

Growth and Success through e-Governance

Best practice from Cyprus and Malta

Edited by Devindra Ramnarine
and RoseMarie-Rita Endeley



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COMMONWEALTH SECRETARIAT

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Preface

Commonwealth countries have had a wide range of experiences in their attempts to adopt e-government and face many options as they decide how to go forward. How they deal with these choices depends on their approaches to **benchmarking** (comparison with other projects), **best practices** (identifying the best alternatives) and **technology transfer** (proper training). Because e-government and e-governance are developing fields, rather than co-modified products, there is no one right way to do things, and there is no single goal towards which to strive. That is why the Commonwealth tradition of mobilising support and building consensus continues to be the most effective basis for moving forward with e-government.

This book describes the experiences of two small Commonwealth countries, Malta and Cyprus, which have pioneered the electronic delivery of public services, and the lessons that can be learned from their initiatives. It outlines the major concerns associated with e-governance, presenting a synopsis of the issues faced by Malta and Cyprus, and recommends steps that can be taken to advance e-governance.

I wish to thank Professor Thomas B. Riley, Executive Director, and William Sheridan, Research Fellow, Commonwealth Centre for e-Governance, Ottawa, Canada, for their detailed research and analysis of the numerous materials produced by the workshops held by the Commonwealth on e-governance. They were responsible for most of the writing of this book. I acknowledge the tireless efforts of the editors, Devindra Ramnarine, Adviser, Public Sector Informatics at the Commonwealth Secretariat's Governance and Institutional Development Division (GIDD) and Head of the Commonwealth Connects Programme, and Dr RoseMarie-Rita Endeley, Adviser, Caribbean and Mediterranean Region, GIDD, for conceptualising and executing the activities and interactions which have contributed to the knowledge and best practices described in this book.

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Jacqueline Wilson

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Introduction

Electronic infrastructure and network functionality are being adopted by governments around the world. The economic rationale for this is that it yields lower costs and speedier dissemination of information. The administrative justification is that it leads to more co-operation and better co-ordination. The political motivation is growing public expectations and a desire to emulate the successes of other governments. Electronic government and electronic governance are truly the wave of the future.

The history of co-operation among members of the Commonwealth provides a basis for sharing information and providing assistance on the design and deployment of e-governance systems and the lessons learned so far. The Commonwealth Secretariat has provided technical assistance when it has been needed or requested, and has created forums to enable knowledge to be shared. One such forum was a one-week course on e-governance held in Nicosia, Cyprus from 27 February to 3 March 2006 and attended by 29 public servants from Cyprus and Malta.

This book is a report of the context, content and outcomes of the course, which was organised by the Secretariat's Governance and Institutional Development Division. The course was facilitated by Devindra Ramnarine of the Commonwealth Secretariat and Thomas B. Riley of the Commonwealth Centre for e-Governance (CCEG), and supported by RoseMarie-Rita Endeley from the Secretariat. Background materials were prepared for course participants on the relevant issues, and participants developed proposals for their own organisations as part of the 'hands-on' exercises conducted throughout the course.

The book has several objectives. It provides an overview of the course and the lessons learned from it, a synopsis of e-governance issues and experiences, and an outline of international efforts in the field of e-governance. It compares experiences of e-governance in Cyprus and Malta and asks what steps can be taken to advance its use.

Chapter 1 presents an outline of the principles of e-governance. Various terminologies, such as e-government and e-democracy, are often used in conjunction with, or as a substitute for, e-governance. Depending on how these terms are defined, any one of them may be used. Considerable work has been done on this topic, and it provides a context for the various ways in which e-governance is practised by different countries and government departments.

Chapter 2 reviews best practices. The concept of *best practice* was first introduced in business to describe the best business processes that had been developed through the value-chains of comparable companies. The consulting firm Arthur Andersen was the initial champion of this method, which it used to recommend cutting-edge solutions to its clients.¹ Governments quickly adopted the concept and the American Productivity

& Quality Center (APQC) now lists one of its specialties as government best practices.² This chapter focuses on best practices that are most widely used in e-governance.

Chapter 3 provides a guided tour of e-governance from an international perspective. It looks at materials from the Commonwealth Secretariat, the Organisation for Economic Co-operation and Development (OECD), the United Nations and the World Bank. The Commonwealth's concern is primarily the sharing of experiences, methodologies and lessons learned. The OECD's perspective is to promote e-governance as a tool which can help promote economic development. The World Bank is particularly interested in the integrity of financial transactions and the transparency of government decision-making (because good governance sets the stage for viable commerce). This chapter will show how these concerns overlap and will identify distinctions between the various international approaches to e-governance.

Chapter 4 presents a case study of e-government in Malta. It includes a survey of projects presented to Maltese government officials, together with their answers. Chapter 5 presents a case study of e-government in Cyprus. It describes a similar survey presented to officials of the Government of Cyprus.

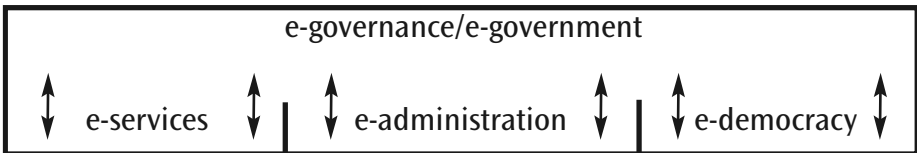
Chapter 6 presents two examples of ongoing e-governance projects, one in Cyprus (telemedicine) and the other in Malta (m-government.gov.mt).

Chapter 7 offers a comparative analysis of e-government in Malta and Cyprus, based on materials from government websites and the answers to the survey questionnaire. Both Malta and Cyprus have government websites that set out the history, mandate and progress of e-governance, and describe future plans. This made it possible to tabulate the answers given to the survey questionnaire and compare performance parameters to show both similarities and some differences in the e-governance experiences of the two countries. Based on this comparison, lessons that can be learned from the experiences of planning and implementing e-governance in Malta and Cyprus are shared with readers. It is hoped that they will also be useful to other governments which are considering enhancing their electronic infrastructure.

Principles of e-Governance

The new model of e-governance

We begin by articulating a new model of e-governance that has arisen from experience accumulated in applying technology to government infrastructure.



1. E-governance and e-government are used interchangeably.³ With some users, the choice of term depends on what they are emphasising: e-governance emphasises the governing processes, whereas e-government emphasises the electronic infrastructure. The rationale for this model is that it covers three different types of activities which can be identified and analysed in terms of their own goals and operations.
2. E-services refers to those aspects of e-governance involved in information and service distribution, both to and from the public (both citizens and businesses) in the form of documentation and remuneration, and to and from other governments in the form of information-sharing (best practices) and joint programme delivery (funding and/or facilitation).
3. E-administration entails those aspects of e-governance that require policy and workflow co-ordination; it comprises 'horizontality' between member departments and sections, and 'verticality' between decision-makers (supervisors) and knowledge workers (service-providers).
4. E-democracy concerns those aspects of e-governance that engage the public in electronically-mediated consultation and participation, whether these occur during elections (electronic voting), in the process of policy formulation (electronic meetings), or subsequently during programme implementation (online feedback and fine-tuning of regulations).

International standards

The use of electronic infrastructure for the purposes of governance is now, in the twenty-first century, a globally accepted goal. Literally every country, party, jurisdiction and candidate endorses this goal, regardless of their position in the ideological spec-

trum. Where differences emerge, they typically concern how quickly to proceed, the amount to be invested and which functions should be prioritised.

In response to these concerns, international agencies, after considerable research efforts, have created a variety of guidelines. These address what are considered from a comparative perspective to be the most salient issues in the efforts to apply electronic infrastructure to governance. This chapter presents the results of a major sampling of such standards. It identifies the points on which there is general agreement and those that reflect the particular concerns of each authoring agency.

Organisations whose guidelines were reviewed include International Business Machines' (IBM) Institute for Electronic Government, the OECD, the Pacific Council of International Policy (PCIP), the Commonwealth Centre for e-Governance and the World Bank.

IBM's Institute for Electronic Governance

Implementation stage	Transformation agenda
Milestone One	Integration
Milestone Two	Economic development
Milestone Three	E-democracy
Milestone Four	E-communities
Milestone Five	Intergovernmental
Milestone Six	Policy environment
Milestone Seven	Next generation internet

The approach behind this agenda is the quintessential chronological paradigm. There is a succession of stages, each one building on previous accomplishments. The implicit rationale for this approach is Eugene Rostow's *The Stages of Economic Growth* model that served as a guideline for international assistance for industrial investment in the post-second world war era.

All these milestones represent worthwhile achievements,⁴ although a number of questions can be raised. For instance:

- Is the indicated sequence set in stone or simply a suggestion? Are other sequences, or concurrent approaches, possible? Have they been tried?
- To what extent have various jurisdictions progressed through any of these stages?

- Has the transition to each stage been smooth or has it been problematic (and if so, in what way)?
- What are the costs and impacts of each stage? Are all the costs and impacts similar or are they different? (One suspects the latter.)
- Lastly, how evenly or disparately do these stages affect the three areas of e-governance: e-bureaucracy, e-government and e-democracy?

These questions illustrate the general principle that any such guidelines should be thoroughly investigated by prospective users, who need to look at the size of the sample on which they are based, the methodology behind the analysis and the assumptions that the organisation brings to its policy work.

The OECD's ten guiding principles for e-governance

Principle	Implementation
Commitment	Rhetorical and financial support for electronic service delivery
Rights	Access, privacy and confidentiality guaranteed to all users
Clarity	Goals, objectives, budgets and standards should be spelled out
Time	Enough time to plan, implement, monitor and review facilities
Objectivity	Performance criteria for networks, services, content, and satisfaction
Resources	Sufficient to design, deploy, operate and respond to feedback
Co-ordination	Standardised 'look and feel', navigation and content formats
Accountability	Staff answerable for quality and quantity of information and service
Evaluation	Annual audits and performance reviews for continuous improvement
Active citizenship	Encouragement of citizens to use the facilities in civic activities

The approach behind these principles can be characterised as 'constitutional' and reflects many of the features of democratic government. It is, understandably, a consensus view based on the member countries of the OECD, many of whom were consulted during the project that produced the principles, and some of whom were involved in the research and writing of the project report. Some of the questions that arise from the project are:

- What is the relative importance of each of these principles or should they all be given the same priority?
- Is there a sequence in which all or any of these concerns should be considered or can they be implemented in any order?
- What are the financial costs and other resource requirements for each principle? Do they all cost the same or are some principles more expensive to implement?

This approach also appears to address the kinds of issues one would expect to be covered during any e-governance project. Would using them produce any significantly different results than following a sequential approach, like that of IBM? If there are no differences, what are the advantages of using one approach rather than another? If there are differences, what are they and do they matter? Can these approaches be combined and if so how? Are there advantages (or disadvantages) in combining both approaches? If so, what are they?

Pacific Council on International Policy

The OECD guidelines were crafted to apply to all projects that have a mandate to implement e-government. However, some countries are more developed than others. In its publication *Roadmap for E-government in the Developing World* the PCIP posed the following questions for e-governance planners.

1. Why are we pursuing e-government?
2. Do we have a clear vision and priorities for e-government?
3. What kind of e-government are we ready for?
4. Is there enough political will to lead the e-government effort?
5. Are we selecting e-government projects in the best way?
6. How should we plan and manage e-government projects?
7. How will we overcome resistance from within the government?
8. How will we measure and communicate progress? How will we know if we are failing?
9. What should be the relationship with the private sector?
10. How can e-government improve citizen participation in public affairs?

Roadmap for E-government in the Developing World, 2002

These questions posed by the PCIP are directed at the clarity of objectives(s) towards which e-governance is aimed, rather than the sequence of stages through which it will pass or the political principles it seeks to re-inforce. The premise behind these questions is that ‘developing countries’ cannot afford the experimental extravagance that ‘developed countries’ can when contemplating e-governance, so the objectives should be well thought out before scarce resources are committed. What experience seems to show, however, is that unclear e-governance objectives in developed countries may jeopardise political support, resulting in consequences that are unacceptable.

Commonwealth Centre for e-Governance

In one of its monthly publications, the Commonwealth Centre for e-Governance summarised the requirements for successful electronic governance as developed by, among others, the World Bank. The World Bank, in particular, tries to encourage governments to adopt electronic governance as a vehicle for enabling transparency and eliminating corruption, in both government processes and business transactions. Hence, the first ten requirements represent the infrastructure that can support the eleventh requirement, namely accountability mechanisms (tracking activity electronically so as to provide a forensic trail that can be the basis for assigning responsibility and ensuring accountability).

World Bank’s requirements for electronic governance	
Vision	Purpose, goals, objectives
Strategic plan	Timetable, resources, personnel
Leadership	Champion, authorisation, publicity
Information sharing	Vertically, horizontally and between project partners
Feedback mechanisms	Contact channels, message recipients, helpful responses
Realistic budgets	Long-term commitment, equipment and training
Cross-government co-operation	Within and between departments, and between governments
Appropriate technologies	Implement on the basis of availability and cost
Information management	Organisation, storage, retrieval and sharing
Accountability mechanisms	Who is responsible for what, when, where and why?

Are all the first ten requirements really necessary to support accountability? If so, are they all necessary to the same degree? Are the costs of their implementation the same, or are the costs significantly greater (or smaller) for some than for others? Is accountability so important that it provides a bottom line for rationalising e-governance? How do other political objectives, such as equality, accessibility or democracy, fit into this set of priorities? The point of these questions is that with limited budgets, only so much can be done at once – focusing on accountability may either delay the achievement of other objectives or leave them undone. Is this understood and acceptable to those who are actually seeking e-governance?

Assessing the principles

All the principles mentioned above are worthy of attention by prospective adopters of electronic governance. There is nothing wrong with any of them – challenges arise from what is *not* covered by these principles. Are all the principles necessary, or are some of them good, but not essential? How much will each set of principles cost to implement? Is there a range for such costs and can effective strategising reduce any of them? Are the final costs reasonable for the governments that must bear them? It would appear from a survey of the available literature on this topic that the answers to these questions involve considerable political judgement rather than just administrative choice. In these circumstances, guidance from existing best practices can be of help.

Best Practices in E-governance

Methodology

To be effective and useful, best practices must include two techniques, namely:

- **Benchmarking cases:** comparing similar kinds of projects in terms of a common characteristic or feature that is relevant to the performance or configuration that is of concern.
- **Choosing exemplars:** identifying which of the cases compared exhibits examples of what was done and what should be done to achieve similar results in the same kind of situation.

It is therefore important to compare e-government practices and pick out which ones are best. These techniques represent part of a more general endeavour to find and catalogue lessons that can be learned from various organisational processes. Both the techniques of **benchmarking cases** and **choosing exemplars** were developed in business before being applied to governance. Similarly, the application of electronic infrastructure and processing to operations was also developed for business, and only subsequently applied to governance. In terms of using electronic technologies in other social processes, it is important to keep this critique in mind: ‘... the Internet ... doesn’t create the ability to communicate or discover or shop, but rather you do those things better’.⁵ The same disclaimer applies to electronic governance as to communications, science or business – electronic infrastructure can only enhance what is already there.

