

# JRC Scientific and Technical Reports



## The Development of eServices in an Enlarged EU: eGovernment and eHealth in Malta

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## PREFACE

### *Policy context*

At the European Council held in Lisbon in March 2000, EU15 Heads of Government set a goal for Europe to *become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion*. The renewed Lisbon goals of 2005 emphasize working for growth and jobs, and include plans to facilitate innovation through the uptake of ICT and higher investment in human capital.<sup>1</sup>

Information and Communication Technologies, and related policies, play a key role in achieving the goals of the Lisbon strategy. In 2005, the new strategic framework for Information Society policy - i2010<sup>2</sup> - identified three policy priorities: the completion of a single European information space; strengthening innovation and investment in ICT research; and achieving an inclusive European Information Society.

All three priorities, and especially the last one, consider public services to be a key field for the application of ICT, because of the impact that ICT-enabled public services could have on economic growth, inclusion, and quality of life. Within this framework, policy actions have been taken in fields such as e-government<sup>3</sup> and e-health.<sup>4</sup> Public services have also been included as application fields for ICT in the 7<sup>th</sup> Framework Programme for Research and Development<sup>5</sup> and in the ICT policy support programme of the Competitiveness and Innovation Programme (CIP).<sup>6</sup>

### *Research context*

IPTS<sup>7</sup> has been researching IS developments in acceding countries<sup>8</sup> since 2002.<sup>9</sup> The outcomes of this prospective research, which aimed to identify the factors influencing Information Society developments in these countries and the impacts these developments have on society and the economy, point to the need for better understanding the specific contexts in each member state for the take-up of e-applications, in particular eGovernment, eHealth, and eLearning. These key application areas have an impact not only on the relevant economic and public service areas but also on the development of the knowledge society as a whole.

Taking the above into account, IPTS launched a project to support eGovernment, eHealth and eLearning policy developments managed by DG INFSO and DG EAC. The research, which was carried out by a consortium led by ICEG EC in 2005, focused on the three application areas in the ten New Member States<sup>10</sup> that joined the European Union in 2004, in order to build up a picture of their current status and developments in the field, the most important opportunities and challenges they face, the lessons other member states may learn from them, and the related policy options. National experts from each country gathered the relevant qualitative and quantitative data for analysis, in order to develop a meaningful assessment of each country's current state, and trajectory, and to find out the main factors. This allowed them to derive the relevant conclusions in terms of policy and research.

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<sup>1</sup> [http://ec.europa.eu/information\\_society/eeurope/i2010/index\\_en.htm](http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm)

<sup>2</sup> "i2010 – A European Information Society for growth and employment" COM(2005) 229

<sup>3</sup> "I2010 eGovernment Action plan" COM(2006) 173

<sup>4</sup> "e-Health - making healthcare better for European citizens" COM (2004) 356

<sup>5</sup> See <http://cordis.europa.eu/fp7/ict/> and Official Journal L 412 of 30/12/2006

<sup>6</sup> Official Journal L 310/15 of 9/11/2006

<sup>7</sup> Institute for Prospective Technological Studies, one of the seven research institutes that make up the Joint Research Centre of the European Commission

<sup>8</sup> Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia, and Turkey

<sup>9</sup> For a list of complete projects and related reports see <http://fiste.jrc.es/enlargement.htm>

<sup>10</sup> Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia and Slovakia

The IPTS team designed the framework structure for the research, the research questions and methodology. This team and the consortium coordinator jointly guided the national experts in their work through workshops, extended reviews and editing of the various interim reports. Data sources such as international and national survey data, literature, policy documents, and expert interviews were used to capture the most recent situation of the country.

In addition to national monographs describing eGovernment, eHealth and eLearning developments in each country, the project has delivered a synthesis report, based on the country reports, which offers an integrated view of the developments of each application domain in the New Member States. Finally, a prospective report looking across and beyond the development of three chosen domains was developed to summarize policy challenges and options for the development of the Information Society towards the goals of Lisbon and i2010.

### ***eGovernment and eHealth in Malta***

This report presents the results of the research on eGovernment and eHealth in Malta.

First, it describes Malta's government and health system and the role played by eGovernment and eHealth within this system. Then, the major technical, economic, political, ethical and socio-cultural factors of the eGovernment and eHealth developments, as well as the major drivers and barriers for them in the country, are assessed. These provide the basis for the identification and discussion of policy options to address the major challenges and to suggest R&D issues for facing the needs of the country. The report reflects the views of the authors and does not necessarily reflect the opinion of the European Commission. Its content has been peer reviewed by national experts, ICEG EC, and IPTS.

In this study, **eGovernment** (European Commission COM (2003)567) is defined as the use of information and communication technologies in public administrations, combined with organisational change and new skills, to improve public services and democratic processes and strengthen support to public policies. Thus, it encompasses the dimensions of public administration, democracy, governance and policy making.

Furthermore, the vision of eGovernment in the EU for the next decade as a tool for better government in its broadest sense should be taken into account when considering the scope of eGovernment developments. This vision places eGovernment at the core of public management modernisation and reform, where technology is used as a strategic tool to modernise structures, processes, the regulatory framework, human resources and the culture of public administrations to provide better government, and ultimately, increased public value.

The creation of public value is a broad term that encompasses the various democratic, social, economic, environmental and governance roles of governments. Concrete examples of these roles are: the provision of public administration and public services (health, education, and social care); the development, implementation and evaluation of policies and regulations; the management of public finances; the guarantee of democratic political processes, gender equality, social inclusion and personal security; and the management of environmental sustainability and sustainable development.

**eHealth** is defined as the use of modern information and communication technologies (ICTs) to meet the needs of citizens, patients, healthcare professionals, healthcare providers, and policy makers. It makes use of digital data, transmitted, stored and retrieved electronically, for clinical, educational and administrative purposes, both at local sites and at a distance from them. Hence the study looks into the use of ICT in public health policy and prevention of disease, information services to citizens, integrated patient management and patient health records, and telecare and independent living services applications.

From early 2008, all reports can be found on the IPTS website at: <http://ipts.jrc.ec.europa.eu/publications/index.cfm>



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## List of Abbreviations

ADSL	Asymmetric Digital Subscriber Line
CIMU	Central Information Management Unit
DoI	Department of Information of the Government of Malta
DSL	Digital Subscriber Line
EEA	European Economic Area
e-ID	Electronic Identity
ePG	Electronic Payment Gateway
ERM	Exchange Rate Mechanism
EU	European Union
EU10	The new member states joining the European Union on 1st May 2004
EU15	The member states of the European Union before 1st May 2004
EU25	The member states of the European Union from 1st May 2004 till 31st December 2006
EU-8	The new member states joining the European Union on 1st May 2004, except for Cyprus and Malta
EUR	Euro (currency)
GDP	Gross Domestic Product
HIS	Hospital Information System
HIV	Human Immunodeficiency Virus
ICT	Information and Communication Technology
IDABC	Interoperable Delivery of European eGovernment Services to Public Administrations, Businesses and Citizens
IS&E	Information Society and Economy
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
ISSP	Information System Strategic Plan
IT	Information Technology
MAGNET	Malta Government Network
MEU	Management Efficiency Unit
MGC	Malta Geographical Code
MIIT	Ministry for Investments, Industry and IT
NAO	National Audit Office of Malta
NISCO	National Information Society Council
NRI	Networked Readiness Index
NSO	National Statistics Office
NUTS	Nomenclature des Unites Territoriales Statistiques
OECD	Organisation for Economic Cooperation and Development
OPM	The Office of the Prime Minister
PC	Personal Computer
PDA	Personal Data Assistant
PHARE	Pologne-Hongrie Aid a la Reconstruction Économique, the European Union's financial and technical cooperation programme with the countries of Central and Eastern Europe before the accession
PPP	Public-Private Partnership
PSTN	Public Switched Telephone Network
R&D	Research and Development
SME	Small and Medium Enterprises
SMS	Short Message Service
STDs	Sexually Transmitted Diseases
UNDP	United Nations Development Programme
UOM	University of Malta
VAT	Value Added Tax
VoIP	Voice over Internet Protocol
WEF	World Economic Forum



# INTRODUCTION: COUNTRY FEATURES

## Country profile

Malta is an archipelago of islands strategically located at the centre of the Mediterranean Sea, 93 km south of Sicily and 290 km away from North Africa. The Maltese archipelago, which covers a total area of just 316 km<sup>2</sup> and has 140 km of coastline, consists of three inhabited islands, namely Malta, Gozo and Comino, and two uninhabited islands, Cominotto and Filfla. The Maltese islands have a total population of 402,700 people. The main island, Malta, which spans an area of 246 km<sup>2</sup> and extends 27 km lengthwise and 14 km in width, has over 360,000 inhabitants. Gozo, the island on which the remaining 10% of the population lives, covers an area of 67 km<sup>2</sup> and can be reached from the main island by ferry and helicopter. A handful of inhabitants live on the island of Comino. Malta is one of the most densely populated countries in the world with a population density of 1,274 inhabitants per square kilometre.

