

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, channelised 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*