Therefore the basic issues involved in finding best practices are threefold:

- Agreeing upon the purposes or functions of the operation;
- Deciding on what basis to compare cases embodying those purposes or functions;
- Choosing which cases best illustrate the performance of the purposes or functions.

The problem with many technological applications, especially those that are driving current economic processes, is that the prospective benefits can be over-hyped and the potential detriments ignored or denied.⁶ How that manifests itself is that the first stage in the best practices process is *assumed* rather than *agreed upon*; the second stage receives minimal rather than adequate attention; and the choices in the third stage are biased to confirm the preferences of project sponsors or managers.

One of the most important lessons learned from systems analysis is that doing the *wrong thing* in a proficient manner still does not make it the *right thing*. The best practices process only works properly when the three basic issues are addressed.

Objectives and benchmarking

Like the technique of choosing exemplars (best practices), benchmarking was initially developed as a business tool and later transferred to political and non-profit organisations. One of the most extensively researched of the benchmarking ventures was that by the American Productivity and Quality Center in Houston, Texas. Their Open Standards Benchmarking Collaborative (OSBC) has done comparative studies of dozens of American and global firms.⁷

As Steve Wright, APQC's benchmarking guru, says, 'It's all about the business case'. What a business case provides is a rationale for adopting (or rejecting) procedures or proposals. Governments must develop an analogous rationale for their prospective procedures or proposals, namely a 'service case'. When responsible executive officers are asked to judge the merits of a prospective procedure or proposal, the classic question they pose, in one form or another, is 'Tell me why we should do this'. The answer to this question requires a presentation of the business case. Decision-makers in government will be asking an analogous question regarding the service case. Unless the reasons for e-governance are clear, investing in it could end up being a waste of time and resources. What kind and level of government service provisions are agreed upon? There will never be enough resources or personnel to do everything, so priorities must be set: document distribution, workflow co-ordination, public participation or whatever else is considered important.

Once these objectives are agreed upon, benchmarking will show how others are doing. Professor Richard Heeks of the Institute for Development Policy and Management at the University of Manchester released an i-government working paper on benchmarking in 2006; the first section in his checklist of questions concerns the purpose of benchmarking e-government.⁸ The paper explains that a comparative study will have both an internal and an external purpose. Heeks proposes two sets of questions: one for planning a benchmarking study and the other for evaluating the results.

Planning questions

1. What is the internal purpose of this benchmarking study?
2. What is the external purpose of this benchmarking study?
3. Who is the intended audience? Are other potential audiences likely to use the study?
4. What evidence of demand can be obtained from these audiences to feed back into its objectives?
5. What evidence of use can be obtained to feed back into subsequent studies? Could and should a user panel be created? (A user panel could keep track of the process and provide continuity of implementation.)

Evaluation questions

1. Is there any sense of the internal purpose of this benchmarking study?
2. Is there any sense of the external purpose of this benchmarking study?
3. Is the audience for the study clear?
4. Is there any evidence of demand for this study? Did the study provide what was wanted?
5. Is there any evidence of use of this study (i.e. were the results used)?

The content of a benchmarking study

The second group of questions in Heeks's paper concerns what to benchmark. This is where the paper touches most directly on the first stage of the best practices requirements, namely 'agreeing upon what purposes or functions need to be implemented' to provide better e-governance. Again there are two sets of questions, one for planning and one for evaluation.

Planning what to benchmark

1. Which components of e-government – government-to-government (G2G), government-to-business (G2B), government-to-citizen (G2C), government-to-non-profit organisations (G2N) – will you cover? Does this coverage reflect actual e-government usage, priorities and benefits? Will biases arise if some components are omitted?
2. Which levels of e-government (local, state/provincial, regional, national or international) will you cover? Does this coverage reflect actual e-government usage, priorities and benefits? Will biases arise if some levels are omitted?
3. Which channels of e-government (including m-government) will you cover? Does this coverage reflect actual e-government usage, priorities and benefits? Will biases arise if some channels are omitted?
4. Which value chain indicators of e-government will you cover? Does this coverage reflect actual e-government priorities and goals? Will biases arise if some indicators are omitted?
5. Will you undertake any correlations between your core e-government indicators and other indicators of demand or impact?
6. Will you use any composite indicators? If so, how will you ensure their rigour and transparency?
7. Will you use any calculated indicators? If so, how will you ensure their rigour and transparency?
8. Will you use any standard public sector indicators? If so, how will you ensure their rigour and transparency?

9. Will you use any indicators of change over time? If so, how will you ensure their rigour and transparency?
10. Will you measure e-government value-chain change processes (e.g. strategy, development, adoption)? If so, how will you ensure that they are measured rigorously and transparently?
11. Will you measure e-government's public value? If so, how will you ensure that this is measured rigorously and transparently?
12. Will you measure political legitimacy and support related to e-government? If so, how will you ensure that this is measured rigorously and transparently?⁹

Evaluating what was benchmarked

1. Which components of e-government (G2G, G2B, G2C, G2N) are covered? Does this coverage reflect actual e-government usage, priorities and benefits? Do biases arise because some components have been omitted?
2. Which levels of e-government (local, state/provincial, regional, national or international) are covered? Does this coverage reflect actual e-government usage, priorities and benefits? Do biases arise because some levels have been omitted?
3. Which channels of e-government (including m-government) are covered? Does this coverage reflect actual e-government usage, priorities and benefits? Do biases arise because some channels have been omitted?
4. Which value chain indicators of e-government are covered? Does this coverage reflect actual e-government priorities and goals? Do biases arise because some indicators have been omitted?
5. Have any correlations been undertaken between core e-government indicators and other indicators of demand or impact? Are these causally and statistically credible?
6. Are any composite indicators used? Are they rigorous and transparent?
7. Are any calculated indicators used? Are they rigorous and transparent?
8. Are any standard public sector indicators used? Are they rigorous and transparent?
9. Are any indicators of change over time used? Are they rigorous and transparent?
10. Is there any measurement of e-government value-chain change processes (e.g. strategy, development and adoption)? If so, are the measures used rigorous and transparent?
11. Is there any measurement of e-government's public value? If so, are the measures used rigorous and transparent?

12. Is there any measurement of political legitimacy and support related to e-government? If so, are the measures used rigorous and transparent?

The point of these questions is to ensure that the benchmarking is properly and usefully interpreted.

A third group of questions in Heeks's paper focuses on how to conduct the benchmarking process. If the study is to be conducted in a timely and cost-effective manner, a proficient methodology must be adopted for eliciting, storing and analysing the data.

Planning how to conduct benchmarking

1. How will the data gathering methods you use rate in terms of cost, value, comparability and quality?
2. How transparent and objective should your data gathering methods be?
3. Should survey methods be adopted in order to measure outputs and/or impacts and/or non-user groups?
4. Are there any opportunities for partnerships with other data gatherers?
5. Has the full potential of all different data gathering methods, including methods which are used less frequently, been considered?
6. Will all data gathering methods be used for appropriate purposes?
7. How will specific issues within the study (such as e-government components, levels, channels, benefits, inclusion and public value) be benchmarked, using appropriate methods?

Evaluating how the benchmarking was conducted

1. How do the data gathering methods used rate in terms of cost, value, comparability and quality?
2. How transparent and objective are the data gathering methods used?
3. Is output and/or impact measurement undertaken effectively, e.g. via a survey?
4. Are there other data gathering methods, including methods which are used less frequently, that could be used but have not been?
5. Have all data gathering methods been used for appropriate purposes?
6. Are specific issues within the study (such as e-government components, levels, channels, benefits, inclusion and public value) benchmarked using appropriate methods?

By using these groups of questions to plan, conduct and evaluate benchmarking studies, those who are considering either a major new initiative or an upgrade of existing service infrastructure will know who uses what methods, when and where they use them, and for how big an expenditure of resources. Since each benchmarking study will have followed the guidelines established by the objectives agreed upon among those who are proposing or sponsoring an initiative, they will be in a position to make informed decisions about what is feasible.

What benchmarking has revealed

The purpose of benchmarking appears to evolve, together with the changing nature of e-governance itself, as experience is accumulated.¹⁰ Among early adopters, the issue of primary importance is whether the organisation is in a state of readiness to handle an e-governance initiative. Benchmarking can be used to see how other early adopters assessed their own readiness, in terms of:

- **Awareness** of what e-governance will involve (changes of procedures, responsibilities, etc.)
- An inventory of existing **infrastructure** (what computers and cables already exist)
- The extent of the **digital divide** (who is computer and network literate and who is not)

For those organisations that achieve or already possess ‘readiness’, the next issue that benchmarking can help resolve is the availability of the technology and training necessary to implement e-governance. The availability issue has two aspects:

- Measuring the **maturity stage** of the organisation (to determine what infrastructure is actually needed); and
- Contracting with **suppliers** to acquire proper technology, at the right price and with adequate training, timely upgrades, etc.

After organisations have availed themselves of the infrastructure of e-governance, the next issue of concern is the rate and extent of uptake of the capabilities provided. Benchmarking can reveal how quickly or slowly other organisations have phased in the use of the new infrastructure, once it is installed. There are three dimensions of this issue:

- What is the organisational **demand** (what kind of work requires the new capabilities)?
- What is the group and individual **usage** (who are the leaders, and who the laggards)?
- What is the extent of the **use divide** (are there persistent patterns of use and non-use)?

The next major issue in e-governance adoption and use is that of impact – what are the outputs, outcomes and results of utilising e-governance infrastructure? Benchmarking

will show the effects that other adopters have had in relation to use of resources, accomplishment of goals and user satisfaction. Impact has the following indicators:

- **Efficiency** – is there a reduction of inputs for the same outputs and/or an increase of outputs for the same inputs?
- **Effectiveness** – does e-governance infrastructure deliver on its promises of cost-reduction and productivity improvement?
- **Equity** – do knowledge workers and service recipients experience acceptable outcomes and results from using e-governance infrastructure?

According to UNESCO, comparative studies in developing countries indicate that even the seven core elements of readiness for e-government are still under discussion.¹¹ These elements are as follows:

- data system infrastructure
- legal infrastructure
- institutional infrastructure
- human infrastructure
- technological infrastructure
- leadership and strategic thinking
- e-government drivers

In benchmarking studies by the European Commission (EC), however, governments were making readiness assessments by 2000, had moved into availability after 2001, were grappling with uptake by 2003 and were measuring impacts by 2004.¹²

UNESCO also refers enquiries to the ongoing studies of Professor Darrell M. West of the Center for Public Policy at Brown University, Rhode Island.¹³ Professor West has developed an index of e-government performance that blends a variety of service delivery measures. He applies the index to a long list of countries around the globe and updates the study yearly. He also clusters performance by region, thereby providing a very thorough review of e-government trends. In some cases, data from two consecutive years are listed so that changes can be compared.

All the above benchmarking studies can show decision-makers the extent of e-governance.

Identifying exemplary cases

When the spectrum of e-governance practice is examined, it is possible to identify exemplary cases in the various areas of electronic infrastructure that are typically involved in providing better service delivery. We will look at a sample of these cases in

this section. Because the concept of best practice originated in business circles, and because business models are now widely advocated and adopted to solve a variety of social problems, most governments rhetorically subscribe to the idea of using whatever practices in e-governance have been judged to be 'best' by some measure. However, an internet search of governments that list their best practices shows a wide variety of arrangements. The two most frequently used criteria were 'cost-effectiveness' and 'service-expansiveness'. Rarely, if ever, were standards set in order to provide a guide as to how to identify best practices. Occasionally, however, such standards were proposed.

The website of the US **General Services Administration (GSA)** has an e-government best practices webpage that contains a list of substantive objectives.¹⁴ It suggests that a baseline e-government initiative should have:

- A clear mandate
- Budget and resource allocation
- Committed project management
- Sound planning and clear goals
- External validation
- A guaranteed customer base

The **European Commission** prefers the term 'good practices' to distinguish its approach from both the business perspective and its American counterparts. However, the EC has a list of guidelines, which are procedural objectives.¹⁵ Its Good Practice Framework proposes to:

- Collect examples of well-defined e-government cases;
- Make these examples available for those involved in e-government by means of an intelligent knowledge database;
- Offer expert know-how on general or special e-government features and provide easy access to existing communities and centres of expertise;
- Support the sustainable transfer of good practices and learning experiences in an easy and helpful way.

The **Commonwealth Centre for e-Governance** has developed a set of best practices on e-governance, and workshops have been conducted throughout the Commonwealth to assist nations, states and local governments in formulating effective strategies.¹⁶

The CCEG lists best practices as follows:

1. The application of e-governance best practices involves developing a workable template to determine requirements for successful e-governance, including:
 - (a) Assessment of what is needed for a particular situation;

- (b) Principles and characteristics of strong leadership to make e-governance programmes go forward in any jurisdiction;
 - (c) Assessment of the financial requirements for the initiation and completion of projects;
 - (d) Determining sources of funding for projects from international organisations such as the World Bank;
 - (e) Assessment of the technical and policy expertise needed to evolve an e-governance strategy;
 - (f) State of the technology available or not available in a specific jurisdiction;
 - (g) Assessment of what technologies can be used in different jurisdictions;
 - (h) The availability of the personnel needed to fulfil an e-governance programme;
 - (i) Training of officials to apply best practices for information and communication technology (ICT) development and delivery.
2. The formulation of an overall strategy and appropriate policies in relation to ICT in an organisation, i.e. taking into account what type of organisation it is – public or private sector, small, medium or large – or whether it is a developed, medium developed or developing country.
 3. Asking what governance issues, policy and training are needed to effectively move forward in an ICT environment.
 4. The development of specific policies and approaches to utilise the disciplines of records, information, change and knowledge management.
 5. Engaging the top echelons of political and public service and private sector organisations, whether they are commercial, not-for-profit, civil society, non-governmental or religious bodies.
 6. Recognition of the fact that leadership skills are paramount.
 7. The provision of the specific personnel and financial resources necessary to achieve success.

The overlap in these sets of best practices demonstrates a global conceptual convergence.

Soros Foundation best practices

There is another aspect of e-governance to which best practices can apply, namely the way that public users of e-governance should be treated. In the first book to lay out a process re-engineering agenda for government, Osborne and Gaebler (1993: 187) assess public administrative reforms in this way: *‘Traditional public systems – even those that put resources in people’s hands – are designed for the convenience of administrators and service providers, not customers’*.

This raises two issues: who should administrative arrangements serve and what is the best framework for service to the public?

The implication is that the needs of the general public should be the primary focus of service, and that the way to ensure that this happens is to think of the public as customers.