*Figure 1: Base map of the Maltese Islands*



**Table 1: General country data**

<b>Geography</b>	
Location	Southern Europe (35°50' N, 14°35' E)
Area	316 km <sup>2</sup>
<b>Administrative Organisation</b>	
Political regime	Independent since 1964; Parliamentary Republic since 1974
Capital	Valletta
Development regions	NUTS-2: Malta, Gozo (2)
<b>Population and Labour Force (2005)</b>	
Total population	402,700 persons, of which: - Maltese: 97%
Population density	1,274 inhabitants per km <sup>2</sup>
Life expectancy	76.7 years
Urban population	90% of total population
Literacy rate	92% (of adult population)
Labour market participation rate	53.9% (of population over 15 years)
Unemployment rate (ILO)	7.2%
<b>Macroeconomic data (2005)</b>	
GDP / capita (PPS)	69.4% of EU25; 64.2% of EU15
Inflation rate	2.5%
Government debt /GDP	74.7%
Current account deficit/GDP	10.2%
Openness of the economy	1.6
<b>Information Society Indicators</b>	
Mobile phone penetration rate	77%
Broadband penetration rate	12.8%

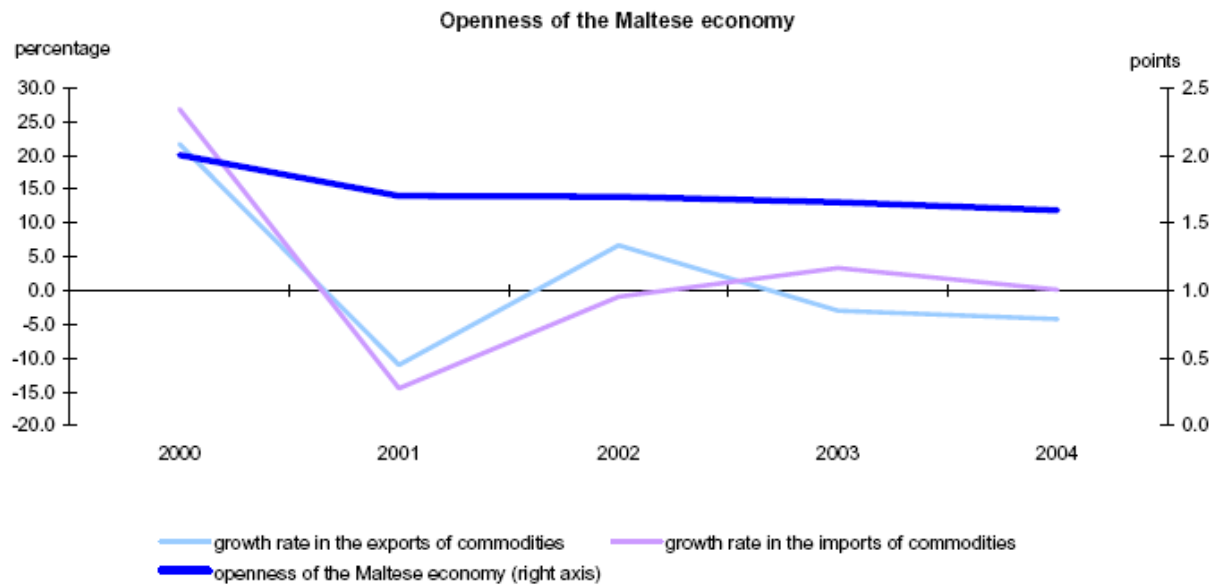
Source: National Statistical Office, Malta

## Economic situation

**Level of economic development and main structures.** With a labour force of around 145,000, Malta's GDP amounted to €4.3 billion in 2004. On purchasing power parity basis, Malta's GDP per capita is currently estimated to be around 69% of the EU25 average. This is the fourth highest among the EU's new Member States, behind Cyprus, Slovenia and the Czech Republic, though still below that of the EU15 countries with the lowest GDP per capita, namely Portugal, Greece and Spain.

The Maltese economy is small and very open: the share of exports and imports in GDP exceeds 150% which makes it an extremely open economy in real terms.

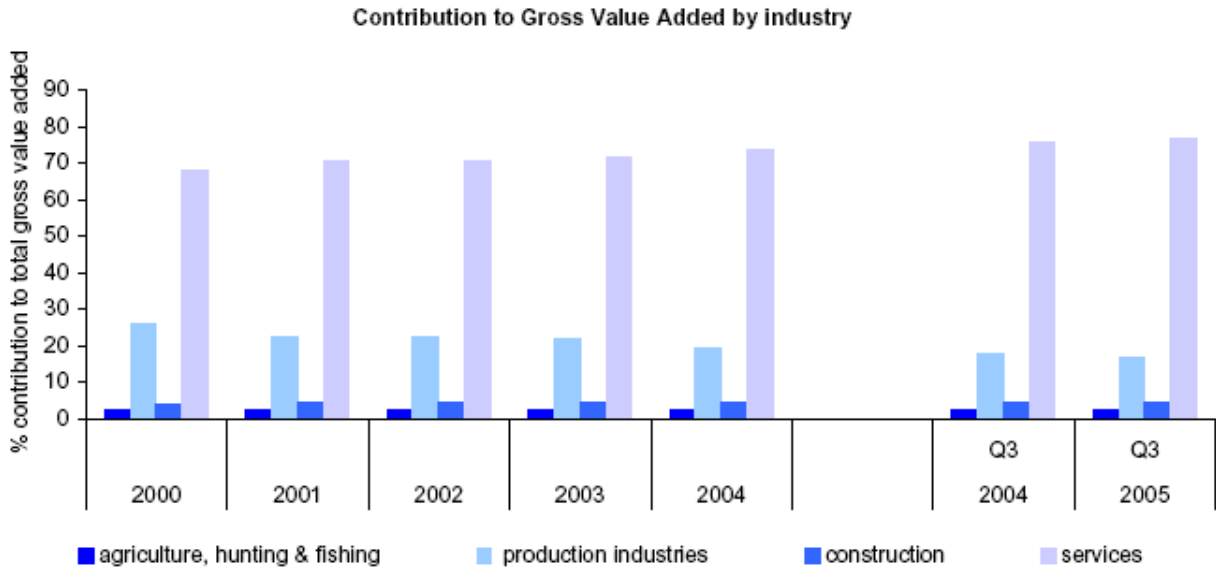
*Chart 1: Exports and imports<sup>11</sup>*



The economy is rather well diversified. Primary activities, consisting of agriculture and fishing, and construction and quarrying, contribute less than 10% of GDP. The manufacturing sector generates 20% of gross value added, down from 25% in 2000. The gradual decline in manufacturing activity has been mirrored by a steady increase in tertiary activities, with the contribution of the services sector, in which tourism is the major contributor, fast approaching 75% of gross value added. The contribution of financial services and information technology (IT) services is expanding rapidly, but still accounts for a relatively small share of GDP.

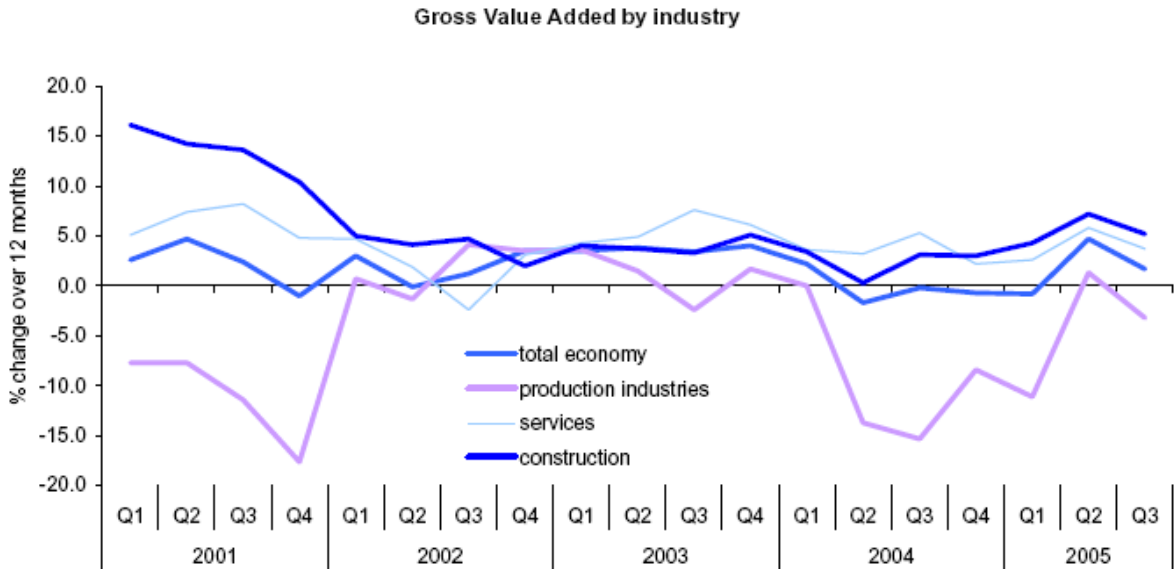
<sup>11</sup> National Statistical Office, Structural Indicators, 3rd quarter 2005, [http://nso.gov.mt/docs/2005\\_Q3.pdf](http://nso.gov.mt/docs/2005_Q3.pdf).

**Chart 2: Contribution to gross value added<sup>12</sup>**



The principal growth areas of the Maltese economy are within high-tech manufacturing, IT-related services and financial services. Growth in high-tech manufacturing has only partially mitigated the persistent decline in manufacturing activity resulting mainly from Malta’s loss of cost-competitiveness to cheaper foreign investment bidders in Eastern Europe, North Africa and Asia. The services sector has been developing rather steadily, with relative declines in tourism, which remains the major contributor, being compensated for by growth in IT-related services and financial services. Meanwhile, the construction industry, which boomed in the late 1990s, has registered slower growth in recent years.

**Chart 3: Gross value added<sup>13</sup>**



<sup>12</sup> National Statistical Office, Structural Indicators, 3rd quarter 2005, [http://nso.gov.mt/docs/2005\\_Q3.pdf](http://nso.gov.mt/docs/2005_Q3.pdf).

