table 3. Proportion of Households with Internet access by income bracket

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<td>Australia</td>
<td>Lowest</td>
<td>5.0</td>
<td>6.0</td>
<td>10.0</td>
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<tr>
<td></td>
<td>Highest</td>
<td>44.0</td>
<td>52.0</td>
<td>69.0</td>
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<tr>
<td>Canada</td>
<td>Lowest</td>
<td>5.5</td>
<td>7.1</td>
<td>10.9</td>
<td>16.5</td>
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<td>44.9</td>
<td>53.5</td>
<td>65.4</td>
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</tr>
<tr>
<td>Denmark</td>
<td>Lowest</td>
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<td>26.0</td>
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<tr>
<td></td>
<td>Highest</td>
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<td></td>
<td>67.8</td>
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<td></td>
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<tr>
<td>Finland</td>
<td>Lowest</td>
<td>4.0</td>
<td>9.6</td>
<td>11.6</td>
<td>15.0</td>
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<td>Highest</td>
<td>36.8</td>
<td>50.2</td>
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<td>3.5</td>
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</tr>
<tr>
<td></td>
<td>Highest</td>
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<td>51.1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Japan</td>
<td>Lowest</td>
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<td>21.1</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Highest</td>
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<td>58.8</td>
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<td></td>
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</tr>
<tr>
<td>Norway</td>
<td>Lowest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td>Highest</td>
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<td></td>
<td></td>
<td></td>
<td>77.0</td>
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<tr>
<td>United Kingdom</td>
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<td>5.0</td>
<td>8.0</td>
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</tr>
<tr>
<td></td>
<td>Highest</td>
<td>32.0</td>
<td>62.0</td>
<td>78.0</td>
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<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>Lowest</td>
<td>4.9</td>
<td>7.0</td>
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<td>Highest</td>
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<td>57.2</td>
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<tr>
<td>United States</td>
<td>Lowest</td>
<td>9.2</td>
<td>13.7</td>
<td>18.9</td>
<td>25.0</td>
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<tr>
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<td>44.5</td>
<td>58.9</td>
<td>70.1</td>
<td>78.9</td>
<td></td>
</tr>
</tbody>
</table>

Note: Income brackets are defined as follows
Australia: Lowest income bracket: less than AUD 25 000; highest income bracket: more than AUD 100 000.
Canada: Lowest income bracket: first income quartile; highest income bracket: fourth income quartile.
Denmark: Lowest income bracket: 100.000-199.999 Danish KR; highest income bracket: 400.000 Danish KR or more.
Finland: Lowest income bracket: first income quartile; highest income bracket: fourth income quartile.
France: Lowest income bracket: less than FRF 80 000; highest income bracket: more than FRF 450 000.
Japan: Lowest income bracket: less than JPY 4 million; highest income bracket: more than JPY 20 million for 1999, more than JPY 10 million for 2000.
Norway: Lowest income bracket: less than NOK 259,000; highest income bracket: more than NOK 600,000.
United Kingdom: Lowest income bracket: second decile of income; Highest income bracket: Tenth income decile.
Netherlands: Lowest income bracket: second income decile; highest income bracket: tenth income decile.
United States: Lowest income bracket: less than USD 15 000; highest income bracket: more than USD 75 000.

Source: OECD ICT database (March 2002), and national sources.
Table 4. Growth of household Internet access

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<td><strong>Growth of Households with Internet access by income bracket</strong></td>
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<td>Australia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest</td>
<td>20%</td>
<td>67%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest</td>
<td>18%</td>
<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest</td>
<td>29%</td>
<td>54%</td>
<td>51%</td>
<td></td>
</tr>
<tr>
<td>Highest</td>
<td>38%</td>
<td>19%</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Lowest</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Highest</td>
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</tr>
<tr>
<td>Finland</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Lowest</td>
<td>140%</td>
<td>21%</td>
<td>29%</td>
<td></td>
</tr>
<tr>
<td>Highest</td>
<td>36%</td>
<td>27%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>France</td>
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</tr>
<tr>
<td>Lowest</td>
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<td></td>
<td>67%</td>
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<tr>
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<td></td>
<td></td>
<td>59%</td>
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</tr>
<tr>
<td>Japan</td>
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<td>284%</td>
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</tr>
<tr>
<td>Lowest</td>
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</tr>
<tr>
<td>Highest</td>
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<td></td>
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<tr>
<td>United Kingdom</td>
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</tr>
<tr>
<td>Lowest</td>
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<td></td>
<td>400%</td>
<td>60%</td>
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<tr>
<td>Highest</td>
<td></td>
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<td>94%</td>
<td>26%</td>
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<tr>
<td><strong>Growth of Individuals with Internet access by income bracket</strong></td>
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</tr>
<tr>
<td>Lowest</td>
<td></td>
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<td>44%</td>
<td></td>
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<tr>
<td>Highest</td>
<td></td>
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</tr>
<tr>
<td>United States</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Lowest</td>
<td>49%</td>
<td></td>
<td>32%</td>
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<tr>
<td>Highest</td>
<td>32%</td>
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<td>13%</td>
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</table>