For a number of years now, the **Soros Foundation** has been assisting developing countries to acquire and make use of various aspects of e-governance, particularly through the Soros Internet Program. Those who designed and implemented this programme developed a set of best practices based on prioritising public responsiveness and customer service (Peizer, 2006). The best practices identified by the programme are:

1. Treat your ICT users like customers.
2. Pay attention to who the real ICT users are and what they need, not what you think they need.
3. Understand the context in which ICT users operate, as well as why and how they make their decisions. Always see things from their perspective.
4. Listen to what ICT users want and give them everything that is realistically possible. Provide an alternative solution for what is not possible.
5. Explain technology and problem resolutions in non-technical language; a simple explanation goes a long way towards creating trust.
6. For users interested in learning more about what is going on behind the technology, rather than just fixing their problem, provide more background knowledge and enlist them in helping you to achieve your objectives.
7. Never promise what you cannot reasonably deliver, and always deliver what you promise within deadlines. If delivery is delayed for any reason, be sure you inform your customers beforehand (delays are often foreseeable).
8. Plan, plan, and plan again; assume the worst and plan accordingly and you will not come up short if disaster does strike. You should always have an alternative plan.
9. Do not be afraid to make decisions – you can fix them if they are wrong. If you have established credibility by following the other steps, the ICT users you support will be understanding and allow for a limited number of errors. If you have planned well, you will always have alternatives at hand to correct the mistakes quickly.
10. Always be as straightforward and transparent as possible with your ICT users.
11. You can catch more flies with honey than with salt. Be outgoing, pleasant, forthcoming and transparent with the users you serve.
12. When it comes to software, the basic rule for software development is that if you can buy and customise it, do not build it from scratch. This is particularly true in the non-profit environment where programme talent may be limited by salary issues.

Examples of best practices

The **Florida Department of Health** successfully designed and implemented a better performance management system for making use of new health research findings to develop better public health policies.¹⁷ This is an example of e-governance/e-government in the e-administration area. The lessons learned from this project were eventually reported as best practices as follows:

Keys to success

1. Utilise partnerships in the planning, development and implementation processes.
2. Recognise that education and training are critical in developing equal levels of sophistication throughout the organisation.
3. Clearly identify which measures are used at what level of the organisation to track performance.

Keys to sustainability

1. Leadership support.
2. Recognise it takes time and it evolves.
3. Performance improvement needs to be part of everyday life, not an occasional activity.
4. Create a balance of measures (outputs, inputs and processes).

These points are all consistent with the major lesson learned: the value of collaboration.

The **Institute for Citizen-Centered Service** in Toronto, Canada has conducted a series of surveys of the extent to which the public and business are satisfied with the quality and quantity of government services.¹⁸ The best practices it has identified refer to the conditions that produce user satisfaction. The Institute found that the drivers of satisfaction vary between channels of delivery.

Drivers of satisfaction by channel		
Face-to-face	Telephone	Internet
Timeliness	Timeliness	Ease of navigation
Courtesy/extra mile*	Knowledge/competence	Outcome
Knowledge/competence	Extra mile*	Visual appeal
Fairness	Outcome	Informative
Outcome	Fast	
*Going the extra mile refers to providing maximum helpfulness		

Conclusion

There are a number of aspects of best practices for e-governance/e-government. In terms of the projects for designing and implementing e-governance, best practices cover both the planning of the project and the operation of the installed system. In relation to planning, the many best practices from a wide range of experiences recommend that the first steps are to develop a clear sense of purpose and clearly delineate objectives. The next steps include involving all the stakeholders and establishing good relations with suppliers. The final steps involve realistic budgeting and a willingness to enter into partnerships to reduce costs and improve reliability.

Implementation best practices consist of:

- Collaborative procedures; and
- Flexible tactics.

Many of the original proposals for implementation will need to be modified in the light of experience in particular circumstances. Costs or resistance may increase beyond expectations; technologies may produce savings or sponsors may provide additional funding. Usually there are a number of changes, and they vary to such an extent that they are not always anticipated in advance. When this happens, the best plan is to fall back on the original objectives and purposes and be willing to adopt whatever operational options are feasible.

When it comes to operating e-governance/e-government, best practices identify two sets of users, both of whom can be thought of as customers: internal customers (officials and staff) and external customers (the general public and businesses). E-governance project sponsors must collaborate with internal customers to ensure that they are fully motivated and to inspire service leadership. In turn, internal customers must collaborate with external customers to ensure that they choose to take up the available services and that they are satisfied with the services they use.

E-Governance: An International Perspective

The technology platform

E-governance is a spin-off from e-commerce. In many respects, the modalities and functions that were initially developed in e-commerce have subsequently been transferred to government, albeit in forms that are suitable to public, rather than corporate, administration.

In both e-commerce and e-governance, the 'electronic' component is provided by a combination of computers and communications networks. The basis for the computing component has been the capabilities of hardware and software. In the case of communications networks, it was necessary for data transfer protocols (http, ftp, etc.) to be added to hardware and software to produce e-mail and the world wide web.

This electronic platform provides the capability to make governance more effective and efficient, through the use of computers and communications. In e-commerce, the internet was first used for advertising and to distribute documentation more rapidly, widely and cheaply. The initial exercises in e-governance were essentially the same. Government departments posted publicly available documents on the web to reduce printing and mailing costs.

Electronic functionality

Commercially, e-mail was first used for internal co-ordination of operations and customer feedback. Government departments used it in the same way. Colleagues used e-mail to facilitate workflow and co-ordinate projects. E-mail links were also listed on internet documents so that the public could follow up with questions or suggestions about the government materials they were accessing and downloading.

The next phase of e-commerce involved selling over the internet by taking orders for products via electronic forms. Payments for these transactions were enabled by the development of secure credit card processing arrangements. Tangible goods could be shipped to the purchaser by mail or courier, and intangible goods (software and electronic books or reports) could be transmitted back as soon as the transaction was confirmed. Governments followed suit by collecting data via electronic forms (e.g. the census), accepting payments of fines and fees with card transactions, and selling publications and data in the same way as in e-commerce.

Most businesses now have websites, as do most government departments. The latest developments have been to engage customers or citizens in consultations, either through some form of market research for companies or policy research for governments. Just as increasing numbers of customers can make purchases electronically, some governments are also making electronic voting possible. In both business and government, more and more co-ordination and communication is being conducted electronically and then stored and retrieved in the same way. Since the technology is continually evolving, the need for updating and expansion requires ongoing investment and plans for change management.

E-governance in the Commonwealth

The examples of Mauritius, India, the United Kingdom and Canada illustrate how e-governance has been implemented within the Commonwealth.

Mauritius is an island in the Indian Ocean with a small population and a thriving tourist industry. The government saw an opportunity to invest in an e-governance infrastructure, both to acquire the benefits of e-government services for Mauritius and to act as an outsourcing supplier of governmental information-processing services via telecommunications links for other African nations. The Commonwealth Secretariat assisted Mauritius to develop a plan to finance, build and deploy the technology and acquire the training necessary for this project.

A consultant¹⁹ from the Commonwealth Secretariat went to Mauritius to assist its government in developing:

1. An e-governance audit – to determine the extent of electronic infrastructure and trained personnel;
2. An e-governance needs analysis – to estimate what additional equipment and training would be needed to enhance e-governance capabilities; and
3. An e-governance plan of action – to specify how much would be spent, on what priorities and over what time period, in order to accomplish the e-governance objectives the government had committed to.

The implementation phase is ongoing. The Government of Mauritius website has posted the following mission statement for public viewing:²⁰

A worldwide revolution in information and communications technologies is currently occurring. The Internet, the personal computer, the mobile phone and other modern communication devices are fundamentally changing our lives affecting the way we work, learn and interact.

Traditionally, interactions between a citizen or business and a Government agency used to take place in Government offices and with the emergence of information and communica-

tion technologies, it is possible to service citizens more efficiently and practically through a service kiosk or a personal computer, for instance.

E-government refers to the use by Government agencies of information technologies (such as Wide Area Networks, the Internet and mobile computing) to transform relations with citizens, businesses, and other arms of government, for:

- Better delivery of Government services to citizens;
- Improved interactions with business and industry;
- Citizen empowerment through access to information; and
- More efficient government management.

The resulting benefits can be greater convenience, increased transparency, revenue growth, cost reductions and less corruption.

E-government encompasses the electronic delivery of quality services to the citizens and the business community while at the same time facilitating inter- and intra-Governmental exchange of information in an effective and efficient manner. Analogous to e-commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), e-Government aims to make the interaction between Government and citizens (G2C), Government and business enterprises (G2B), and inter-agency relationships (G2G) more friendly, convenient, transparent, and cost-effective.

E-government presents Mauritius with tremendous opportunities to move forward in the twenty-first century with higher quality and cost-effective Government services and gives rise to a better relationship between Mauritian citizens and the Government.

In a report to the Government of Mauritius, the President of the Republic referred to some of the activities undertaken to move the e-government project forward. One part of this initiative is the assignment to the Citizen Advice Bureau of the responsibility of liaising with the public to ensure that they can access e-government services. The President reported as follows:

The role and functions of the Citizen Advice Bureau will be revamped so that along with greater e-government services available to our citizens, greater access to government information and administrative services are available in all our towns and villages.²¹

The President also drew attention to efforts to get greater acceptance and use of Mauritius's electronic infrastructure by taking steps to create public trust in both e-government and e-commerce. As the President indicated, the steps necessary to achieve this goal will involve technical protocols as well as changes in behaviour:

Government will encourage the setting up of a National Internet Exchange Point to enable peering of local ISPs and to ensure an efficient usage of Internet bandwidth. A National Information Security Policy based on EU and PIPEDAT (North America) standards will

*be defined to build and sustain trust for e-government and e-commerce applications as well as to develop our ICT industry. A new costing model will be introduced with a view to reducing prices of telecommunication services at the retail level for the benefit of consumers. The introduction of new technologies including wireless technology (WiFi) will be encouraged to enable productivity gains. E-commerce will be promoted to create new opportunities and employment.*²²

Regarding effective use of the electronic infrastructure, the President spoke of the ongoing training programmes established to ensure proficiency, especially in ministries and institutions that have been prioritised to develop e-government capabilities:

*Government will review the scope of ICTA, NCB and the National Proficiency Programme to ensure optimal performance. The establishment of e-government will be accelerated and priority given to its introduction in some Ministries and Institutions. The role and scope of Central Informatics Bureau and Central Information Systems Division will be reviewed.*²³

India is a populous and thriving country, with a wide spectrum of income distribution and economic development. The state and national governments have moved quickly into e-governance because skills and technologies were readily available. Much of the public, however, found itself on the downside of the digital divide because poverty precluded their acquiring the home computers and communications facilities needed to access government e-services. Therefore, many of India's e-governance plans have involved designing and deploying community-based technologies that can be operated and shared at far less cost than would be incurred by attempting to connect every household to the internet. These projects, combined with economic development projects that use India's e-governance and e-commerce infrastructures, are transforming India into a world leader in community informatics.

This e-governance leadership in India manifests itself in two ways. Expertise in the theory of e-governance is developing rapidly.²⁴ Schools of business administration and of public policy throughout India are creating and teaching courses on both the Indian context of ongoing projects and the international lessons that can be learned from tracking e-governance experience elsewhere. Secondly, the national government and state and community administrations are moving ahead with implementing e-governance plans. Recent reports on some of these projects indicate that significant progress is being made in e-governance enhancement; that similar efforts from elsewhere are being watched; and that the lessons learned from both the Indian and other countries' experience are being used to improve performance and revise plans.²⁵

The **United Kingdom** has been at the forefront of e-governance applications. The early phases of document distribution, workflow co-ordination and service delivery have been accomplished effectively enough to become the basis for many Commonwealth best practices. However, attempts to deal with the 'democratic deficit' have been con-

siderably more challenging. The labour and social activism in the UK's recent past has inspired the expectation of another phase in e-governance, enabling public participation in government deliberations. The in-house support for this has been met by the adoption of evidence-based policy development, but public consultations that satisfy the participants have been much more difficult to organise. Continuing efforts at 'out-reach' are still being met with some scepticism, which will probably only be overcome when enough experience has been gained to engender trust on both sides.

Many communities in the UK are extending e-governance to include e-democracy. As a result, toolkits are being designed and deployed that will enable local councils and their constituents to engage in dialogue and tackle issues.²⁶ Both council members and a sample of constituents are surveyed to ascertain their experience with e-governance to date, and what additional features and capabilities they believe could make online consultation more effective. On the basis of this information, a team of experienced technicians develops a prototype which is then field-tested and modified until it gives users acceptable performance. These projects are ongoing and will result in successive versions of e-democracy toolkits.

The other exemplary practice in the UK is the comparative analysis of different projects at different levels of government, so that systemic lessons can be learned for ongoing improvement on the trade-off between relying on standardised methods as against management experience.²⁷ Performance data are gathered and stored in a repository so that benchmarking questions can be posed and answered using the available information. This enables performance measures to be developed for the various aspects of e-governance (equipment costs, network deployment, personnel complements, training policies, etc.), so that efforts at improvement can be targeted where they are needed, rather than just pursued in a generalised sense.

The biggest e-governance challenge for **Canada** has been the public's desire for a single window of access to all government electronic services, which is complicated by the country's federal constitution. Within government, this problem has been manifested by the way in which various departments and agencies have mounted their own service formats with their own technological preferences. Eventually, a common layout and standardised service provision were required for all government websites through such projects as the federal government's Government On-Line. The other troublesome aspect of the 'single window of access' has been between governments. Municipalities, provinces, territories, and federal departments and agencies have adopted differing philosophies and styles of e-governance operations. There are many different ways of organising information and navigating websites, and in many cases collaboration between governments has been premised on the assumption that agreement will only be possible if all participants' needs are met. Services Canada came online in 2006. The website is a one-stop approach to a plethora of services and programmes for the citizen. It covers many different aspects of the life cycle. The site is easy to navigate and leads

to offline contacts if people prefer to phone Services Canada or visit one of its centres, which are located all over the country.²⁸

Canada's Government On-Line project has also been the subject of a number of in-depth studies, including research papers and courses offered by the authors.²⁹ Professor Jeffrey Roy from the University of Ottawa's Institute on Governance has produced a comprehensive history of the project, together with a consideration of some of its implications.³⁰ His analysis shows that the plans and pronouncements regarding Government On-Line were elaborate and impressive, but their implementation was truncated by under-funding and lack of support. In 2007, a team of researchers from Canada, the UK and the USA investigated the internal dimensions of Government On-Line and compared it with lessons that could be learned from projects in other countries.³¹ The study concluded that the shortcomings of the Government On-Line project were also exhibited by the experience of the UK and USA, and that on a comparative basis Canada did as well as, or better than, these two countries.

What next for e-governance in the Commonwealth?

The next challenges for e-governance within the Commonwealth will be similar to those faced by all electronic networks. Perhaps the most important characteristic of future developments is that they will diverge significantly from the patterns of the past, as e-governance has grown into a significant global discipline.

There seems to be a growing expectation among members of the politically interested public that the culmination of trends in e-governance will be fully-fledged participatory democracy. People will want to be consulted and involved in policy development and regulatory specification in whichever areas they are most concerned about. This is the long-term implication of ubiquitous networks and the concept of 'citizens as partners'. Both elected and appointed officials will still play a lead role in governance, but the public will want evidence that their views are solicited, respected and factored into the governance process.