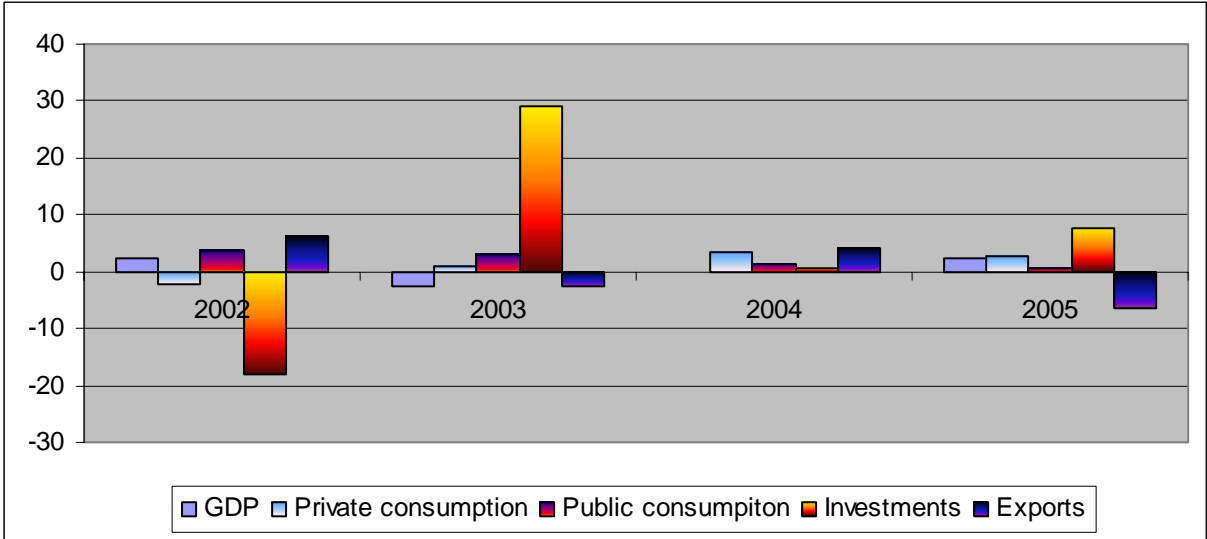
<sup>13</sup> National Statistical Office, Structural Indicators, 3rd quarter 2005, [http://nso.gov.mt/docs/2005\\_Q3.pdf](http://nso.gov.mt/docs/2005_Q3.pdf).

**Economic growth.** The Maltese economy has been performing below its potential in recent years: GDP at market prices in Purchasing Power Standards (PPS) showed a decrease for most of the years from 2000 onwards compared to the EU average.<sup>14</sup> Exogenous shocks from rising energy prices have affected the Maltese economy negatively, while the international economic environment has become more competitive especially in terms of FDI attraction. Domestically, aggregate demand was dampened by fiscal consolidation, while private investment was extremely volatile and affected sharply by competitive challenges both in domestic and export markets.

While real GDP growth averaged just over 5% between 1990 and the year 2000, Malta was hit hard by the international economic slowdown of recent years. Exports as well as imports of commodities have been on the decline since 2000, triggering sluggish growth across all sectors of the economy. This reflects the high vulnerability of the open micro Maltese economy to foreign shocks. Malta’s economic performance has in fact been rather poor since 2000, with real GDP growth rates being negative in 2001 and 2003, and marginal in 2002 and 2004 at 2.2% and 1.5% respectively.

In recent years, the Maltese economy has experienced subdued growth in private and general government final consumption expenditure, while gross fixed capital formation (GFCF) showed significant fluctuations.<sup>15</sup> The low positive or negative growth rates in consumption reflect the fiscal consolidation. The external sector has contributed negatively to real GDP growth in 2003 and 2005, and by a lesser extent also in 2004.<sup>16</sup> Exports of goods and services are significantly influenced by the performance of a major company in the semiconductor sector.

*Chart 4. The changes in GDP and its main components (%)*



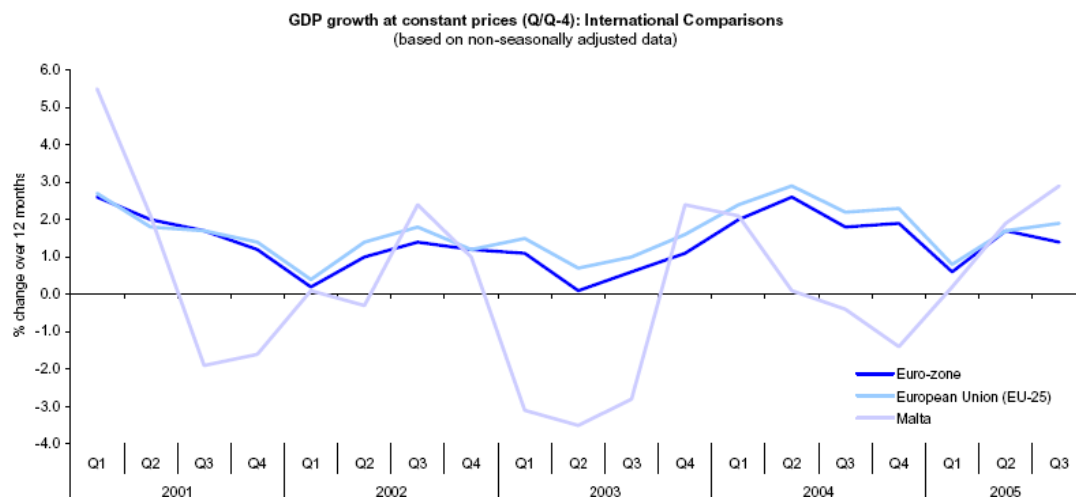
The average real GDP growth rate of 1.2% for the five-year period 2000 – 2004 makes Malta the weakest economic growth performer among the new Member States. Various studies conducted in the run-up to EU accession anticipated that Malta would be in a position to enjoy substantial growth rates upon becoming a full member of the EU. While actual growth rates have so far remained modest, medium to long-term prospects are positive, with a real GDP growth rate of 1.7% for the first three quarters of 2005 hinting at a slow take-off, even though government estimates for 2006 stand at a prudent 1.1% in real terms.

<sup>14</sup> Malta’s GDP per head in PPS declined from 77.8 per cent of the EU 25 average in 2000 to 69.5 per cent in 2005.

<sup>15</sup> While the overall expectations were on growth, sales were the leading factors behind the volatile investment performance, gross fixed capital formation was influenced by one-off exceptional transactions, particularly in 2003, whilst strong investment activity was registered in 2005.

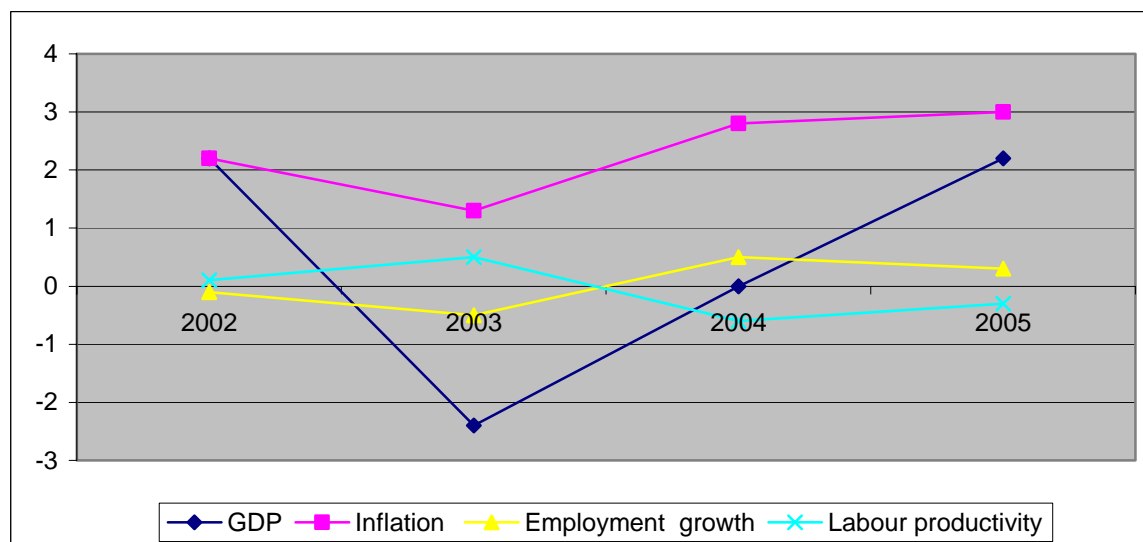
<sup>16</sup> In particular, exports of goods and services contracted in 2003, increased in 2004 but declined again in 2005.

**Chart 5: GDP growth: international comparisons<sup>17</sup>**



**Employment and labour market indicators.** The growth of employment has contributed positively to the GDP growth in recent years. At the same time the volatility of gross fixed capital formation was reflected in the slowdown of productivity growth which became negative in 2004-2005. Malta's national competitiveness is dependent on labour productivity. Labour productivity as measured by GDP in PPS per person employed, relative to EU25 (EU25=100), fell by 1.3 percentage points in 2005 which followed the decline of 2.5 percentage points and 2.7 percentage points in 2003 and 2004 respectively. Over the period 2000 to 2005, Malta's labour productivity declined by 9.8 percentage points.

**Chart 6. Inflation and the main contributing factors to GDP growth**

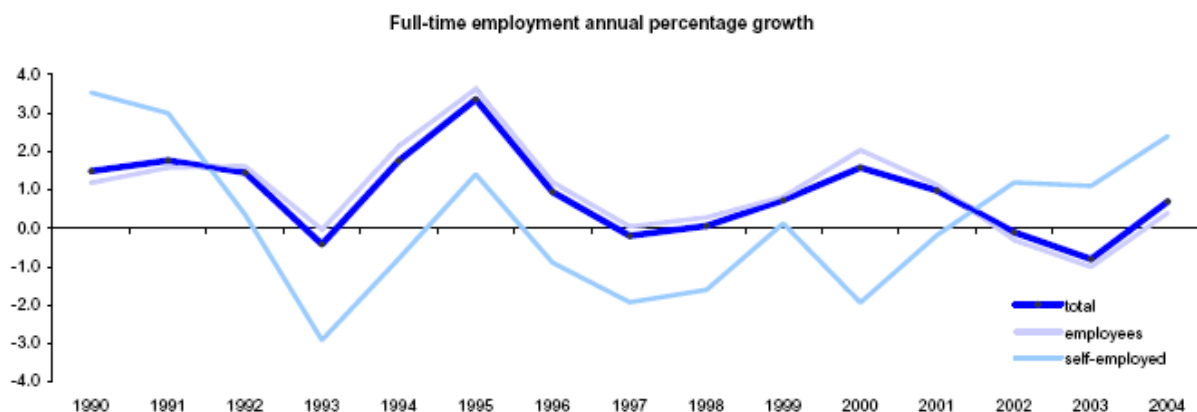


Malta has enjoyed acceptable levels of employment throughout the past decade. The gainfully occupied population increased by 7.4% over this ten-year period. Growth in full-time self-employment has overtaken growth in full-time employment in recent years as more people seek self-employment opportunities, mainly in the steadily developing services sector, in the face of job losses in manufacturing.