Note: Income brackets are defined as follows
Australia: Lowest income bracket: less than AUD 25 000; highest income bracket: more than AUD 100 000.
Canada: Lowest income bracket: first income quartile; highest income bracket: fourth income quartile.
Denmark: Lowest income bracket: 100.000-199.999 Danish KR; highest income bracket: 400.000 Danish KR, or more.
Finland: Lowest income bracket: first income quartile; highest income bracket: fourth income quartile.
France: Lowest income bracket: less than FRF 80 000; highest income bracket: more than FRF 450 000.
Japan: Lowest income bracket: less than JPY 4 million; highest income bracket: more than JPY 20 million for 1999, more than JPY 10 million for 2000.
United Kingdom: Lowest income bracket: second decile of income; Highest income bracket: Tenth income decile.
Netherlands: Lowest income bracket: second income decile; highest income bracket: tenth income decile.
United States: Lowest income bracket: less than USD 15 000; highest income bracket: more than USD 75 000.

Source: OECD ICT database (March 2002), and U.S. Department of Commerce A Nation Online, 2002
Table 5. Internet home access among households by income quartile*, 2000 (%)

<table>
<thead>
<tr>
<th>Country</th>
<th>Household Internet access</th>
<th>First income quartile</th>
<th>Fourth income quartile</th>
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<tr>
<td>Australia</td>
<td>33.0</td>
<td>9.0</td>
<td>58.0</td>
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<tr>
<td>Canada</td>
<td>40.1</td>
<td>16.5</td>
<td>65.4</td>
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<td>Denmark (1)</td>
<td>52.0</td>
<td>37.0</td>
<td>53.0</td>
</tr>
<tr>
<td>Finland</td>
<td>30.0</td>
<td>11.6</td>
<td>64.0</td>
</tr>
<tr>
<td>Turkey (2)</td>
<td>6.9</td>
<td>0.1</td>
<td>21.4</td>
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<td>United Kingdom (3)</td>
<td>33.0</td>
<td>4.0</td>
<td>41.0</td>
</tr>
<tr>
<td>United States</td>
<td>41.5</td>
<td>14.0</td>
<td>77.0</td>
</tr>
</tbody>
</table>

*Note: For Denmark, the Netherlands and the United Kingdom, access to the Internet via a home computer; for the other countries access to the Internet through any device (e.g. computer, phone, TV, etc.).
2. Households in urban areas only.

Source: OECD, ICT database.
ANNEX 3. E-GOVERNMENT STATISTICS

This annex provides e-government statistics from selected OECD countries.

**eEurope: Online availability of public services, 2001-2002**

Source: eEurope
Internet and e-mail access in Canada's public and private sectors, 2000

Source: Statistics Canada (2001), "Electronic Commerce and Technology Use", Connectedness Series, Ottawa, September

Government Internet access and Web sites in Australia, 1997/98

Source: Australian Bureau of Statistics (1999), "Government Use of Information Technology", 8119.0, Canberra
Employees per PC in Japan's central Government, FY 1996-2000

Source: Administrative Management Bureau (2001), Basic Survey on the Progress of Government ICT Use, Tokyo


Source: Statistics Finland (2001), On the Road to the Finnish Information Society III, Helsinki
Personal Internet usage by purpose in the UK, July 2000

- Finding information about goods / services: 70%
- Using e-mail: 69%
- General browsing or surfing: 64%
- Finding information related to education: 34%
- Buying or ordering tickets / goods / services: 28%
- Personal banking / financial / investment activities: 21%
- Looking for work: 18%
- Using chat rooms or sites: 17%
- Playing or downloading games: 17%
- Playing or downloading music: 16%
- Using or accessing government / official: 15%
- Other things: 11%

Note: Adult access to the Internet for personal use. Percentages do not add to 100 as respondents may give more than one answer.
Source: UK National Statistics, 26 September 2000
NOTES

1 E-government is here defined as “the use of information and communication technologies (ICTs), and particularly the Internet, as a tool to achieve better government.”


3 This model for electronic service delivery was developed by the Australian National Audit Office and the Australian Office for Government Online. It is available in the Audit Report No. 18, 1999-2000: Electronic Service Delivery, including Internet Use, by Commonwealth Government Agencies. See: www.anao.gov.au

4 An example is the e-Europe report, Web-based Survey on Electronic Public Services (2002), which makes a distinction between interaction, two-way interaction and transaction. Stage 4 in this model is then equivalent to stage 3 in the model used above; data sharing is not included in the e-Europe model. The Office of the e-Envoy, on the other hand, redefines the model used above so that stage 3 is two-way interaction while stage 4 is still defined as data sharing (Office of e-Envoy, 2000, Benchmarking Electronic Service Delivery, 2000).

5 Recent work has reviewed the experience of OECD countries with online engagement, drawing upon the definitions, terms and guiding principles proposed in the 2001 Citizens as Partners report. Undertaken in 2002, this review was conducted as part of the OECD E-Government Project under the auspices of the OECD Expert Group on Government Relations with Citizens and Civil Society, whose members provided significant guidance in defining its scope and submitting country case studies.

6 Section taken from PUMA Policy Brief No. 8, “The Hidden Threat to E-Government: Avoiding large government IT failures” (March 2001)

7 International Council for Information Technology in Government Administration http://www.ica-it.org/

8 Government Online International Network www.governments-online.org

9 The glossary describes how the terms are used in this report.