Another major role of e-governance will continue to be service delivery. There are contradictory requirements in this area. Service provisions depend upon individual eligibility – payment of taxes, fees, fines, etc., and authorisation and/or distribution of particular benefits. Access to most services can be customised. Such services can be based on specific personal profiles for every user. However, the public will only find this acceptable if files and databanks are not cross-referenced or used to enforce policies that are extraneous to the purpose for which the data are collected. The balance between customisation and confidentiality will have to be carefully crafted and continuously revised to reflect the changing nuances of public opinion. The issue of information sharing raises many questions because of the implications of how people's personal information is stored, shared and used in the vast databanks compiled by government

and the corporate world. Privacy is an important right, given the growth of the internet and the amassing of personal information for many different purposes. Citizens want to be assured that this information is not being shared or abused in any way.

Ongoing challenges for Commonwealth e-governance

The hidden side of e-governance will continue to involve the co-ordination of governmental internal operations. In many cases there are various idiosyncratic versions of the same functional processes, with the only justification for this diversity being the historical variability of different departments and agencies. The workflow is often too segmented, resulting in too many procedures, authorisations and personnel required for what could be simplified, faster and less costly activities. Those responsible for internal e-governance will continue to be pressed to squeeze additional efficiencies and expenditures out of these processes, partly so that the funds saved can be re-allocated to support the expanded public side of e-governance.

The most controversial e-governance issue of all, at least to date, is the trade-off between national security needs and expectations of open government. Not surprisingly, national security practitioners base information sharing on the ‘need to know’ concept. Equally obviously, advocates of open government talk about ‘the public’s right to know’. If these two choices are placed along one dimension, the other dimension for this issue would dichotomise political acceptability versus constitutional constraints. Together, these two dimensions create a matrix with four types of policy options. Some sectors of the public will always want more information and some sectors of the security establishment will always be able to rationalise why they think less information should be provided. Every choice requires political judgment: there are no hard and fast rules.

E-governance trade-offs between national security v. open government		BASIS OF INFORMATION SHARING	
		The need to know	The right to know
POLICY RATIONALES	Political acceptability		
	Constitutional constraints		

Other examples of e-governance

The World Bank invests in development projects in many countries around the world. One of the hurdles that developing countries and the World Bank have encountered is the presence of what have been labelled ‘corrupt practices’. Such practices have two dominant features: *bribery*, to facilitate authorisation, regulatory approval or timely action; and *secrecy*, to cover this up. In response to these hurdles, the World Bank has proposed two counter-measures: (i) laws and regulations prohibiting bribery and creating

protocols which apply to development projects in particular, and commerce in general; and (ii) a policy of transparency to make scrutiny and accountability possible. The chosen instrument for these countermeasures against corrupt practices is e-governance. Therefore, in addition to the other development projects which the World Bank helps to fund, it is also recommending that e-governance infrastructure should be put in place, in both commercial and political systems.

Reports on these efforts confirm that electronic governance is indeed being adopted, and that it is having the desired effect.³² The obstacles that can be expected during the implementation of e-governance are under discussion, together with policies to address these barriers. The following are the guidelines that are being used as e-governance projects go forward.

Workplan for the implementation of e-government projects

Once the vision and priorities have been established, a detailed work plan helps agencies and officials to implement e-government projects. Some of the key elements on which the work plan should focus are:

- **Content development** – including development of applications, local language interfaces and e-learning materials;
- **Competency building** – training of personnel for human resource development must be implemented at all levels;
- **Connectivity** – intranet/internet connections must be established across related agencies;
- **Cyber laws** – providing a legal framework to support the objectives of e-government policies;
- **Citizen interfaces** – establishing a delivery channel to ensure accessibility and affordability of e-government by citizens;
- **Capital** – identifying revenue sources to help achieve a financial equilibrium.

The **Soros Foundation**, through its internet programme projects, has provided assistance for many internet-enabled activities in various countries, in some cases through NGOs and in others with the participation of governments.³³ Some of the projects that have included working with governments to provide e-governance are listed below.

The Baltic countries – Estonia, Latvia and Lithuania – have all hosted Soros Foundation projects. The project in **Estonia** is an example of extending e-governance in the

e-services dimension.³⁴ It receives joint funding from the Soros Foundation, the Estonian Information Technology Fund and the Nordic Council of Ministers. The project includes networking for universities and schools, libraries, medical facilities and cultural institutions.

Mongolia's Internet Programme Project is an example of extending e-governance in the e-administration dimension.³⁵ After providing connectivity for universities and a walk-in dial-up centre, the Mongolian Parliament (the Great Hural) and its Secretariat were connected to the internet and training was provided for parliamentarians. Subsequently, connectivity was extended to schools and rural areas, and steps were taken to introduce effective e-commerce and to train publishers and designers to work in electronic media.

The Soros Foundation Project for **Slovakia** includes an example of extending e-governance to the e-democracy dimension.³⁶ After networking health facilities, schools and the offices of the Ministry of the Environment, a civic network education component was added, which allows people to go online and discuss issues relevant to Slovakian society.

The **OECD** has been advocating e-governance for a number of years, with a similar perspective to that of the World Bank.³⁷ The OECD does research on e-governance that is sponsored by member countries and then disseminated to member governments. Many of its reports are available free on the OECD website and others are published and available for sale. Conferences and seminars have been held throughout OECD member countries to discuss research reports and develop policies and plans to use the findings of the research in commerce and government. Governments then report back on the progress they have made in implementing e-governance, and this forms the basis for another round of research, dissemination, consensus and collaboration on using the lessons learned to further improve e-governance systems.

The initial three national e-government reviews have now been completed and posted on the project website. The reviews cover, in order of appearance, Finland, Mexico and Norway.³⁸ A brief summary of each is given below.

Norway's report (March 2005) provides an in-depth analysis of both successes and the challenges still faced in implementing e-governance. The report is the first 'total system perspective' on e-governance in Norway, and constitutes an overview which has already enabled the government to take more co-ordinated action and commit to even further improvements with each continuing step in the programme. The challenges which Norway now faces include the need to more effectively communicate high-level policy to lower-level government organisations; to loosen budgetary rules so that more collaboration can occur; and to adopt a funding formula which recognises the funding contributions and constraints of particular agencies.

Mexico's report (March 2005) refers to the challenges of integrating e-governance

capabilities with other public policy reform initiatives. The occurrence of developments on both fronts poses technical and training challenges which are being addressed, but continue to need attention. Another challenge Mexico faces is one that is typical of countries that tackle technical projects, namely that of re-use. Work should be re-used to save money and avoid spending time in 're-inventing the wheel'; this is also a process that takes time to learn and internalise.

The report from **Finland** (December 2003) details e-governance challenges in relation to strengthening internal governance structures, managing public-private partnerships, improving e-government planning, and monitoring and evaluating results. Because Finland pioneered many ICT applications, there was a greater likelihood of its making mistakes. The result has been a slower take-off of e-governance capabilities and accomplishments, but experience is finally beginning to produce useful lessons, and this should result in a faster pace of execution in future.

E-Governance in Malta

The Government of Malta has had considerable success in planning and implementing e-governance/e-government. In an announcement on the Government of Malta website on 9 October 2006, reference is made to a Deloitte Consulting study that extends the return on investment (ROI) of government investment in technology to include benefits to citizens and businesses, as well as to public sector organisations. This study confirms the approach that Malta has taken all along, namely that e-governance brings advantages to all sectors of society. This chapter will outline Malta's e-governance plans and the challenges Malta faces on the basis of material taken from the Government of Malta website and from government officials.

Malta's framework³⁹

Malta's mission to become a first-class information society is developing constantly and successfully. Its initial principles and objectives were set out in 2000 and are still relevant today. Its aims are to:

1. Deliver a first-class public service;
2. Increase citizen participation in government decision-making;
3. Streamline public services and realise efficiency gains.

The former Ministry for Justice and Local Government, now the Ministry for Investment, Industry and Information Technology, the champion and leader of the Malta's e-government programme, has drawn up an ambitious programme to ensure the timely implementation of these objectives. Both public and private entities are engaged in the initiative, which will create a unique synergy that will put Malta on the forefront of e-government in the global ICT scenario.

Government is actively pursuing the attainment of the e-government initiative in Malta – an exciting opportunity that demonstrates to Maltese citizens and businesses the tangible benefits that ICT can offer to their quality of life. Malta is showing that new technologies can streamline public administration and promote improvement in the business community.

The initiative is being addressed through a number of interlinked parallel implementation streams. Primarily, government is pursuing public-private partnerships with the local ICT sector with the aim of establishing long-term trust-based relationships for the design and implementation of a range of electronic services. The core operation is being developed by the government's IT agency, MITTS Ltd, which provides a com-

mon platform and launch pad for all services. The approach, supported by the Central Information Management Unit (CIMU), seeks to achieve world-class seamless e-government, with a cost-effective and efficient re-engineering of existing services.

The programme is an important milestone in the Government of Malta's public administration reform programme which began in 1987; today this is being taken forward through the introduction of electronic practices. The government has invested heavily in the use of ICT and seeks to invest further in the cultivation of a true information society and economy. Malta is already seeing the benefits of this and expects to gain exponentially in the coming years.

The programme currently boasts of a large number of electronic services being launched across government, of which over 15 are electronic transaction-based services such as applications for birth, marriage and death certificates, the submission and payment of income tax returns and examination application forms. The promotion of electronic services is seen as a positive approach to meeting citizens' and businesses' expectations and perceptions of government in a modern world. In striving to create a new channel of communications in an ever more technology-dependent world, the government is making an effort to be more inclusive and receptive to society's needs.

The implementation of the government portal, Gov.mt, marked yet another significant milestone. Gov.mt is the principal point of entry to all government information and services. The portal will re-dimension the way the public perceives government from a silo-based structure to a service-cluster approach that cuts across the organisational boundaries that exist in the public sector. The introduction of service clusters adds further value, and traditional services are now presented in a personal and easy to understand structure.

To complement this, government is also putting in place a number of essential services – often referred to as shared components – that will service the entire e-government programme.

Some of the most prominent shared components are:

- The electronic payment gateway that enables government to receive payments in a secure electronic form via the internet, making it technologically possible to provide services which require secure online payment;
- The registration and authentication mechanism that will provide an accessible and secure digital signature mechanism enabling citizens to identify themselves to government when conducting online transactions. The service will be secure enough to be a true online electronic identity, in line with the electronic signatures act;
- The Central Data Repository – a repository for personal information which will act as a central reference point for government services, using only one information location;

- The m-government service – a unique development in terms of technology and approach. M-government allows electronic services to use mobile phones as an additional service delivery channel, as well as other conventional channels and mediums. Malta's take-up in terms of mobile phones (74 per cent of the population) facilitates the use of such a channel, and government is promoting the development of a number of push, pull and authentication-based m-government services, both online and distinct from the other electronic services.

Government has also recognised that off-the-counter services are here to stay, and in this regard and on another parallel policy stream, it is working on the implementation of local e-government, that is, the delivery of e-government services through the front offices of all the local councils in the country. This initiative will be the principal contributor towards the eradication of the digital divide, bringing services closer to the community and enabling cost savings by redistributing department front offices to existing offices that already serve the public.

The principles of Malta's e-government programme⁴⁰

The e-government vision and strategy envisages a comprehensive multi-pronged programme that requires the mobilisation of a critical mass in relation to initiatives that need to be undertaken at a national level, as well as within and across government. The successful attainment of the e-government vision depends on the transformation of Malta into an advanced information society. Yet within the unique characteristics of the social and economy milieu of the Maltese Islands, the drive by government to establish e-government will constitute the primary catalytic pressure that will effect this transformation.

The following are the key principles of the e-government programme:

- E-government services should be easy to access in terms of speed, entry points and multi-channel access;
- There must be universality of access to e-government services, which necessitates ensuring that people with special needs, or who have affordability or literacy problems, are able to access the services with relative ease, thus ensuring total social inclusion;
- Universality of access will be ensured by the delivery of e-government services across multiple channels, including conventional channels;
- E-government services must be easy to use;
- The service must be inexpensive in relation to average disposable incomes and therefore be widely affordable;
- The service must be secure in terms of authentication and fraud prevention, and prevention of unauthorised hacking must be guaranteed;

- The individual privacy of users must be guaranteed;
- Any profiling data submitted by users voluntarily, in order to obtain better services from the government, must not be used without their prior consent – thereby allowing for the applications of the super-registration principle with the user's consent, to allow for profiling for unproved service delivery;
- E-government services are based on the concept of no-stop service, as against one-stop service, in that a transaction triggers activity within the episode cycle that constitutes that service;
- Services will be focused on customer needs, rather than government requirements;
- Users will be able to access the services at all times and every day (24x7 access);
- Assistance to users of the services will be available at all times;
- E-government services will be faster, more efficient and have a higher quality than conventional services, and service quality parameters will be established and made public;
- E-government services will be more economic and cost effective than conventional services, thereby ensuring more efficient use of taxpayers' money;
- E-government services will be consistent in terms of content and quality across different delivery channels;
- E-government services will be regulated and facilitated by the appropriate legislative framework;
- Mechanisms for feedback and redress will be available to all users in respect of all services;
- Feedback mechanisms will be used for the engendering of electronic democracy;
- E-government will enable the 'seamless' provision of public services – transcending the public service, the public sector and public enterprises;
- E-government will not consist simply of the placing online of conventional services, but rather the virtualisation of services across policy areas to attain service integration and service rationalisation;
- The architecture and technology adopted for the implementation of e-services will be scalable and common across delivery channels wherever possible, and will also entail minimal disruption to current back-office processes;
- New back-office information systems will be designed with a view to providing electronic services to the public;
- E-services will pass through one central point or portal;

- All services and information on the portal will have a corporate owner that will be responsible for maintaining the currency, quality and other standards of the area for which it is responsible;
- All services shall be available at all times without fail;
- There shall be one distinct corporate image of government as the provider of e-services.

Malta's e-government technical architecture⁴¹

In order to ensure a successful multi-phased implementation over time the e-government technical architecture framework must be robust, flexible, expandable and, as far as possible, technology and vendor neutral. To mitigate the risk of becoming locked in to a single-vendor-based solution, the technical and systems architecture is to be designed, developed and implemented on open, industry-accepted standards, and reflect the current business and user requirements of the Government of Malta. Consequently, the architecture is envisaged as being component based, modular, dependent on a client/server communications model and sufficiently flexible to accommodate rapidly changing technologies and requirements.

The e-government technical architecture is conceptualised on a three-tier based framework.

The portal architecture is to be:

- Able to cope with a variety of channels
- Capable of providing access to all government back-end services from all delivery channels
- Structured to accommodate various back-office requirements
- Based on proven, widely available and used technology
- Scalable, so that it can accommodate growing and changing usage requirements
- Structured to integrate new delivery channels
- Equipped to handle digital authorisation
- Capable of handling unpredictable volumes of traffic

The following types of interaction will be supported:

1. Citizen-to-government, for which the main paradigm may be *html* and forms. These will be converted by the e-public service portal to *xml*- and *xsl*-based interactions for e-filing, e-lookup, expectation management, etc.
2. Business-to-government, for which the main paradigm may be *xml* and *xsl* data packages and file transfer protocols.