<sup>17</sup> National Statistical Office, Structural Indicators, 3rd quarter 2005, [http://nso.gov.mt/docs/2005\\_Q3.pdf](http://nso.gov.mt/docs/2005_Q3.pdf).



**Chart 7: Growth in full-time employment<sup>18</sup>**



The unemployment rate also increased gradually from an average of 4.5% in the first half of the 1990s to an average of 5.5% in the second half of the 1990s. In 2000, unemployment fell to 5.0% only to rise again to 5.7% by 2003. The unemployment rate must be considered in the light of a relatively low female participation rate, particularly when comparing employment levels in the Maltese economy with those of other European countries in which the female participation rate is much higher.

**Chart 8: Unemployment**



The long-term unemployed amount to just over 2% of the labour force. The age distribution of those registering for work gives some insight into the composition of unemployment in Malta. Around 60% of the unemployed are over 30 years of age, with more than 25% being at least 45 years old. Strikingly, there are more unemployed who are under 25 years of age than unemployed who are over 45 years of age. In fact, almost 30% of the unemployed are under 25 years of age. This is a source of major concern since it indicates a lower degree of employability in the younger generation. It appears that a significant percentage of those under 25 lack adequate skills for employment and may not be easily trainable, possibly because of literacy limitations. Indeed, a non-negligible amount of youngsters are believed to leave school at the minimum school leaving age of 16 without being able to read and write. This can severely hamper the widespread development of the information society in Malta and give rise to a digital divide, even within the upcoming generations. The adult literacy rate in Malta is among the lowest in Europe at around 92% according to UNDP figures. The attainment of higher levels of literacy is a national priority.

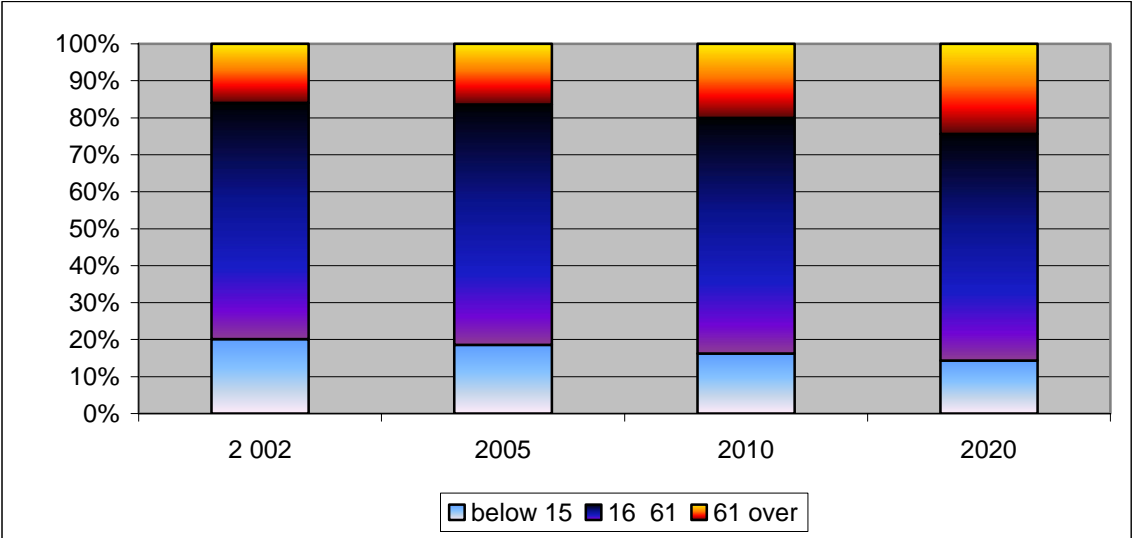
<sup>18</sup> National Statistical Office, Structural Indicators, 3rd quarter 2005, [http://nso.gov.mt/docs/2005\\_Q3.pdf](http://nso.gov.mt/docs/2005_Q3.pdf).

**Demography indicators and population developments.** Malta is the smallest and mostly densely populated Member State in European Union. Its population density rose between 1931 and 2004 from 764 to 1,276 people per square kilometre. Its average population density is 11 times higher than the average EU25. Malta’s population density is further accentuated by the large annual influx of tourists.

Its population growth rate is 0.4% per annum, while the total population is 402,700 with which it is one of the smallest countries in Europe.

Malta, like many other countries, faces an ageing population. In 2002, the working age population accounted for approximately 64% of the total population. During the same year, the elderly population (aged over 61 years) constituted some 16% of the population. The chart shows the drastic decline of the number of young people between 2002 and 2005, indicating the shift to an ageing population. As the National Strategic Reference Framework predicts this trend will continue with the percentage of people aged over 61 expected to reach 33.8% by 2050.

*Chart 9. The changes in the composition of the population*



Source: National Statistical Office 2007

**General government indicators**

Government and public enterprises generate a significant portion of GDP, which is, however, declining over time partly as a direct result of the economic restructuring exercise that is currently under way. This restructuring programme is reducing the role of Government in the economy, as well as the share of public sector employment, particularly through a programme of the privatisation of public enterprises.

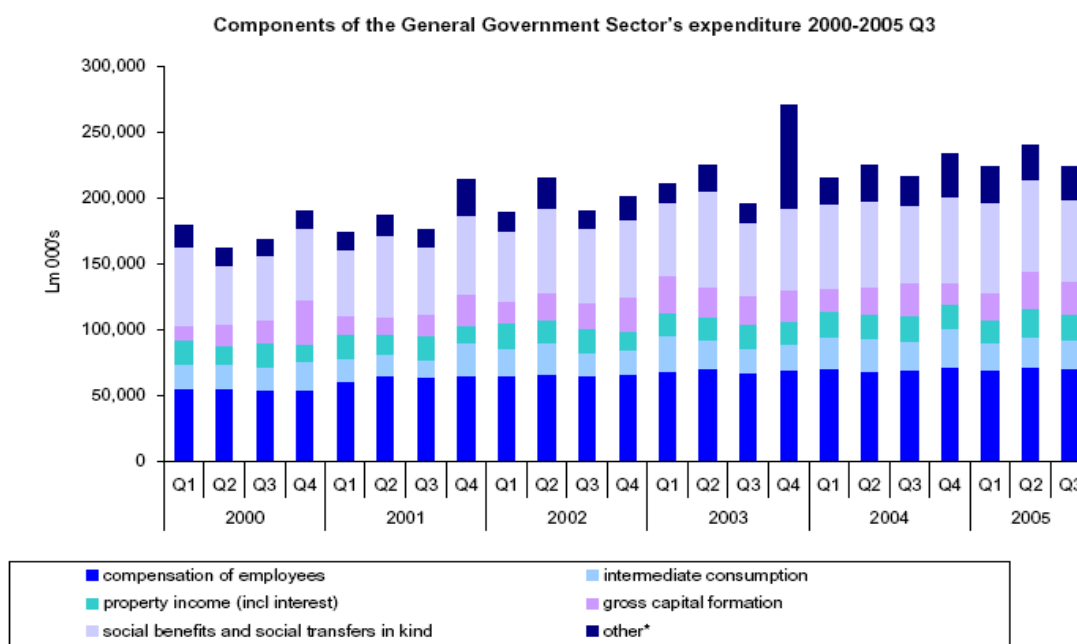
**Table 2: Shares in full-time employment<sup>19</sup>**

Year	Private Sector	Public Sector
1995	62.0%	38.0%
1996	62.0%	38.0%
1997	62.2%	37.8%
1998	62.6%	37.4%
1999	64.6%	35.4%
2000	64.7%	35.3%
2001	64.7%	35.3%
2002	64.9%	34.3%
2003	65.1%	34.2%
2004	66.7%	33.3%

Source: National Statistical Office, 2007

Government has traditionally played a dominant role in the Maltese economy, as is attested both by the share of its expenditure in GDP and by a history of pervasive direct controls which have only recently been dismantled. These factors have bred a culture of state-dependence and stifled competitiveness and private initiative, to the detriment of economic development in the country. They have also burdened the country with a structural budget deficit which has persisted since the mid-1990s. It is only recently that adequate measures to address this fiscal imbalance have been implemented with appropriate rigour and have started to bear fruits, as fiscal consolidation became a more pressing priority in view of the Maastricht convergence criteria.