3. Government-to-business, for which the main paradigm may be *xml* and *xsl* data packages and file transfer protocols.

The deployment of the three-tier architectural framework will be directed to leverage the following:

- A reduction in the cost, time and complexity of implementing distributed client-server applications by eliminating customised integration codes at network and operating system level;
- The means to allow applications, services and components implemented in different systems and across different platforms to transparently invoke, control and interact with each other;
- The attainment of location-independent application naming, capability registration, activation and dispatching of requests or data achieved through an access method which is common across all platforms;
- The isolation of clients and servers from changes in network topology and protocols;
- The encapsulation of existing legacy applications and data without modifying the source code, to allow the integration of existing applications into new architectures;
- The evolution towards a component-based development that allows existing software to be widely retained and simplifies the integration of new software where this is required.

The citizen (or front-end) element will provide the medium for connectivity by customers to the e-government portal. In the short term, it is believed that these elements will use common web interface technologies, but as access media develops in the longer term it should be possible to incorporate technology without affecting the service software. This will be specific to any one individual delivery channel within the citizen element of the architecture framework. Hence, the system will have the capacity to provide additional access channels without technological constraint or implications for the service delivery architecture.

The middle tier is to house the middleware and will provide the common infrastructure to support the transportation of messages to obtain the appropriate level of authentication and access the services or information. Common information-based services will also be housed within the middle tier, including common search facilities which will provide information across the range of services contained within the portal service set. Other components could include, for example, a feed mechanism identifying the next appropriate service or other appropriate delivery channels for the customer based on sample usage. Data protection auditing should also be provided in the middle tier to ensure that information relating to specific services is sent only to the appropriate department and that the rights of the individual are safeguarded.

The government element (or back-end) should provide for connectivity from the departmental systems, including legacy systems, to the transaction management system hosted within the middleware layer, through appropriate interface systems. This layer will ring-fence existing systems. Its isolation layer should allow ongoing development of the departmental systems without a knock-on development requirement for the portal architecture.

Malta's e-government progress to date⁴²

During 2000 and 2001, a substantial amount of progress was registered on all fronts, leading to the attainment of e-government in Malta. The following are the highlights:

1. Advances in the telecoms sector

Substantial government and private investment in the telecoms infrastructure resulted in full territorial coverage by the fibre optic and cable network. This means that 96 per cent of households now have a fixed digital telephone line which can be used to access the internet. The advances have also enabled the widespread availability of ADSL and cable internet. The mobile telephony market has also experienced substantial growth, with more than 65 per cent of the population owning a mobile telephone.

2. The legislative framework

Traditional legislation was inadequate to support both government and commercial settings. The Government of Malta published a white paper on the legislative framework, and following a wide-spread consultation Parliament enacted three pieces of legislation: the Electronic Commerce Act, the Data Protection Act and amendments to the criminal code that made computer misuse a criminal offence.

3. The Malta Government Network (MAGNET)

The MAGNET is an electronic jewel in the government's information systems environment. It makes use of various networking technologies (including ATM, FDDI, channellised E1 and frame relays) to connect all government ministries, departments, agencies, local councils, schools, police stations, libraries, hospitals, health centres, social services offices and embassies to one network. The network allows all these entities to communicate easily with each other, using extremely high bandwidths of up to 155Mbps.

4 E-government vision and strategy

In October 2000, the government published a detailed white paper on its vision and strategy for e-government in Malta. The response was widespread and came from various sectors of society. The white paper set out clearly the context and objectives of the

government's e-government programme, and the strategy to be adopted. Following a review of the responses to the white paper, the Cabinet approved it as the government's vision and strategy.

5. Capacity building

A central information management unit (CIMU) was created to handle the development and implementation of government information management standards and procedures. An information management unit was set up in each ministry to serve as the line ministry extension of the CIMU. These units are the primary implementation arms of e-government in the line ministries. An e-champion was identified in each ministry to serve as the political champion of the e-government initiative in that ministry. Another important step was the setting up of an office of review in each ministry, tasked with the implementation of all internal change management projects.

6 E-government standards

Standards and interoperability between systems are the backbone of any e-government programme. The CIMU has liaised with various local and international entities to set policies and standards for the entire e-government programme. These include e-government look and feel standards, data architecture standards, a web development framework and an interoperability framework.

7. Flag-bearer applications

A small set of basic electronic transaction-based services was launched in order to mobilise the expectations of the general public. Among the most used services were the Laws of Malta On-Line, the Court Judgements On-Line, a full GIS mapping system, online applications for services for the elderly and payments of government rents in local councils.

8. Consultation

Communication and consultation were a key factor in the successful implementation of measures to build an information society in Malta. The first widespread consultations were on the basis of the white papers on legislation and the e-government vision and strategy. The next consultation mechanism took the form of meetings with representative bodies on the adoption of the eEurope+ Action Plan. In 2001, two major surveys were carried out on the generic information society and citizens' and businesses' perceptions and expectations of the e-government programme. Another important stream of consultation was a series of ministerial road shows and e-government workshops held within the public service. In 2002, an innovative consultation mechanism was adopted whereby focus groups of citizens and business representatives were systematically consulted.

9. E-government payment gateway

It was evident from the feedback to the public consultation that both citizens and businesses were seriously concerned about divulging financial information over the internet. In view of this, government invested heavily in a public-private partnership to set up a secure e-government payment gateway that will serve as a secure vehicle for the conduct of online financial transactions between citizens, businesses and government.

10. Local electronic policy

Government considers local government as the lynchpin in the attainment of a first-class information society in Malta. In view of this, it has established a local electronic policy offering access to technology and service delivery via the front offices of local councils. Local councils are also used as centres for the dissemination of ICT. The policy has been implemented through a partnership between government and local councils, in which councils that opt to participate are granted a series of benefits related to the spread of the information society.

Projected Maltese e-government progress⁴³

1. All knowledge workers online

Through a widespread e-mail dissemination exercise, the government will provide a government e-mail address to each knowledge worker, including all employees in the health care, police and education services. In parallel with this initiative, the government will issue guidelines for the use of e-mail as a means of communication between public officers and citizens.

2. Registration and authentication mechanism

The government will enter into a joint venture with the private sector to provide a registration and authentication mechanism for e-government services. The mechanism will be rolled out in three phases. The first will be the provision of a PIN code to each citizen to enable them to authenticate themselves when they request e-government services. The second phase will involve the widespread distribution of digital certificates to businesses and agents, and the third phase will integrate smart cards with the new identity cards issued by central government.

3. Strengthening the middleware and interoperability skill base

The challenge of e-government is how to integrate various back-end systems so that they offer seamless joined-up public services to citizens and businesses. Interoperability will be a critical success factor in the implementation of integrated e-government services. The government ICT agency, Malta Information Technology and Training

Services Ltd (MITTS), has captured this skills shortage signal and is re-aligning its operations to transform itself into a centre of excellence in the integration of middle-ware applications.

4. Multiple service delivery channels

The government has a strong vision in relation to the implementation of e-government. One of its main principles sets out clearly that e-government services should be offered via multiple service delivery channels. It is working to offer a limited set of services on mobile telephone, via a call centre, and through public internet access points and the front offices of local councils and post offices. The implementation of e-government services on digital television will largely depend on the progress of private sector development and its eventual take-up. The operation and content management of these channels will be supported by a set of standards that specify particular technical characteristics of the adaptable channels. A special unit within government, the CIMU, is responsible for the design and publication of such standards.

5. M-government programme

As explained above, the government aims to offer e-government services via a variety of service delivery channels apart from the world wide web. One of them is mobile telephony. This channel has become even more relevant following a public opinion survey in 2006, when 43 per cent of respondents expressed a wish to use e-government services via mobile telephone. This statistic, coupled with the over 65 per cent mobile phone penetration rate and very high use of the short message service (SMS) (an average nine SMSs per day per subscriber) had only one natural consequence – m-government, through which a set of e-government services will be delivered by SMS over internet protocol (IP) technology. The m-government project is led by the Ministry for Information Technology and Investment and brings together the two mobile telecoms providers in Malta, the telecoms regulator and the government IT agencies.

6. E-government basic public services online

The basic building block approach adopted by government means that the provision of e-government services can be largely facilitated by directing efforts to process re-engineering at the back-office component of the service delivery mechanism. The selection of these services is based on the e-Europe basic public service checklist and on the results of the public consultation exercise referred to previously.

7. Communications campaign

The government believes that a crucial component in the implementation and take-up of e-government services will be the establishment of a first-class e-government communications programme made up of three major components:

- **Internal communications:** addressing communications to two related but distinct internal audiences – management and employees.
- **External communications:** focusing on communications with the clients (existing, potential and other) of the e-government services – citizens and businesses. This component will have four separate streams: general e-government communications; service-based communications (launching and marketing of particular transaction-based e-government services); line ministry/agency e-government communications (promoting the ministry website, information and services offered by that specific ministry); and lastly local council communications with residents and communities.
- **Feedback mechanisms:** this component will establish mechanisms whereby both internal and external communications queries will be channelled and resolved.

These mechanisms should be closely monitored for the extraction of useful management information.

Questions and answers on electronic governance⁴⁴

1. What are the main objectives of your government's plans on e-governance (service delivery, administrative, public involvement, etc.)?
 - *To facilitate and expedite the dissemination of information and assist the citizen's interaction with government*
 - *To improve the availability of services to the public*
 - *To widen available channels of delivery*
 - *To promote public participation through e-democracy initiatives*
 - *To enhance the transparency of government operations*
2. What are the priorities among these objectives? Is there a sequence of objectives, and which are receiving the most attention?
 - *The top priority has been to facilitate the dissemination of information*
 - *The second priority is to improve citizen-to-government (C2G) interaction*
 - *The third priority is to increase government efficiency*
3. What benefits does your government anticipate will result from enhanced e-governance? Is the process driven by government or by the wider society?
 - *Reduction of the cost of service delivery*
 - *Facilitation of C2G interaction*

- *Increased availability of government services*
 - *Deployment of staff to areas where more skill is required*
 - *Central data sharing*
4. Which of your government's e-governance objectives has proved to be the biggest challenge (the most costly, time-consuming, complicated or disruptive)?
- *Reduction of operational costs and identifying tangible benefits*
 - *Data sharing hosted on legacy/back-end systems*
5. What are the biggest implementation challenges in achieving enhanced e-governance (suppliers, installation, training, testing, etc.)?
- *Rationalisation of functionality and infrastructure*
 - *Co-ordination of the implementation of each individual line service*
6. How does implementation compare with the government's official plan on e-governance? Have any of the timelines, milestones or priorities been adjusted as experience accumulates?
- *Implementation of e-government services has been approached in stages whereby the first services delivered comprised content delivery and web presence activities. Subsequently, transaction-based systems were gradually introduced. The latter comprise the use of mobile technology, single-sign-on methods and interaction with payment gateways.*
7. How have the political stakeholders (general public, politicians, bureaucrats, special interest groups, etc.) responded to the prospect of increasing e-governance? Has there been any resistance and who are the biggest users?
- *General public – gradual, but increasing, take-up, exhibiting particular success in areas such as education*
 - *Politicians – enthusiasm to add new services. A political champion, the Minister for Industry, Investment and Information Technology, facilitated all inter-ministerial communications and acted as a driver within government*
 - *Special interest groups – set-up of a forum for all IT stakeholders such as communications authority, ISP, government CIOs, chambers of commerce and trade unions, among others*
8. How is support within your government mobilised in support of enhanced e-governance (through planning committees, in response to feedback, etc.)?

- *An e-government unit has been established within the Ministry for Information Technology with responsibility for the following functions:*
 - i. Project management*
 - ii. Evaluation of all projects*
 - iii. Outsourcing of consultancy services*
 - iv. Outsourcing of development and implementation*
9. Have all the anticipated benefits from e-governance actually been realised? Have costs been lowered, efforts co-ordinated, productivity raised, etc.?
- *The benefits that have been partially realised are:*
 - i. The closure of front offices at government departments*
 - ii. Rationalisation of functionality between all services*
 - *The benefits that have been fully realised are:*
 - i. Service availability to the public on a 24 hours a day, 7 days a week basis*
 - ii. Citizen-oriented services*
 - iii. Improved G2C communication*
 - iv. Real time information availability*
10. Have there been any detriments or drawbacks to enhanced e-governance? Did any of the costs exceed benefits, was there sometimes an increase in complexity and was training or technology ever too expensive?
- *Many e-government services necessitated the implementation of back-end systems. This increased the cost of systems and extended the project*
 - *Maintenance costs and up-keep*
11. What important lessons have been learned from the process of enhancing e-governance? Is more money, planning or time needed?
- *Better marketing of services to increase take-up*
 - *More time is needed to implement services*
12. What advice could be given to others who are contemplating e-governance? Are there elements that should be avoided or pursued?
- *There is a need for a political champion to drive the initiative across government*

- *It is important to attempt projects that deliver achievable and visible results*
- *The initiative should be publicised from within government and to the public*
- *Reduce the digital divide by actively encouraging the use of IT, the take up of IT as a career, the use of internet for businesses and by the general public;*
- *Establish system champions and create ownership*

CHAPTER 5

E-Governance in Cyprus

The Government of Cyprus has made considerable progress in planning and implementing e-governance/e-government. As the website of its Department of Information Technology Services (DITS) explains:

The mission of the Department is to provide high quality Information Technology Systems and Services to the Government and Citizens. Information technology within the public sector will:

- *Provide timely revenue collection*
- *Provide more information to the Cyprus Government for better decision making*
- *Increase productivity*
- *Provide high quality services to the public.*⁴⁵

This chapter will outline the government's e-governance plans and the challenges it faces, on the basis of material taken from the government's website and interviews with officials.

The DITS is responsible for ensuring that the full potential of information technology is harnessed to support government policies and objectives. It was formed in 1980, as the Data Processing Services Department, and in 1997 was renamed the Department of Information Technology Services.⁴⁶ The department was formed as part of the implementation of the Public Service Reform Plan and functions under the Ministry of Finance.

The vision of the DITS⁴⁷

The department's vision is to create an efficient and effective public service which will be able to provide high quality services to the public, where possible without the need to visit any government department.

Its objectives are to:⁴⁸

- Provide high quality services to the public and private sectors;
- Enforce an effective legal framework, including an improvement in the collection of government revenues;
- Plan and control the government's activities more efficiently;
- Improve the productivity of the public service;

- Minimise the costs of operating the government service;
- Increase government revenues through the introduction of new revenue-earning services or the expansion of existing ones;
- Harmonise with the EU.

Organisational structure⁴⁹

The department consists of the Infrastructure Projects Division, the Information Systems Division, the Procurement Division and the European Union and Personnel Development Section.