**Chart 10: General government expenditures<sup>20</sup>**

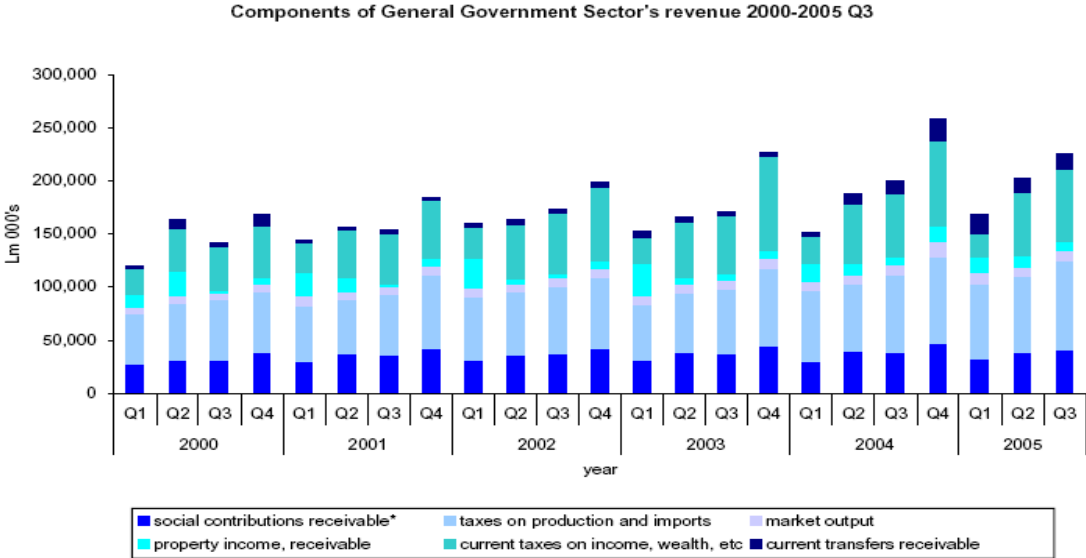


<sup>19</sup> Percentage satisfied with own health = percentage of people being very and fairly satisfied with their own health; 2002 data; Source: European Foundation for the Improvement of Living and Working Conditions, 2004. Prevalence of long-term illness = percentage reporting having a long-term illness or disability; Source: Eurobarometer 2002. Doctors per 100,000 inhabitants = total number of practising physicians or doctors per 100,000 inhabitants; Newest data available (EU15 and EU25 averages: 2002); Source: Eurostat 2005. Health expenditure as percentage of GDP; Source: Eurostat 2002.

<sup>20</sup> National Statistical Office, Structural Indicators, 3rd quarter 2005, [http://nso.gov.mt/docs/2005\\_Q3.pdf](http://nso.gov.mt/docs/2005_Q3.pdf). Lm 1.00 = €2.3294

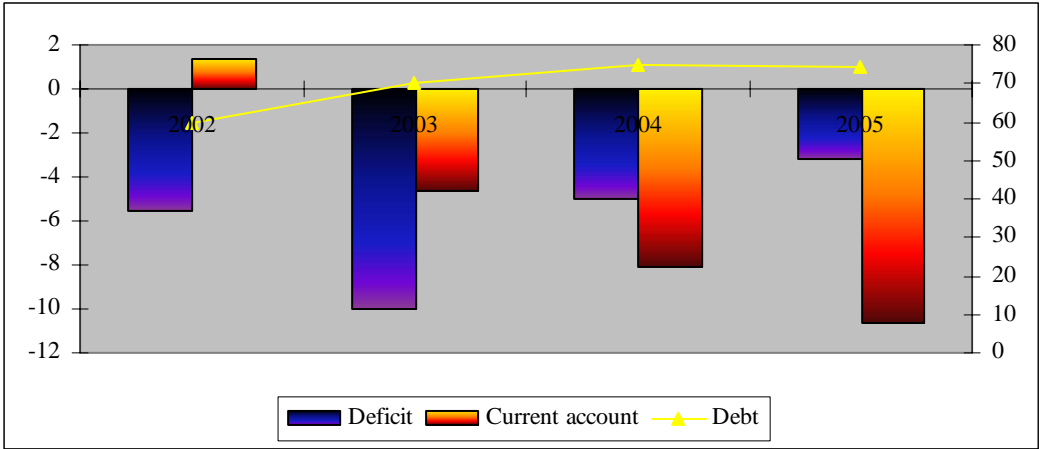
The share of public administration in GDP has increased over the past years, partly as a result of considerable increases in wages and salaries in the public sector and partly because Malta's bid to join the EU has increased demands on public administration during the negotiation process. It is a known fact that small countries tend to have a proportionately larger Government than their larger counterparts precisely because they are too small to benefit from scale economies at the governmental level. Government expenditure has averaged a hefty 20% of GDP over the past decade, the bulk of this consisted of wages and salaries to public sector employees and social benefits.

**Chart 11: General government revenues<sup>21</sup>**



In recent past years, Malta has registered relatively high fiscal deficits. However, the fiscal deficit has recently been contracting: general government deficit declined from 5.0% in 2004 to 3.2% in 2005. This decline primarily reflected growth in revenue, which exceeded the increase in expenditure. The fiscal deficits incurred over the years have been reflected in rising debt-to-GDP ratios. General government debt as a percentage to GDP increased from 56.4% in 2000 to 74.9% in 2004. In 2005, the debt to GDP ratio declined to 74.2% and fiscal developments project a further decline in the debt ratio in 2006 to 68.7% of GDP.

**Chart 12: Government deficit and debt<sup>22</sup>**



<sup>21</sup> National Statistical Office, Structural Indicators, 3rd quarter 2005, [http://nso.gov.mt/docs/2005\\_Q3.pdf](http://nso.gov.mt/docs/2005_Q3.pdf). Lm 1.00 = €2.3294

<sup>22</sup> National Statistical Office

## Health sector indicators

The demographic indicators of Malta are relatively good compared with both the old and new member states. Her population is relatively young, though ageing (as witnessed in the shift of the population aged 65 and over between 1995 and 2000) has already begun too. Among the NMS the share of those aged 65 and over is the third lowest in Malta after Cyprus and Slovakia. On the other hand life expectancy is higher or is on par with the EU10 and EU15 averages and crude death rates are significantly lower than in the two country groups.

Even with good demographics it is striking to observe that the Maltese standardised death rates show quite similar patterns to other NMS as there are certain typical death causes, where the crude figures exceed the averages of the EU15 by wide margins. Diabetes, diseases of the circulatory and respiratory systems are considerably higher in Malta than in the EU15 and even the EU10, repeating the pattern of health problems in other New Member States.

**Table 3. General data on health**

	1995			2000			2003		
	MT	EU15	EU10	MT	EU15	EU10	MT	EU15	EU10
Life expectancy at birth (years)	77.33	77.51	71.7	78.24	78.74	73.69	78.63	79.08	74.3
Crude death rate (1,000 people)	7.3	10.05	11.09	7.71	9.75	10.45	7.94	9.76	10.56
Proportion of population aged 65 and over (%)	11	15.4	12.13	12.1	16.3	12.9	-	16.8	14.1
Causes of death (standardized death rate)									
diseases of the circulatory system (100,000 people)	318.57	288.4	556	326.05	245.63	469.8	289.05	233.82	452.7
diabetes (100,000 people)	22.3	14.22	12.61	18.86	13.58	13.0	17.85	14.36	13.05
diseases of the respiratory system (100,000 people)	62.99	57.83	43.98	68.36	55.76	44.7	71.51	51.27	42.7
cancer (100,000 people)	198.18	193.51	227.97	170.98	183	224.5	157.54	178.3	221.5
suicide and self-inflicted injury (100,000 people)	4.58	11.63	20.29	5.82	10.37	19.2	4.72	10.15	18.0

Notes: 1 – EU10 average based on calculations without Cyprus

Sources: WHO, European health for all database 2006

As shown in Table 4 below, the level of healthcare expenditure in Malta stands between the average spending of the EU10 and EU15, and it has been increasing fast in recent years. Between 1998 and 2003 health expenditure measured on Purchasing Power Parity increased by 29%, which is lower than in the case of the EU15 (31%) and EU10 (43%).

The share of public expenditures on health to total was somewhat higher than in the two other country groups though the differences were indeed very small (80% for Malta, 75% for the EU10 and 78% for the EU15). However the level of healthcare expenditures in percentage of the GDP is considerably higher in Malta (9.3% in 2003) than in the EU10 (average was 5.3% in 2003) and EU15 (average for 2003 was 7.2%).

Finally, it is interesting to note that the share of private expenditures in total expenditures on health has been declining in recent years.

**Table 4. General financial data on healthcare sector**

	1998			2000			2003		
	MT	EU15	EU10	MT	EU15	EU10	MT	EU15	EU10
Total health expenditure, PPP \$ per capita	1112	1933.73	645.33	1209	2160.02	699.33	1436	2543.77	925.33
Public expenditure on health, PPP \$ per capita	848	1454.23	481.07	925	1627.74	526.04	1150	1937.27	698.1
Total health expenditures in percentage of GDP	7.6	-	6.5	8	-	7	9.3	-	-
General government expenditure on health as percentage of total expenditure on health	76.2	-	73.9	76.5	-	72	77.1	-	69.24
Private expenditure on health as percentage of total expenditure on health	23.8	-	26.1	22.2	-	28	19.9	-	21.86
General government expenditure on health as percentage of total government expenditure	11.8	-	11.3	14.2	-	11	15.5	-	11.24

Source: WHO, European health for all database 2006

### General ICT usage indicators

It has been argued that the much talked about “Information Society for all” can only be made possible if people have increased access to information and communications technologies. Consumption expenditure by households on telecommunications services increased in real terms from €120 million in 1999 to €173 million in 2003, reflecting mainly the significant growth in mobile and Internet penetration in Malta. This expenditure did not only grow in absolute terms, but more significantly, it grew in relation to other goods and services consumed by Maltese households. In fact, the share of expenditure on telecommunications services in households’ total expenditure increased from 4.7% in 1999 to 5.9% in 2003.<sup>23</sup>

**Table 5. Basic information society indicators for Malta<sup>24</sup>**

Percentage of households with Internet access	46.5%
Percentage of enterprises with Internet access	94%
Percentage of individuals using the Internet at least once a week	25.5%
Percentage of households with a broadband connection	60.9%
Percentage of enterprises with a broadband connection	78%

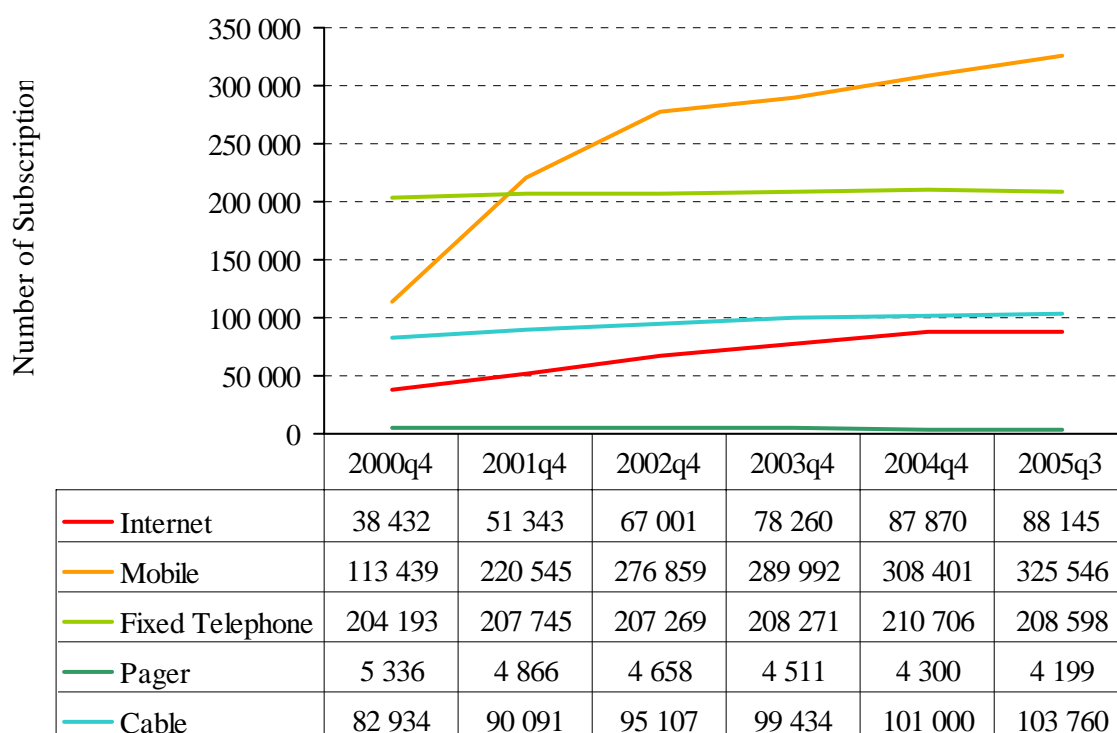
Source: IDABC eGovernment Factsheet Sept 2006

Regarding the various communication access channels, Internet penetration and mobile phones were growing rapidly in Malta between 2000 and 2005 – access more than doubled, nearly tripled. Fixed telephone and cable, on the other hand, have not increased significantly in these five years.

<sup>23</sup> Malta Communications Authority (2004)

<sup>24</sup> IDABC eGovernment Factsheet Sept 2006

**Chart 13: ICT usage indicators<sup>25</sup>**



Source: National Statistical Office: Information Society Indices, January 2006

In terms of broadband developments, it must be taken into account that Malta is a small country in which there are approximately 128,000 residential units and 31,000 non-residential units.<sup>26</sup> The electronic communications networks servicing the country are therefore small-scale and the market is limited. Notwithstanding this, the electronic communications sector has experienced steady growth, both in terms of the number of operators and the variety of services offered, over the past decade. One of the key indicators of the state of a country's development is broadband take-up. In December 2005, Malta's broadband penetration rate reached 12%, slightly below the average EU25 penetration rate which stood at 12.9%.<sup>27</sup>

There are two forms of broadband delivery technologies available in the Maltese market: DSL (digital subscriber line) and cable modem access. In 2000, Datastream Ltd. (a subsidiary of Maltacom plc, the fixed line PSTN operator) and Melita Cable plc (the cable TV operator) started providing broadband access through DSL and cable modems respectively. In just over 5 years, more than 48,500 broadband connections were deployed. Since broadband became available in Malta, the retail market has been split between the two technologies at a fairly constant ratio of around 60:40. In July 2006, there were approximately 27,000 DSL connections and 21,000 cable modems giving a 56:44 split.<sup>28</sup> It is probable that DSL is the prevalent technology because all ISPs can retail the service, while cable modems are only provided by the cable operator's own ISP, Video on Line.

<sup>25</sup> National Statistical Office: Information Society Indices, January 2006, <http://www.nso.gov.mt/statbase/>

<sup>26</sup> National Statistical Office: Information Society Indices, January 2006, <http://www.nso.gov.mt/statbase/>

<sup>27</sup> Source: Malta Communications Authority

<sup>28</sup> Source: Malta Communications Authority

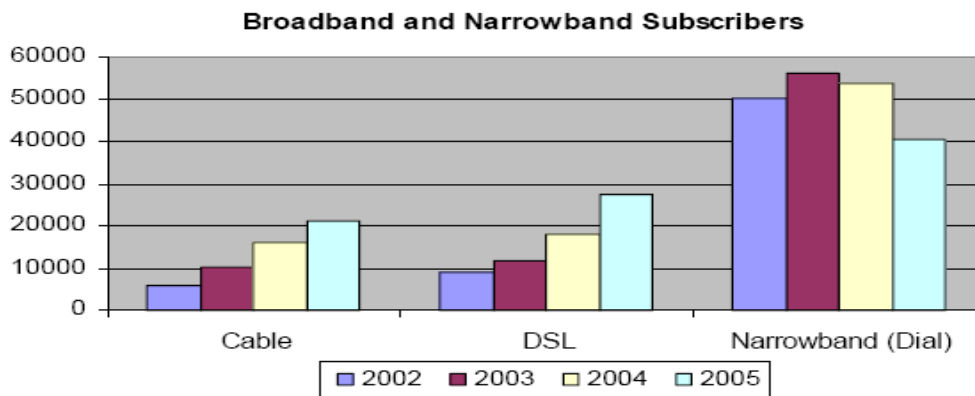
**Table 6: General broadband data<sup>29</sup>**

	12/02	12/03	12/04	12/05
DSL coverage (% of population)	95%	95%	95%	99%
DSL subscribers	10,000	12,000	21,000	30,000
DSL penetration (% of population)	2.5%	3.0%	5.2%	7.5%
Cable modem coverage (% population)	81%	81%	81%	95%
Cable modem subscribers	8,000	10,000	16,000	21,000
Cable modem penetration (% population)	2.0%	2.5%	4.0%	5.2%
FTTH subscribers	0	0	0	0
PLC subscribers	0	0	0	0
WLL subscribers	0	0	0	0
Satellite subscribers	12	12	12	12
FWBA subscribers	0	0	0	0
WLAN subscribers	0	0	50	100
Cellular networks (EDGE, UMTS)	0	0	0	0
Total	18,012	22,012	37,012	51,012
Total penetration (% population)	4.5%	5.5%	9.2%	12.7%

Around 56% of the Maltese residential and non-residential units have an Internet connection. Between 2003 and 2005, the percentage of units with an Internet connection rose by more than 6%. Moreover, broadband subscriptions continued to increase whilst the number of narrowband subscribers decreased as more users upgraded to broadband. In the third quarter of 2005, the number of broadband subscribers surpassed that of narrowband subscribers and therefore broadband became the predominant Internet access technology in Malta. The share of broadband and narrowband stood at 55:45 respectively by December 2005.

Typical broadband connection speeds vary from 1 Mbps to 4 Mbps with 2 Mbps being the most common. Most tariff plans are based on monthly flat rates, depending on speed and download limits. During the last quarter of 2004, the DSL incumbent launched a pay-per-use package for its users. For occasional users, this payment plan worked out to be more economical than dial-up Internet and its popularity increased rapidly. Take-up was also boosted when in October 2004 both DSL and cable broadband providers doubled connection speeds at no additional charge. A further gratuitous increase in speed was effected a year later in October 2005. The monthly cost of a 2 Mbps connection is around 30 Euros. A pay-per-use DSL connection of 1 Mbps, with 35 hours of usage in a 30-day time window costs 18 Euros.

**Chart 14: Broadband and narrowband subscribers<sup>30</sup>**



<sup>29</sup> Source: Malta Communications Authority

<sup>30</sup> Source: MCA



Considering usage indicators, a survey on ICT usage in enterprises was carried out by the NSO in 2003 and its results were published in 2005. The NSO conducted a survey on ICT usage in enterprises<sup>31</sup> in 2003 to measure the level to which Maltese businesses have integrated ICT practices into their normal work routines. Table 4 gives a snapshot of the results of this survey.

**Table 7. ICT usage in enterprises**

<b>Variable</b>	<b>%</b>
Enterprises using ICT	97
Enterprises using Internet	94
Enterprises with website/homepage facilities	73
Enterprises with online facility for marketing	90
Enterprises purchasing supplies over Internet	22
Employees in enterprises regularly using computers	46
Employees in enterprises regularly using Internet	30
Enterprises with IT management systems for orders and purchases	56
E-sales as a percentage of total turnover	13
E-purchases as a percentage of total purchases	18

Source: National Statistical Office 2005

Of the surveyed enterprises, 97% used computers, while 46 % of employees worked with computers at least once a week. Of these, nearly 30% used the Internet at least once a week for work purposes. Teleworking was not limited, with only 11% of surveyed enterprises responding positively to this practice. In 2003, over 90% of enterprises were using the Internet. Nearly 63% were using broadband, while 12% used an ISDN connection, 22% used an analogue modem and nearly 3% used a wireless connection. The bulk of manufacturing enterprises, 86%, use the Internet for information search purposes. A substantial proportion, 46%, responded that they use it in order to monitor market prices, while 34% conduct banking and financial transactions over the Internet. Other purposes for Internet use included obtaining after-sales services, acquisition of digital products, as well as training purposes. A good number of enterprises owned a website, with the overwhelming majority, over 90%, using it for marketing the enterprise's products. 34% used the website to facilitate access to promotional material. A relatively small proportion, just over 17%, responded that they provide after-sales support over the Internet to their clients.