The main responsibilities and operations of each division or section are described below:

Infrastructure Projects Division

- Promotes infrastructure projects (office automation system, government data network, government internet node, etc.)
- Develops websites for all government ministries and departments
- Provides technical support

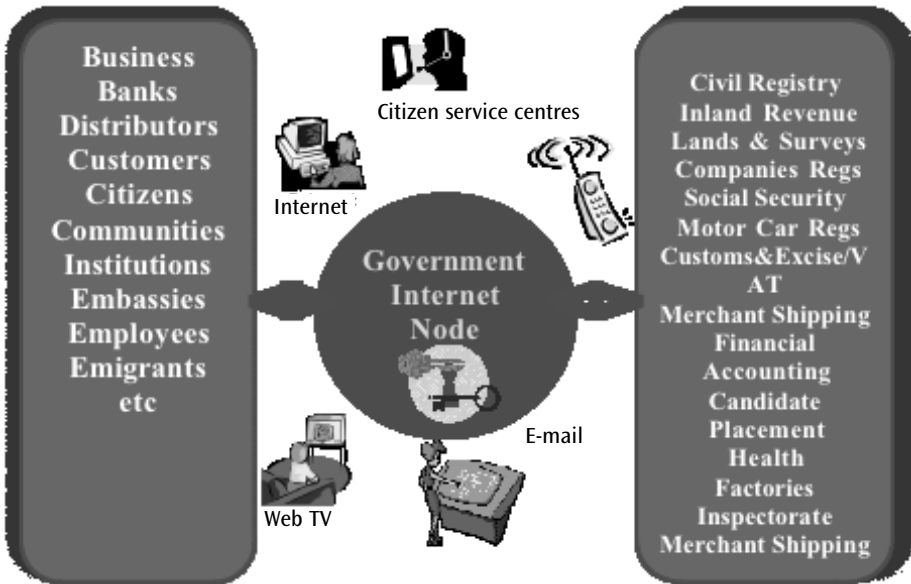
Information Systems Division

- Manages the Government Computerisation Plan (GCP) (infrastructure projects are excluded)
- Delivers information systems, via tenders or/and in-house development
- Provides operational support for all the information systems that are implemented in the various government ministries and departments
- Conducts requirement/scoping studies for government ministries and departments and provides them with the necessary hardware, software and services

Procurement Division

- Prepares tender documents
- Prepares technical requirements for the acquisition of hardware, software, turnkey solution systems and services
- Evaluates tenders
- Prepares and signs contracts on behalf of the government for the acquisition of hardware, software, turnkey solution systems and services

Figure 5.1. Department of Information Technology Services



- Represents the Director of the DITS at meetings of the Tender Board of the Ministry of Finance, the Central Committee of Changes, etc.

European Union and Personnel Development Section

- Manages EU issues
- Promotes and organises the education and training of DITS personnel
- Follows up the implementation of the GCP and prepares periodic and ad hoc project progress reports
- Prepares the annual budget report for all civil service IT projects
- Maintains and updates the department’s standards
- Prepares preliminary studies and information system strategy studies
- Administers the government data model
- Promotes the creation of government data warehousing

The Cyprus Government computerisation master plan⁵⁰

In 1987 a strategic study was carried out to examine the government’s information needs and to identify candidates for computerisation. In March 1989, the Council of

Ministers approved the GCP based on the recommendations of the strategic study.

In 1998, the Council of Ministers approved a revised version of the GCP. Rapid technological changes, more demanding users and EU directives necessitated the revision of the plan to include new infrastructure and strategic projects, and the adjustment of the national information services strategy to the new technological environment.

The GCP is not static and depends on the latest technological advances, political decisions, IT needs of ministries, departments and services, needs of the general public and EU directives.

E-government aims and objectives⁵¹

The GCP aims to:

- Provide turnkey solutions (strategic systems) for government ministries, departments and services;
- Create the infrastructure for the interconnectivity of all the systems through the government data network.

The GCP aims to achieve:

- **One computer terminal per desk:** All civil servants will have a computer terminal at their desk, which will provide access to the various government information systems and databases they need to perform their duties.
- **A paperless working environment:** Through the office automation system, all formal documentation will be processed in electronic form. Filing procedures and the transmission of information between the various ministries, departments and services will be done electronically and thus simplified.
- **Global communications:** Each civil servant will be able to communicate with other civil servants in any other government office, including overseas offices, via their computer terminal. They will have access to the internet for global communication and to all publicly available information and services.
- **Providing services via the web or through other electronic channels – e-government:** E-government will be promoted in order to offer high quality online services to the public, via the web or through other electronic channels, thus creating dynamic, user-centred government.
- **Data integration and consistency:** With the interconnectivity of the various systems, data integration and consistency will be achieved.
- **The harmonisation of the information systems of the Cyprus Government with EU information systems.**

E-government planning⁵²

The GCP is to be completed in three phases:

Phase A includes the implementation of the GCP application projects. Most of these information systems have been completed and are in full production.

Phase B includes the development of the infrastructure projects in order to achieve the interconnectivity of the various information systems. These projects have been completed and they are now at the roll-out stage.

Phase C includes:

- The interconnectivity of information systems over the government data network;
- The provision of internet services in the public sector which will allow civil servants to communicate within the government (through the intranet), with external users or vice versa (via the extranet);
- The office automation system roll-out in all ministries, departments and services;
- The development of web-enabled systems based on the EU action plan in order to provide high quality online services to the public. Existing information systems are to be redesigned and enhanced so that they will also be available to the public via the web;
- The development of government data warehousing;
- The creation of the e-government infrastructure which includes:
 - the government portal, through which the public will have access to various government information and services from a single point of entry, based on the life-event cycle
 - the Government Gateway, which will provide security, authentication, encryption and decryption services

Completed strategic projects⁵³

1. Computerisation of the Social Insurance Department (Ministry of Labour and Social Insurance)

To develop a computerised system for the Social Insurance Department, covering registration of employers and insured persons, collections of contributions, proceedings against defaulters, adjudication and payment of benefits, and the production of statistics and reports.

2. Computerised integrated land information system (Ministry of the Interior)

To develop and implement a computerised system to support the operations of the Department of Land and Surveys. The system will integrate two components: a spatial

legal/fiscal component and a spatial digital cadastral database/survey database (GIS). The system will support the establishment of a National Land Information Centre capable of exchanging data with other government departments, local authorities and public utilities.

3. Office automation system

To provide an automated system within the Ministry of Finance and the DITS that will support enterprise-wide document management services and the control of work-groups and workflow.

4. Computerisation of the Road Transport Department (Ministry of Communications and Works)

To develop and implement a computerised system to support the operations of road transport, the police, and customs and excise in relation to vehicles, drivers, driving licences and vehicle inspection.

5. New tax administration system (Ministry of Finance)

To develop a computerised system for the Inland Revenue Department, including the administration of tax returns and the issue of assessments. The system has improved the quality of services provided to the public, as well as reducing delays in tax assessment and collection.

6. Companies registration system (Ministry of Commerce, Industry and Tourism)

To provide an automated system for the Companies Section and Partnership and Business Names Section of the Department of the Registrar of Companies and Official Receiver.

7. Millennium safeguard

The hardware and software of all systems were upgraded, adjusted or replaced to secure compatibility with the year 2000.

8. Candidate placement system (Ministry of Labour and Social Insurance)

To provide a computerised system to support the Candidate Placement Section of the Department of Labour, covering registration of candidates and vacancies, matching candidates with vacancies, monitoring interviews and the provision of statistics.

9. Factory inspectorate system (Ministry of Labour and Social Insurance)

To provide a computerised system to support the major activities within each functional area of the Factory Inspectorate Section and to decentralise and simplify related activities, leading to a more productive and efficient environment.

10. Computerisation of the Social Welfare Services Department (Ministry of Labour and Social Insurance)

To provide a computerised system for the Social Welfare Services Department covering case histories, personnel records and institution profiles, prioritisation and

scheduling of social workers, reports and statistics, public assistance assessment and payment, programme budgets and payments tracking.

11. Civil registration system (Ministry of the Interior)

To computerise the civil registration functions of the Ministry of the Interior, including the issue of birth and death certificates, ID cards and refugee booklets, passports and travel documents, and electoral booklets, as well as the management of elections, compilation of statistics and reports, and maintenance of a central civil registry database.

12. Government data network

The government data network is a broadband network based on ATM/frame relay technology over which all government systems will be interconnected so that they can exchange information utilising web workflow technologies.

13. Customs and excise system (THESEAS) (Ministry of Finance)

THESEAS is the first e-government application in Cyprus. It is also the first fully integrated web-enabled customs system in Europe. The system is currently in production and is fully in line with EU requirements. THESEAS is designed to enable traders to connect to the system via the internet for the electronic submission of cargo and import operations. It also supports electronic payment of customs duties through the banks.

14. Computerisation of the Co-operative Development Department (Co-operative Societies Supervision and Development Authority)

Provides a computerised system that maintains monthly and yearly statistical data societies in relation to their members, employees, committee members, loans, general assemblies, arbitrations and liquidations.

15. The precision alternative (Ministry of Health)

To provide a computerised system to support the management of patients and related records in all hospitals and rural health centres. The system covers in-patients, out-patients, waiting lists, diagnostic activities, equipment and stock management, personnel and duty rostering, accounting, costing and statistics.

16. Government internet node

The aim of the project is to provide an interface between government information systems and the internet. It will provide the hardware platform for a government access node to the internet to allow civil servants to communicate with external users and access information and other systems; it will also allow external entities to communicate with the government and to obtain selected services. The node will provide technical support to government users and define relevant standards and procedures.

17. Merchant shipping System (MARCOS) (Ministry of Communications and Works)

To provide an integrated and automated system that will enable the Department of Merchant Shipping to carry out all its responsibilities, including the provision of services to its customers, to the same or higher standards as other flag-state administrations.

18. Integrated financial and management accounting system (Treasury Department)

The aim of the project is to provide a central accounting system for use by the Treasury Department with online links to all government departments to facilitate a common integrated approach to central accounting functions. It provides improved services to all parties involved and better management, control and monitoring of the government's financial activities.

Current strategic projects⁵⁴

1. IS strategy study (Ministry of Agriculture, Natural Resources and Environment)

To identify the requirements for implementing various computerised systems to support the operations of the Ministry of Agriculture, Natural Resources and Environment. They include a water pricing system and an integrated administration and control system.

2. Courts administration system (judicial)

To provide a computerised system to support the administration of the courts of the Republic of Cyprus. The system will cover the planning and scheduling of court hearings, tracking and monitoring of cases, recording and tracking of court decisions, and the production of statistics and reports.

3. Legal information system (judicial)

A web-enabled system that gives access to all judgments, laws, regulations and other legal material to judges, lawyers, government officers, other external entities and the public.

Questions and answers on electronic governance⁵⁵

1. What are the main objectives of your government's plans on e-governance (service delivery, administrative, public involvement, etc.)?

- *To deliver information and services to citizens and businesses more effectively, cheaply and conveniently*
- *To assist in the integration and collaboration of data and information systems within and between government organisations*

- *To improve the processes within and between government organisations, leading to lower costs and improvement of services*
 - *To increase transparency and lighten administrative burdens, both for citizens and businesses*
 - *To enhance democratic procedures and involve citizens in decision-making*
2. What are the priorities among these objectives? Is there a sequence of objectives, and which are receiving the most attention?
- *The e-governance Action Plan strives to achieve all the above objectives, with particular emphasis on delivering information and services to citizens and businesses more effectively, cheaply and conveniently*
3. What benefits does your government anticipate will result from enhanced e-governance? Is the process driven by government or the wider society?

Anticipated benefits:

- *Increasing public sector productivity*
- *Efficiency, transparency and quality of service within administrations, and between administrations and citizens*

The process is mainly driven by government; however, objectives set are in compliance with the objectives of the i2010 initiative for a European information society, and in line with the competitiveness and efficiency targets set in the Lisbon Strategy.

4. Which of your government's e-governance objectives has proved to be the biggest challenge (the most costly, time-consuming, complicated or disruptive)?

The biggest challenge is to improve the processes within and between government organisations, leading to lower costs and improvement of services, i.e. the re-engineering and simplification of processes has been the biggest challenge as, most of the time, a complete transformation of organisational structures and change in people's attitudes are required.

5. What are the biggest implementation challenges in achieving enhanced e-governance (suppliers, installation, training, testing, etc.)?

The challenges have mostly been organisational, rather than technical, as follows:

- *Organisational changes required to implement e-government services fast and effectively, e.g. business process redesign needed prior to the implementation of any e-government initiative*

- *Mindset/staff attitude changes were required to implement e-government services effectively and to maintain sustainability, i.e. develop strategies and change management processes that focus on changing deeply ingrained behaviours*
- *Acquisition of the different skills (not only ICT skills) which are needed by managers and staff at all levels to govern and manage change*

6. How does implementation compare with your government's official plan on e-governance? Have any of the timelines, milestones or priorities been adjusted as experience accumulates?

Accumulated experience from the implementation of e-government projects has helped us to adjust our initial plan, especially with regard to putting more emphasis on organisational transformation aspects and on better promoting the new e-services launched, so as to increase awareness of e-government services offered, as well as to increase public trust. A good example of this is the road transport web-enabled system, whereby the new e-services were successfully promoted and as a result were used by citizens. It is worth noting that the EU report regarding the 6th measurement web-based survey on electronic public services, which was carried out for the European Commission by Capgemini shows Cyprus among the top four European countries offering car registration e-services. (This report was released in June 2006.)

7. How have the political stakeholders (general public, politicians, bureaucrats, special interest groups, etc.) responded to the prospect of increasing e-governance? Has there been any resistance, and who are the biggest users?

Most stakeholders have responded positively to the prospect of increasing e-governance, with the exception of some resistance posed by staff to changing the 'way they have been doing things over the last years'. However, change management initiatives are promoted that focus on cultural issues and closely associate public employees as full partners of the change process, so as to get them on board and ensure that the e-government project is successfully implemented.

The general public has responded positively to the prospect of increasing e-governance. However, the Cyprus Government adopts a multi-channel approach whereby options are provided to citizens with regard to service delivery channels. As a result, over the past year, three one-stop-shops or citizens' service centres have been set up, offering a series of services from one point of contact, in parallel to e-government projects providing services online.

8. How is support within your government mobilised in support of enhanced e-governance (planning committees, response to feedback, etc.)?

Key IT infrastructure and strategic projects are included in a revised version of the Cyprus

Government Computerisation Plan, which has been approved by the Council of Ministers. The plan includes, among other elements:

- The development of web-enabled systems based on the EU Action Plan to provide high quality online services to the public. Existing information systems are redesigned and enhanced so that they will also be available to the public via the web.
- The creation of the e-government infrastructure which includes:
 - The government portal (www.cyprus.gov.cy), through which the public has access to various government information and services from a single point of entry, based on the life-event cycle
 - The Government Gateway, which will provide security, authentication, encryption and decryption services

Any new IT project, including e-government projects, is submitted to the Executive Board for Computerisation to gain approval and support prior to its initiation.

The Cyprus Government is also now considering setting up specific administrative structures and mechanisms for ensuring the successful implementation of information society initiatives, i.e. creating a permanent advisory committee and other committees. This proposal has been elaborated in order to enhance strategic policy-making and co-ordination in the area of information society, including e-government, given the fact that information society-related initiatives are of an encompassing, cross-ministry nature and, in most cases, are unnecessarily fragmented.

9. Have all the anticipated benefits from e-governance actually been realised? Were costs lowered, efforts co-ordinated, productivity raised, etc.?

Some benefits from e-governance have already become apparent, e.g. efforts are now more co-ordinated and fewer staff are required in the front office. There has also been an improvement in the flow of information and communication in the departments that have implemented e-government projects and employees are now more ICT aware.

More benefits are expected to be realised in the long term. However, it should be noted that the outcomes of e-government projects, in terms of value for money, public value and the overall contribution to good governance, are usually difficult to assess.

10. Have there been any detriments or drawbacks from enhanced e-governance? Were there occasions when costs exceeded benefits, was complexity ever increased or was training or technology too expensive?

None.

11. What important lessons have been learned from the process of enhancing e-governance? For example, is more money, planning or time needed?

The important lesson learned from the process of enhancing e-governance is that most failures of e-government projects are not technical failures, but organisational. As a result, to ensure successful implementation of e-government projects, one needs to place strong emphasis on:

- *Strong leadership at different levels to provide a strategic vision*
- *Gaining management and user commitment*
- *Putting in place effective project co-ordination and change management processes*
- *Re-skilling personnel, to anticipate the changes that accompany e-government initiatives and the new roles to be adopted*

E-Governance Projects in Malta and Cyprus

MALTA

In 2000, the Maltese Government developed policies that recognised that ICT was a strategic tool that could better the lives of its citizens, and adopted the concept of the information society in relation to government ministries and business. As a follow-up, Malta developed an e-government strategy in 2001 and completed a national ICT strategy between 2004 and 2006. The result has been a series of e-government projects in government departments. The Government of Malta is very advanced in its e-government practices, providing a wide number of services to Maltese citizens. In 2003, an e-Government Act was passed that mandated guidelines for ministries. The government's strategic goal is to join up ministries and make e-government services available across government. Its key objectives are:

- A one-stop shop for all e-government services
- A seamless environment and ease of use
- A single point of entry for all e-government services
- Increased cost effectiveness
- Better management of information

The Mobile Government of Malta project

Malta is providing mobile (wireless telephony) technology and services to connect the public with the government. An outline of this project follows.

Minister's brief⁵⁶

The rapid developments in information and communications technology are re-engineering economies, re-inventing governments and radically transforming cultures. This technology is becoming a fundamental pillar of social change, with a positive effect on education, economic growth and global competitiveness. Such transformations, within the setting of the spectacular rate of global change, are opening a window of digital opportunities for countries like Malta that are recognising their role in this new and exciting time.

Electronic service delivery is a key source of innovation. New digital channels can deliver better quality services to citizens that are available 24 hours a day, 7 days a week, and are faster, more convenient and more personalised. As an integral part of the e-government programme, the Malta's Ministry of Justice and Local Government is now offering e-government services via a variety of service delivery channels, besides the internet. In this new scenario, government services are available for users of mobile telephones. Mobile phones give users unique opportunities to receive services and information literally from any place, at any time. The Ministry of Justice and Local Government wants everyone to participate; a wide choice of channels ensures total social inclusion.

The Government of Malta strongly believes that citizens should have a choice of electronic channels for accessing government services; one of these innovative service delivery channels is mobile telephony. Wireless working and mobile access to public services are opening up new frontiers for e-government development. This channel became even more relevant as a result of the 2006 public opinion survey in which 43 per cent of respondents expressed their inclination to use e-government services via their mobile phone. This statistic, coupled with the impressive rate of mobile phone ownership and SMS usage, had only one natural consequence – m-government.

About m-government⁵⁷

As an integral part of the e-government programme, the Ministry for Information Technology and Investment – the champion and leader of Malta's e-government programme – aims to offer e-government services via multiple service delivery channels, apart from the world wide web. One of these is mobile telephony. Sixty-four per cent of Malta's population own a mobile phone. The m-government project brings together the two mobile telecoms providers in Malta, the telecoms regulator and government IT agencies. An important factor in favour of the adoption of mobile telephony as a channel for e-government is its popularity in Malta.

Mobile phone users will be able to access a number of government services via their phone and both Vodafone and Go Mobile subscribers will be able to receive notifications and service information. A series of common m-government numbers will be established and during the first few months of pilot testing both operators' customer care centres will be empowered to handle queries. Subscribers can call the usual customer care numbers – 247 for Vodafone Malta or 146 for Go Mobile.

How it works⁵⁸

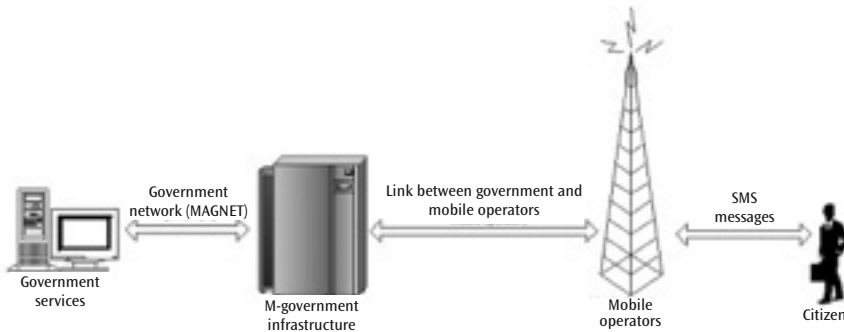
In the e-government strategy and programme drawn up in 2000, mobile communications was identified as a principal means of reaching citizens. The use of mobile phone technology as an additional means of communication grew out of the large demand for it. The introduction of a competitive mobile communication sector presented citizens

with a number of new methods of communication. Of these methods SMS is definitely the most popular.

Government immediately recognised the potential of this service and sought to transmit information from its existing services to the end user through SMS.

Figure 6.1 shows how information flows from government servers to the citizen who has requested a service.

Figure 6.1. Information flow from government server to citizen



After a citizen has registered for a mobile government service through this website the department or entity concerned validates the citizen's request. If it is accepted, the citizen is registered to receive SMS notifications.

Once the information the citizen has registered for is available, the government department or entity triggers a notification via SMS. This is processed between the government servers and the m-government infrastructure through the government network (MAGNET). Once complete, the notification is sent to the mobile operator with whom the citizen is registered. The operator, in turn, packages the notification and sends it as an SMS to the citizen.

Conclusion

This project is well underway, and is placing Malta at the leading edge of the deployment of mobile technology in the service of e-governance.

CYPRUS

The Republic of Cyprus does not as yet have cross-jurisdictional functions across all government ministries. However, many e-government services are now online and are proving to be of value to citizens and businesses. In this phase of e-government development, the main focus is on improving these services. The following example illustrates one of the country's advances in e-government.

Telemedicine in Cyprus

One of the aspects that most distinguishes the modern world from earlier societies is its capacity to empower wider and wider segments of society to seek and achieve a better quality of life. The demographic revolution is a dramatic instance of this. More and more people worldwide are now living longer and healthier lives. Between the sixteenth and first half of the twentieth centuries, the main contributors to this trend were better nutrition and public health practices. In the second half of the last century, the main developments in improving the quality of life shifted to genetics and medicine. Governments are increasingly playing a role in this by disseminating information via the internet.

Throughout the Commonwealth, the delivery of health-related information and knowledge is becoming one of the primary responsibilities of e-governance. This reflects a worldwide trend. Those who track the content and use of the internet report that websites devoted to medical information rank amongst the top five types accessed. In response to this trend, government health departments and public medical institutions are increasingly supplying health-related information. On the one hand, e-governance for health service delivery represents a response to grassroots demand. On the other, it is an opportunity for governments to assure the provision of quality information and knowledge, and counteract misinformation and unreliable reports.

Since Commonwealth governments now involve themselves in a growing number of health issues and services, the need arises to plan for the future financing, staffing and equipping of health-care facilities if they are to meet expectations about health care. This situation has led to the growth of a new capability: health-care futures forecasting. Demography and epidemiology are being cross-referenced to anticipate how public and individual health needs will develop as populations age and technologies, in the form of medicines, diagnostics and treatments, expand.

The internet is playing a significant role in this process. Consultations and conferences are being organised online to speed the deliberation process and cut costs. When face-to-face meetings do occur, the internet is also helpful. Using websites and e-mail, the pre-planning gives participants an opportunity to share material before it is presented and get feedback on suggested changes. Meeting agendas can also be posted online, as can the accommodation and transportation provisions for the meeting. After meetings have taken place, the papers presented and decisions taken can also be posted online, enabling both professionals and the public to be appraised of the issues covered and the actions planned.

This combination of websites and e-mails provides the public and governments with links to each other and to hospitals, research groups, extended care organisations and special interest groups.

This case study gives an overview of how Cyprus's Ministry of Health is using electronic

infrastructure to promote the health of the country's population. Firstly, an outline is given of the government's business case for a transition to a new health information system that can better meet the needs of both patients and health-care practitioners. Following that, some of the specific steps in implementation are discussed.⁵⁹

The business case

The clinical objectives of the new health information system include the following considerations:

- Pre-hospital level (pre-hospital health emergency management system)
- Primary health care (health-care information and telemedicine)
- Home care (wireless patient monitoring and telemanagement)
- Hospital care (common framework, standards and services)
- Information and collaboration services (WebOnColl platform and shared data)
- Integrated electronic health record (records and knowledge management)

The Ministry of Health has aimed for greater efficiency and productivity in its IS/IT system. This involves, among other things, a better integrated system, so that technology and people can work together to provide better services. To accomplish this, the Ministry of Health needed:

- An adequate definition of a health information system;
- A new organisational design
- Better health-care provision procedures
- Standards for procedures and forms

The business case then considered the implementation requirements to achieve these goals:

- Appropriate project management
- Appropriate software for record-keeping
- Efficient infrastructure networks
- Internet access
- Relevant procurement procedures
- Effective training programmes
- An appropriate legal framework

The tasks of the new organisation that resulted from this project were to apply new standards, compile medical records, classify symptoms and diagnoses, devise new forms and filing systems, and work within a new set of technical policies.

To move forward required approval and authorisation of the study that would determine the specifics of the plan. A budget had to be approved, a steering committee created, personnel seconded, teams appointed and sign-off acquired, so that the work could begin. The business case also dealt with how specific components of the plan would be approached.

For the hospital system, a top-down method was recommended. The system is so large and complex that an effective and integrated design requires a holistic overview. However, it is recognised that a top-down approach entails pitfalls that designers of the system must be aware of: larger scope; longer project duration; more learning; higher costs and risks; ambiguous requirements; and a possible loss of momentum. It was pointed out that all these pitfalls would be guarded against during implementation.

The next issue was whether to make or buy in. This decision depended on the conclusions of the study that was the first step in implementing the plan. The guiding principles of the study are:

- Patient-centred information
- Provision of high quality services
- Integrated systems
- Sharing of information
- Management information
- Security and confidentiality
- Modular architecture
- Interoperability
- Adaptability
- Open standards

Finally, system architecture issues must be dealt with.

1. Should the system adopt a distributed approach or would central replication be preferable?
2. How should user requirements be defined?
3. How is it possible to ensure that all the system requirements are recognised and used?

The business case included an acknowledgement of the context within which the project will operate. A warning from Richard Heeks and his colleagues at the University of Manchester was invoked: ‘... the greater the change gap ... the greater the risk of failure’. There was also a focus on ‘humanware’ in the project – the recognition that people, with all their potential and limitations, are both the reason for and the means of building the new system. The project staff were therefore offered four options: fast total success, fast partial success, slow partial success and slow partial failure. It was felt that the third option, slow partial success, was the best that could actually be achieved – so it was pursued.

What follows are some of the steps taken to implement the objectives presented in the business case.

Vision of the Ministry of Health on information technology⁶⁰

The Ministry of Health envisages that over the next 3–7 years it will be able to introduce information technology into services and departments in order to:

- Provide better service through increased productivity and timely management of information;
- Move towards paperless and filmless hospitals through the introduction of electronic health record systems;
- Introduce a smart medical card;
- Provide remote medical services (via the internet, telemedicine and robotics);
- Provide access to external and internal data banks.

Roles and responsibilities of the Ministry’s IT section⁶⁰

The following are considered to be the major responsibilities of the IT section:

- Submit suggestions to its ministry or department and to DITS on relevant policy issues;
- Manage the implementation of the ministerial/departmental information systems strategy;
- Undertake or manage the study, development and implementation of non-strategic projects within the standards and guidelines set out by DITS, including the preparation and maintenance of the relevant project plans;
- Assist with the study, development and implementation of strategic projects;
- Perform all the system administration functions, namely:

- Ensuring that the ministerial/departmental systems are operational
- System tuning
- Identification of malfunctions and liaising with suppliers to correct them
- Provision of user support
- Maintaining the original versions of software and the relevant documentation
- Maintaining configuration records detailing the hardware and software used in the ministry or department, including serial numbers and/or version numbers, where applicable, and their location
- Installing new or updated versions of hardware and software
- Assigning authorisations for network resources
- Ensuring that satisfactory back-up procedures are in place;
- Be represented on the project boards of the projects of its ministry or department;
- Provide consulting services to its ministry or department;
- Provide second line support for the projects of its ministry or department (first line support will be provided by the expert users);
- Provide first line technical support;
- Conduct technical quality assurance reviews;
- Participate in technical committees;
- Organise and/or conduct appropriate IT-related training for users.

Conclusion

The Ministry of Health is moving forward with the deployment of its telemedicine system. A report on the project is posted on the Ministry of Health's website, to which readers may refer for details about progress on its various aspects.⁶²

Comparative Analysis and Lessons Learned

A framework for comparison

In order to draw meaningful lessons from the experience of enhancing e-governance/e-government in Malta and Cyprus, it is necessary to compare their respective achievements. It will then become clear what was learned and how that knowledge can be used. The similarities shared by the two governments make them particularly appropriate cases for comparison. Both countries are islands, one in the western Mediterranean (Malta) and the other in the eastern Mediterranean (Cyprus). Both have significant development agendas and communities that have taken to the internet with considerable enthusiasm. As a result of this, both countries have availed themselves of assistance from the Commonwealth to further their e-government capabilities.

The Governments of Malta and Cyprus were presented with a series of questions that probed their planning and projects in the area of e-governance/e-government capability. This chapter will make a comparative analysis based on the answers given in the previous chapters and other material available on the two governments' websites, and will highlight the similarities and differences in the approaches adopted by the countries. It sets out what information was sought, lists the questions asked and, lastly, summarises the answers received.

Information sought

- Mission statements
- Main priorities
- Anticipated benefits
- Challenging goals
- Difficulties in implementation
- Discrepancies between plans and results
- Stakeholders' responses
- Project mobilisation efforts
- Assessment of benefits
- Occurrence of drawbacks

- Lessons learned
- Advice for others

Questions

The answers to the questions presented to the Governments of Malta and Cyprus are detailed in Chapters 4 and 5. The same 12 questions are presented in comparative form below. This has been done in an attempt to briefly cover a wide spectrum of concerns relating to planning and implementing e-government. The authors were mindful of the fact that the primary concern of the respondents was to enhance e-governance. Table 7.1 contributes to the analysis of how the two countries responded to the questions. Table 7.2 presents a summary of comparative indicators of performance.