Antivirus software and firewalls are the online security features most prevalent in Maltese enterprises. Nearly 30% of the surveyed enterprises responded that they had encountered a problem with their online security, with 26% stating that computing virus attacks had cost them loss of information or working time. The majority of enterprises seem to be well aware of the importance of updating their computer security features: some 60% responded that they had engaged in this practice in the three months before the reference period.

An interesting statistic emerged from the response to a question on purchases affected by enterprises over the Internet. While across all enterprises, nearly 18% of all procurement was made over the Internet, this percentage stood at over 21% for small enterprises in contrast with a low 4% for employers employing over 250 people. 20% of the surveyed enterprises stated that they had received orders for their products via the Internet. The highest proportion of Internet sales, nearly 47%, was effected with customers in other EU Member States, closely tailed by locally-effected sales, 42%. On the other hand, the proportion of enterprises receiving online payment for their products was relatively small at just over 9%. The practice of installing electronic customer-complaints facilities is not widespread among enterprises, with over 78% responding that these do not feature on their website.

<sup>31</sup> National Statistics Office (2005)

An even higher percentage, 88%, stated that they had not made provision for a dispute-resolving mechanism in their website design.

**Table 8: Basic information society indicators for Malta - eServices<sup>32</sup>**

Percentage of individuals having purchased/ordered online in the last three months.	24,9%
Percentage of enterprises having received orders online within the previous year.	16% (2005)
Percentage of enterprises using the Internet for interacting with public authorities:	
obtaining information	66% (2005)
downloading forms	60% (2005)
returning filled forms	45% (2005)

Source: IDABC eGovernment Factsheet Sept 2006

Regarding key indicators of using the Internet for eBusiness or eGovernment services, nearly one-fourth of the population has purchased online, while 16% of the enterprises received orders online in 2005.

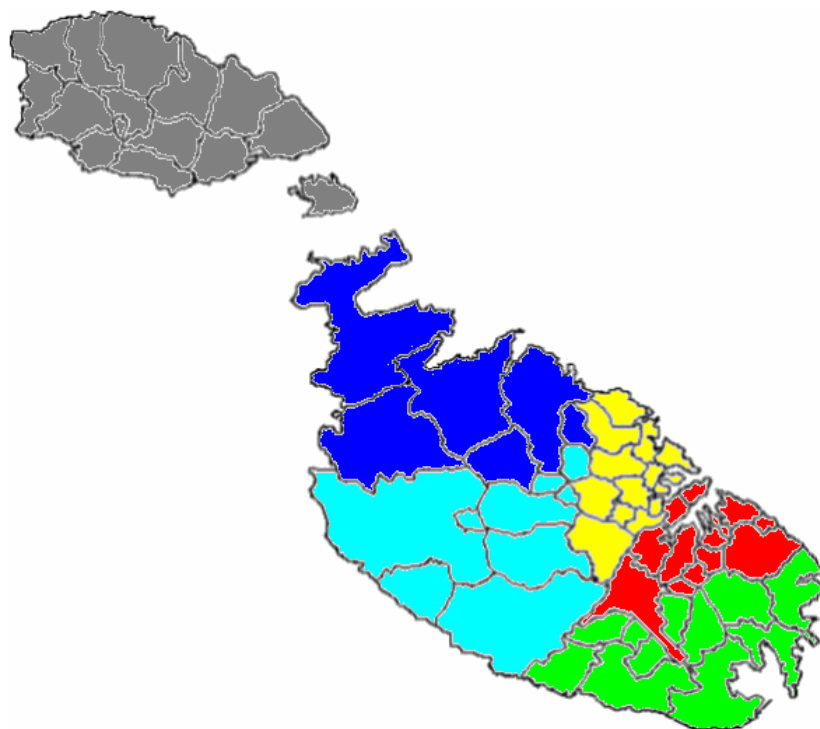
### **Regional aspects**

Regarding the regional aspects, Malta is a very small country and is officially made up of just two regions, one of which is the Island of Malta and the other is the Island of Gozo, regional differences do exist. The limited regional statistical data that is available indicates that there are some tangible regional socio-economic differences between different parts of the islands. The National Statistics Office (NSO) has developed the Malta Geographical Code (MGC) for the classification of Maltese territorial units in accordance with the requirements of the *Nomenclature des Unités Territoriales et Statistiques* (NUTS) as used on the European mainland. The figure below illustrates the districts derived from the MGC that will be referred to when quoting the available regional statistics in this report.

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<sup>32</sup> IDABC eGovernment Factsheet Sept 2006

**Figure 2: MGC Districts<sup>33</sup>**



- **Southern Harbour:** Zabbar, Xghajra, Valletta, Tarxien, Santa Lucija, Paola, Marsa, Luqa, Kalkara, Senglea, Floriana, Fgura, Cospicua, Vittoriosa
- **Northern Harbour:** Ta' Xbiex, Swieqi, Sliema, Santa Venera, San Gwann, St. Julians, Qormi, Pieta', Pembroke, Msida, Hamrun, Gzira, Birkirkara
- **South Eastern:** Zurrieq, Zejtun, Safi, Qrendi, Mqabba, Marsaxlokk, Marsascala, Kirkop, Gudja, Ghaxaq, Birzebuzia
- **Western:** Zebbug (Malta), Siggiewi, Rabat (Malta), Mtarfa, Mdina, Lija, L-Iklin, Dingli, Balzan, Attard
- **Northern:** St. Paul's Bay, Naxxar, Mosta, Mgarr, Mellieha, Gharghur
- **Gozo and Comino:** Rabat (Gozo), Fontana, Ghajnsielem and Comino, Gharb, Ghasri, Kercem, Munxar, Nadur, Qala, San Lawrenz, Sannat, Xaghra, Xewkija, Zebbug (Gozo)

Regional statistics on many topics are still largely unavailable and possibly of little relevance due to the small size of the country, but the last NSO survey on ICT usage in households does include some regional indicators. According to this survey, Internet access in Maltese households stood at 31.3% in 2002. Regional indicators show that the highest penetration was in the Northern district with 36.9% of the households having access. Internet access in the Southern Harbour district was at the other end with only 23.8% of the households in this district having access to the Internet.<sup>34</sup> These regional differences in penetration rates largely reflect regional differences in income levels. The Northern district, where penetration is highest enjoys a relatively high level of income, whereas the Southern Harbour district is the most depressed region. Information on total household income was also collected in the NSO's ICT usage survey. This enabled the NSO to produce indicators related to accessibility according to the income bracket of the household. As expected, the lowest penetration of Internet was in the €0-€5,000 income group where only 3.7% of the households within this group had access to the Internet at home. The €9,000-€24,000 income group represents the highest accessibility group with 67.5%. Interestingly, 58.8% from the 88,650 households that still did not have access to

<sup>33</sup> Based on the local council map of the Malta Environment and Planning Authority (MEPA)

<sup>34</sup> NSO (2003)

the Internet indicated that the main reason for not having Internet at home was that they considered the content not useful or not required. Only 3.4% or 3,050 households of those without Internet access indicated high access costs as the main reason. This observation points to another pertinent factor that has regional connotations. Lack of accessibility to ICTs may be more of an educational rather than a financial issue. Educational attainment broadly follows the same pattern of regional disparity as income levels and ICT penetration rates.

## **I: GOVERNMENT AND HEALTH INSTITUTIONS AND SYSTEMS**

### **I. 1. The institutional structure of general government**

Malta is a parliamentary representative democratic republic with a multi-party system. Executive authority is vested in the President of Malta. The president is elected by the House of Representatives for a five-year term. He appoints as Prime Minister the leader of the party with the majority of seats in the unicameral House of Representatives. The Prime Minister of Malta is the Head of Government. The President also nominally appoints, upon recommendation of the Prime Minister, the individual ministers. Ministers are selected from among the members of the House of Representatives, which usually consists of 65 members, elected by popular vote on the basis of proportional representation to serve five-year terms. Bonus seats are given to a party which gains an absolute majority of votes but not a Parliamentary majority, following a constitutional amendment passed prior to the general election of 1987 to ensure that the party that obtained more than 50% of the popular vote would have a majority of seats in Parliament and would thereby form a Government.

Malta has a highly centralised system of government administrated directly from the capital, Valletta. Executive power is exercised by Government. Legislative power is vested in both Government and Parliament. The present Government is made up of the following Ministries:

- Office of the Prime Minister
- Ministry of Finance
- Ministry for Justice and Home Affairs
- Ministry of Education, Youth and Employment
- Ministry for Tourism and Culture
- Ministry for Competitiveness and Communications
- Ministry for Resources and Infrastructure
- Ministry for Gozo
- Ministry of Health, the Elderly and Community Care
- Ministry for Investment, Industry and Information Technology
- Ministry for Rural Affairs and the Environment
- Ministry for Urban Development and Roads
- Ministry for the Family and Social Solidarity
- Ministry of Foreign Affairs

Since 1993, Malta has been subdivided into 68 local councils or localities of varying sizes, 54 local councils in Malta and 14 in Gozo. These councils form the most basic form of local government and there are no intermediate levels between it and the national level. The inhabitants of the locality who are registered as voters in the Local Councils' Electoral Register elect the Council every 3 years. Elections are held by the means of system of proportional representation using the single transferable vote. The mayor is the head of the Local Council and the representative of the Council for all effects under the Local Councils Act, 1993 (Act XV of 1993). The Executive Secretary, who is appointed by the Council, is the executive, administrative, and financial head of the Council. All decisions are taken collectively with the other members of the Council. Local councils are responsible for the general upkeep and embellishment of the locality, local wardens and refuse collection. They also and carry out general administrative duties for the central government such as the collection of government rents and funds and answering government-related public inquiries.

## **I. 2. The institutional framework of the healthcare system**

Government holds overall responsibility for the healthcare system, exercised through the Ministry of Health, the Elderly and Community Care. All residents have access to preventive, investigative, curative and rehabilitation services in Government Health Centres and hospitals. Private health services exist alongside the state service.