1. What are the main objectives of your government's plans on e-governance (service delivery, administrative, public involvement, etc.)?
2. What are the priorities among these objectives? Is there a sequence of objectives, and which are receiving the most attention?
3. What benefits does your government anticipate will result from enhanced e-governance? Is the process driven by government or the wider society?
4. Which of your government's e-governance objectives has proved to be the biggest challenge (the most costly, time-consuming, complicated or disruptive)?
5. What are the biggest implementation challenges in achieving enhanced e-governance (suppliers, installation, training, testing, etc.)?
6. How does implementation compare with the government's official plan on e-governance? Have any of the timelines, milestones or priorities been adjusted as experience accumulates?
7. How have the political stakeholders (general public, politicians, bureaucrats, special interest groups, etc.) responded to the prospect of increasing e-governance? Has there been any resistance and who are the biggest users?
8. How is support within your government mobilised in support of enhanced e-governance (through planning committees, in response to feedback, etc.)?
9. Have all the anticipated benefits from e-governance actually been realised? Have costs been lowered, efforts co-ordinated, productivity raised, etc.?
10. Have there been any detriments or drawbacks to enhanced e-governance? Did any of the costs exceed benefits, was there sometimes an increase in complexity and was training or technology ever too expensive?

11. What important lessons have been learned from the process of enhancing e-governance? Is more money, planning or time needed?
12. What advice could be given to others who are contemplating e-governance? Are there elements that should be avoided or pursued?

Responses

Table 7.1. Responses to questions about e-governance

Summary of question	Malta	Cyprus
E-governance objectives?	Enhance internal operations and public outreach	Service delivery, network integration, operational efficiency, transparency, e-democracy
Prioritise objectives?	Information dissemination, C2G interaction, governance efficiency	Effective service delivery that is inexpensive and convenient
Anticipated benefits?	Cost reduction, service availability, skill and data sharing, C2G interaction	Public sector productivity, within government and between citizens and government
Challenging objectives?	Benefits identification, cost reduction, data integration from legacy systems	Achieving cost savings and effectiveness (re-engineering) through internal co-ordination
Implementation challenges?	Functionality/infrastructure rationalisation, implementation and co-ordination of line services	Organisational changes, mindset re-orientation, skill-set enhancement
Alignment of goals/outcomes?	A staged implementation, with platform first, followed by mobile technologies for user transactions	Experience has taught the importance of organisational changes and promotion to public

Table 7.1 (continued)

Summary of question	Malta	Cyprus
Stakeholders' responses?	Slow but steady public acceptance, enthusiastic politicians, special interest groups were co-ordinated	Focus on getting insiders' support, and providing one-stop shopping and cultural links for public
Mobilisation of support?	E-government unit managed project, evaluation and outsourcing	Comprehensive authorisation, inclusive planning and careful implementation
Realisation of objectives?	Complete: citizen focus, C2G communication, 24 X 7 service availability Partial: integration of services, store-front closures	Benefits realisation is in process: co-ordinated efforts, small staff, better flow of information, cost reductions
Any drawbacks or detriments?	More back-office infrastructure needed than anticipated, additional maintenance costs, longer duration	No drawbacks or detriments reported
Lessons learned from project experience?	Better marketing of services for uptake, more time needed to implement services	Most e-governance failures are organisational rather than technical
Advice to share for those with similar aims?	Get a champion, focus on visible deliverables, promote to public, emphasise benefits, encourage buy-in	Focus on leadership and commitment, co-ordinate change management, retrain staff for effective system use

Project planning

As the above table reveals, there is a significant degree of overlap in the answers given by the Governments of Malta and Cyprus. An in-depth look at the full answers confirms this. These parallels are very encouraging because they demonstrate that both

governments are learning from the wider experience of the ICT community of practice about the design and management of e-governance projects, and that they are following through on lessons learned with actual implementation accomplishments.

In terms of 'e-governance objectives', the common themes that emerge are a combination of **improved internal operations** and **more effective responses to the general public**. These two themes have dominated virtually all e-governance projects worldwide, and are to a very considerable extent the entire rationale for e-government/e-governance. Improved internal operations, often referred to as back office, represent different aspects of increases in efficiency. Basically, the use of ICT has been advocated as a way of producing more services with the same resources, or producing the same level of services with fewer resources. More effective responses to the public involve better service delivery (relevant information, single window of access, etc.) and better public consultation (inviting public inputs and responding to feedback). As the answers reveal, all these aspects of e-governance objectives are on the agendas of Malta and Cyprus.

The 'prioritised objectives' are also similar for both governments. **Information dissemination** and **governance efficiency** (Malta) are equivalent to **effective service delivery** and **inexpensive and convenient operation** (Cyprus). This consistency is more than coincidental – it represents similarities of outlook among both the general public and public servants in modern democracies. By prioritising e-governance objectives in these ways, decision-makers in both governments are acknowledging that they are listening to their major constituencies and that their programmes for e-governance have been designed accordingly.

In articulating their visions of 'anticipated benefits', the governments of Malta and Cyprus again use somewhat different terminology to state basically the same goals. **Cost reduction, service availability, and skill and data sharing** (Malta) are in the pursuit of the same benefits as **public service productivity within government** (Cyprus), namely less costly and more effective back-office operations. Both governments are not only planning for these outcomes, but clearly expect to see these improvements manifest throughout the course of their e-governance projects. The other set of benefits that both governments anticipate is expressed by Malta as **citizen-to-government interactions**, and by Cyprus as **better relations between citizens and government**.

In relation to 'objectives that were particularly challenging', both Malta and Cyprus experienced problems with achieving **lower costs** and with **technology interoperability**. On costs, Malta identified the problem as **realising cost reduction** and Cyprus referred to the problem of **achieving cost savings**. On interoperability, Malta acknowledged the challenge of **data integration from legacy systems** and Cyprus pointed to the challenge of achieving **effectiveness (re-engineering) through internal co-ordination**. Malta raised the additional point of the challenge of **actually identifying what benefits were achieved**. This additional point is an issue that both companies and countries frequently raise, and it hinges on the **perceived inadequacy of an older accounting**

paradigm to acknowledge and accommodate additional measures of performance that apply to information networks rather than to factories. We will deal with this issue in more depth later in the analysis.

Project implementation

The answers to the question about implementation challenges during the enhancement of e-governance focus on different aspects of the same problem. In the case of Malta, the issues mentioned relate to *alignment between technologies* and *integration of services*. In the case of Cyprus, the issues raised were *organisational retro-fitting* and *personnel development*. Both sets of issues involve the interface between *functionality* and *sociality*, between *technical considerations* and *human requirements*. Tackling either set of issues will soon lead to the need to deal with the other set, a situation both governments have undoubtedly encountered on numerous occasions.

In their assessment of the ‘alignment between goals and outcomes’, each country’s answers again emphasise different features of the same issue. This time the issue is the identification of *conditions of success* for the project. In both cases, there is recognition of the complementarity of reciprocal components that must be addressed, either sequentially or simultaneously. The conditions of success that Malta focuses on are those that need to be addressed sequentially, namely *phased building* of the project, first *infrastructure* and then *performance*. The conditions of success highlighted by Cyprus, on the other hand, are those which need to be addressed simultaneously, namely *joint attention to governmental re-organisation* and *public engagement* – both processes must be implemented together, so that the motivation to produce good results is reciprocal.

The answers to the question about the response of stakeholders refer both to specific groups and to the wider public. In the case of Malta, the specific groups (politicians and special interests) are keen to take up enhanced e-government services, whereas the general public is slower in its acceptance, moving incrementally. With Cyprus, it is the specific group (government insiders) who are slower on the uptake and who need encouragement, whereas the wider public is prepared to use enhanced e-government services, provided they are user-friendly (e.g. have a single point of access) and relevant to their concerns.

In relation to ‘mobilisation of support’, both countries emphasised a comprehensive approach rather than piecemeal attempts. The Government of Malta pointed to its use of an e-government unit for *project management, evaluation* and *outsourcing*. The Government of Cyprus referred to its integrated approach to *authorisation, planning* and *implementation*. Progress has obviously benefited from these all-embracing perspectives that were adopted to build the support needed.

Project outcomes

What do the responses reveal about the ‘realisation of objectives’? The Government of Malta reports the full completion of citizen focus, C2G communication and 24 hours a day, seven days a week service availability, as well as partial completion of integration of services and store-front closures. The Government of Cyprus reports that realisation of the benefits of e-governance is ongoing, including co-ordination of efforts, lower staffing levels, better flow of information and cost reductions.

When asked ‘Were there any drawbacks or detrimental effects?’, the Government of Malta reported that more infrastructure was needed for back-office operations than was originally anticipated; the operating system required additional maintenance costs over and above those that were budgeted for; and the entire design and implementation took longer than planned. The Government of Cyprus did not report any drawbacks.

What lessons were learned from the experience of the project? Here too the essence of the answers was the same, but Malta spelled it out in terms of specifics, whereas Cyprus focused on the general theme. In both cases, the lessons learned were that ‘peopleware’ (personnel and organisations) presented a bigger challenge than hardware or software. Malta cited the advisability of making provision for better marketing of services for uptake, both within government and between the government and wider society. It also discovered that more time should have been allocated to implement the new services, again both within government and between government and the wider society. Cyprus concluded that most e-governance failures are organisational rather than technical; experience elsewhere shows that this too applies both within government and between government and the wider society.

When asked what advice they would give to those embarking on similar projects, both governments recommended that the greatest gains could be achieved by taking the larger view. Malta had four maxims:

- Encourage or appoint a project champion;
- Focus on visible deliverables, so that successes are easy to demonstrate;
- Emphasise benefits, so that motivation is focused on outcomes;
- Encourage buy-in from the stakeholders, as a way of mobilising their full support.

Cyprus came up with the same ideas, with three guidelines:

- Focus on leadership and commitment, so that there is as much alignment on the e-governance project as possible;
- Co-ordinate change management, because there will be a diversity of impacts as e-governance develops, and everyone wants to be treated respectfully and fairly;
- Retrain staff for effective system use, because as IT consultant Paul Strassmann

observes, the only real value of the electronic infrastructure is the service that trained operators can give to clients and citizens.

A few words remain to be said on the additional point raised by Malta about challenges posed by the project. Respondents mentioned that identifying benefits was problematic. Whereas industrial systems usually provide goods and services that can be sold, and hence valued monetarily, e-governance infrastructure improves the reach and quality of governance operations and services which, although highly valued, do not necessarily lend themselves to monetised assessment. Only after users have had a chance to experience the system at first hand for a period of time is there likely to be a consensus about its value. In the meantime, the most effective rationale seems to be the cost reductions that improved efficiency and productivity, and right-sized staffing, can bring about.

Table 7.2. Milestones on the road to e-governance

Performance indicators	Accomplishments of Malta	Accomplishments of Cyprus
Development of e-government organisational capabilities	Ministry for Investment, Industry and Information Technology mandated in 2000 to champion e-government	Data Processing Services Department formed in 1980, transformed into Department of Information Technology Services in 1997 to apply ICT to government
History of e-government strategic planning	<ul style="list-style-type: none"> • Telecom sector advances • Legislative framework for e-government • Malta Government Network (MAGNET) • E-government vision and strategy • Organisational capacity building • E-government standards • Demonstration projects • Consultation with key stakeholders • E-government payment gateway • Local extensions (municipalities) 	<ul style="list-style-type: none"> • Strategic study in 1987 • Government Computerisation Plan in 1989 • Revisions produce Government Computerisation Master Plan in 1998

Table 7.2 (continued)

Performance indicators	Accomplishments of Malta	Accomplishments of Cyprus
Phases of e-government implementation	<ul style="list-style-type: none"> • All knowledge workers online • Registration/authentication set up • Middleware/inter-operability skills • Multi-service delivery channels • Complementary mobile devices • Basic public services online • Communications strategy 	<ul style="list-style-type: none"> • Series of separate projects • Interconnectivity of projects • G2C and C2G service extensions
Primary e-government targets	<ul style="list-style-type: none"> • Deliver first-class government service • Increase citizen participation in government decision-making • Streamline public services and realise efficiency gains 	<ul style="list-style-type: none"> • One computer terminal per desk • Paperless working environment • Global communications • Multi-channel e-government • Data integration and consistency

Prospects for the future of e-government

Although the Governments of Malta and Cyprus place different emphases on various aspects of e-governance, by and large they agree on the importance of acquiring and using it. Their plans for the future, also, coincide. Both governments' websites feature a history of what has been accomplished to date and an outline of what remains to be done. The high degree of similarity reflects, to a considerable degree, the constraints that all governments face in adopting an electronic infrastructure.

In the beginning, the goals and objectives were set through either a master plan or a series of mini-plans and, by implication, the vision for e-government enhancement. In the cases of Malta and Cyprus, they both developed a larger overview or broad perspective very early on.

Since funds and personnel were limited, certain sub-systems were built first and others followed. It is usually wise to choose projects with a high likelihood of success to get started and build momentum, and to use these to give a public profile to the process as a way of winning stakeholder support. Both Malta and Cyprus proceeded in this way.

The current phase of e-governance implementation in Malta and Cyprus is that of system integration and service extension. Legacy technologies have to be interfaced with newer ones, interoperability has to be achieved and the system has to be user friendly enough for both internal government operations and external public users. This phase is also well underway, and in the process there have been some unanticipated glitches that have had to be ironed out. However, that is now being done, with the result that both internal and external users of e-government are increasing the uptake of the services that are available.

The final phase, which is something to work towards, is the active communication and participation of both government officials and members of the public in policy consultation, regulatory implementation and system consolidation that can only come from extended usage and growing public confidence.

The role of international principles and practice

The e-governance achievements of the Malta and Cyprus governments compare very favourably with international expectations. However, there was no policy to formally apply the elaborate procedures and check-lists recommended by the UN, OECD and World Bank, for the good reason that doing so would have been too expensive, too time-consuming and too labour intensive. There is a rule of thumb among systems analysts and project managers during the implementation of any process improvement implementation, of which e-governance enhancement is an example. The rule states that the extent to which formal methodology is applied depends directly on the size of the project: in large projects (in terms of budgets, personnel and equipment deployment), formalised administration techniques will represent only a small part of the project overhead, but can lead to significant economies. On the other hand, in small projects, such techniques would consume too many resources compared to any savings they might produce. In these circumstances, occasional outside reviews and helpful suggestions are probably the most effective methods of evaluating performance and keeping projects on track.

Lessons learned from e-governance projects

In their own words, officials from the Governments of Malta and Cyprus reported the following lessons learned.

They were asked: what important lessons have been learned from the process of enhancing e-governance? Is more money, planning or time needed?

Malta replied:

- *Better marketing of services to increase take-up*
- *More time needed to implement services*

Cyprus responded:

The important lesson learned from the process of enhancing e-governance is that most failures of e-governance projects are not technical failures, but organisational failures. As a result, to ensure successful implementation, one needs to place strong emphasis on:

- *Strong leadership at different levels to provide a strategic vision*
- *Gaining management and user commitment*
- *Putting in place effective project co-ordination and change management processes*
- *Re-skilling of personnel, to anticipate the changes that accompany e-government initiatives and new roles*

Unifying theme of lessons learned

We have summarised the lessons learned as follows:

- Better marketing of services for uptake
- More time needed to implement services
- Most e-governance failures are organisational rather than technical

In both Malta and Cyprus, the lessons learned were that ‘peopleware’ (personnel and organisations) presented a bigger challenge to implementing e-governance than either hardware or software.

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