The Government delivers primary care mainly through eight health centres. General practitioner and nursing services are supplemented by various specialised services. Community nursing and midwifery services are provided by the Malta Memorial District Nursing Association on a contract basis. The Government system operates alongside a successful private sector service, and many residents opt for private primary care services. Secondary and tertiary care are provided by a number of public health hospitals, the main one being St Luke's Hospital, with approximately 850 beds. There are three private hospitals, St Philip's (75 beds) in Santa Venera, Capua St. James' Hospital (80 beds) in Sliema and St James' Hospital (13 beds) in Zabbar.

The Mater Dei Hospital, under construction, is a landmark project. It was envisaged in the late 1990s and it was planned to be finalised in July, 2007.<sup>35</sup> When it is completed, the hospital will have a total floor area of 232,000m<sup>2</sup> and approximately 8,000 rooms. A sophisticated Health Information System is planned to be included with the operation of Mater Dei. The hospital will also be used as a teaching facility by the neighbouring University of Malta.

## **I. 3. The ownership and financing structure of the healthcare system**

The Maltese healthcare system is mainly state-funded from general taxation. Health insurance is not obligatory in Malta as there is a free national health service covering the whole population. People on low incomes are means-tested by the Department of Social Security. If they qualify for assistance, they receive a card entitling them to free prescription drugs. In addition, people diagnosed with one or more diseases from a specific list of chronic diseases are entitled to free treatment irrespective of their financial circumstances.

All workers and employers pay National Insurance contributions on a weekly basis, but this money goes to finance welfare services in general (e.g. pensions) and not health services in particular. It is not exceptional in Malta for an employer to offer health insurance as an employment benefit. By law, expectant mothers are entitled to thirteen weeks fully-paid maternity leave and can also avail themselves of a year of unpaid maternity leave. A number of residents purchase private health insurance on a voluntary basis, the proportion of the population availing itself of this option is growing rapidly.

As the entrance to the ERM-II imposes financial limits on public spending, the expenditures on health are also threatened. An extra burden is the construction of the Mater Dei hospital, and many question the capability of the health budget and the Maltese government to cope with the price, which is now estimated to be more than 500 million EUR.<sup>36</sup>

## **I. 4. Involvement of citizens, businesses and civil organisations in governance and democratic decision-making**

Although Malta has a highly centralised system of government, citizens, businesses and civil organisations are quite active in governance and democratic decision-making and turnout is high when voters are called to the polls. Two parties dominate Malta's polarized and evenly divided politics: the Nationalist Party led by Prime Minister Lawrence Gonzi, and the Malta Labour Party led by Alfred Sant. General elections are held every 5 years and the electoral system used is a single transferable vote. These elections invariably generate a very high voter turnout, exceeding 96%. The margin

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<sup>35</sup> [http://www.hospitalmanagement.net/projects/mater\\_dei/](http://www.hospitalmanagement.net/projects/mater_dei/)

<sup>36</sup> [http://www.hospitalmanagement.net/projects/mater\\_dei/](http://www.hospitalmanagement.net/projects/mater_dei/)

between the two main parties is generally so narrow that a 52% share of the votes can still be considered a landslide for the winning party.

## **I. 5. Policy and institutional reforms and modernisation strategies in public administration and healthcare**

Malta faced the need for a change in public administration in the late 1980's. A wide-ranging reform process was launched in 1989, by setting up the Public Service Reform Commission.<sup>37</sup> Reform measures were rolled out in several areas, in order to achieve significant improvements in public service but also to prepare Malta's readiness for EU membership. Reforms included a new Public Financial Management Act in order to realise efficient and effective management of government resources, the strict control of public debt, rules on accrual accounting in governmental planning and accounting (which was introduced in January 2005).

Another important public sector reform measure of the close past was the change in recruitment policy, which gave way to professional accountants and auditors to the government. The Management and Personnel Office was created in the early 1990s and it is responsible for human resource management strategies.

Another important reform process of the last decade was the decentralisation at various levels of the administration:

- administrative decentralisation in economic and territorial organisation,
- various projects to improve the relationship and communication of the administration with the citizens,
- decentralisation in public activity management tools: delegating certain tasks to external entities, corporations.<sup>38</sup>

Currently the most important reform process is the reform of the pension system,<sup>39</sup> to create a more modern, sustainable welfare society. The major challenges Malta is facing in this aspect are hidden in the demographic trends (birth rates are declining and life expectancy is increasing). The Pensions Working Group, entitled to find appropriate policy alternatives and suggestions, formulated the Pension Reform which is complete although the second/third pillar is yet to be implemented.

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<sup>37</sup> Department of Information, [http://www.doi.gov.mt/en/press\\_releases/2002/10/pr1496.asp](http://www.doi.gov.mt/en/press_releases/2002/10/pr1496.asp)

<sup>38</sup> UNPAD: Administrative Reform in the Mediterranean Region: Summary of Malta, <http://unpan1.un.org/intradoc/groups/public/documents/caimed/unpan019341.pdf>

<sup>39</sup> <http://www.mfss.gov.mt/pensions/documents/frpensions.pdf>





## II: DESCRIPTION OF E-GOVERNMENT AND E-HEALTH DEVELOPMENTS

### II. 1. Institutional structures and main actors for eGovernment and eHealth

Malta has been actively developing eGovernment since 2000, through various actors and decision-making bodies. Before the general elections of April 2003, the responsibility for eGovernment implementation belonged to the Ministry for Justice and Local Government, and in 2003 this responsibility was transferred to the **Ministry for Investments, Industry and IT (MIIT)**.<sup>40</sup> MIIT is responsible for all matters relating to the Information Society and eHealth, which is considered as a subset of eGovernment, is much less developed as it has only started being given specific policy attention in 2005. Political initiative is playing an important role as facilitator of eGovernment supply and take-up.

*Table 9. Key public actors in eGovernment and eHealth in Malta*

Actor	Role
<b>Ministry for Investments, Industry and IT (MIIT)</b>	Policy, provision of services, monitoring and coordination for eServices.
- within that: <b>Information Society Secretariat</b>	Management of the day-to-day running of projects and services.
<b>Department of Local Councils of the Ministry of Justice</b>	Strategy and coordination for eLocal Government.
<b>Local Council Offices</b>	Delivery of eLocal Government services and eGovernment services through their portals.
<b>Ministry of Health, the Elderly and Community</b>	Policy and provision of eHealth services, in coordination with the MIIT.
<b>Malta Information Technology and Training Services Ltd</b>	Technical support: a government-owned company supplying IT systems and services.
<b>Management Efficiency Unit</b>	Support: in-house management consultancy organisation of the Government.
<b>Department of Information of the Government of Malta (DoI)</b>	Management of the governmental portal: <a href="http://www.gov.mt">www.gov.mt</a>
<b>National Information Society Council (NISCO)</b>	Policy advisory body bringing together various stakeholders.
<b>Malta Communications Authority</b>	National Communications Regulatory Authority.
<b>National Audit Office of Malta</b>	Financial and compliance audit of all Government Offices.
<b>Office of the Commissioner for Data Protection</b>	Data Protection issues.

The major institutions involved in provision of eGovernment services are:

- The Ministry for Investment, Industry and IT (MIIT), which is responsible for the overall management and policy direction.
- Specifically the Information Society Secretariat of the MIIT, which manages the day-to-day running of projects and programmes related to policy implementation.
- The Local Council Offices, which are assisting in the local dissemination of the services.

At the local level, strategy and coordination are in the hands of the **Department of Local Councils of the Ministry of Justice**, while implantation is entrusted to the local councils themselves.

<sup>40</sup> <http://www.miti.gov.mt/>

The Maltese Government is working on the implementation of local eGovernment, that is, the delivery of eGovernment services through the front offices of all the local councils (70) in the country. One of the major milestones in the transition to eGovernment has been the devolution of the front office operations of the Rents Department (40,000 transactions per annum) and of the Trade Licenses Department (20,000 transactions per annum) have been to local councils. Front office operations of other governmental departments are expected to follow suit.

The main institution providing eHealth services is the **Ministry of Health, the Elderly and Community**.<sup>41</sup> Through its website, which forms part of the Government portal, it provides the public with information and advice related to the Health services. The site also includes links to other local health-related sites. Epidemiological information is also available.

Regarding other actors in eGovernment, besides the Ministry for Investment, Industry and Information Technology (MIIT) the Central Information Management Unit (CIMU) played a key role for a long period, between 1999 and 2005.<sup>42</sup> CIMU was responsible for providing leadership in the application of information and communication technologies in the public service. MIIT was the principal policy actor while CIMU acted as the coordinator.

Technical support was provided by the **Malta Information Technology and Training Services Ltd.**,<sup>43</sup> (MITTS) which is a government-owned company supplying IT systems and services to Government departments. Since the closing of the CIMU, the Malta Information Technology and Training Services Ltd has assumed its responsibilities. MITTS Ltd. took the tasks of the governance of the Government of Malta ICT Policies, Directives and Standards.

Support is also provided by the **Management Efficiency Unit (MEU)**, which is the in-house management consultancy organisation of the Government of Malta. It is constituted as a separate organisational entity within the Office of the Prime Minister and is primarily tasked with assisting Government Ministries and Departments in the development and implementation of effective change management strategies intended to lead to the improvement of Government Services. MEU helped draft the e-Government Vision and Strategy under the direction of CIMU. The MEU also helps various Government Departments to re-engineer their business processes in order to start providing their services online.

The government portal <http://www.gov.mt><sup>44</sup> and the Intranet are being managed by the **Department of Information (DoI)**, as the DoI took over it from CIMU.

In September 2003, the **National Information Society Council (NISCO)** was formed to build on what was accomplished by the e-Malta Commission from when it was set up in April 2001 to that date. NISCO is intended to be as representative as possible and aims to bring together the major stakeholders who influence and are influenced by policy decisions related to the information society. Within this context, membership of the Council is composed of three distinct categories:<sup>45</sup>

- Core group: the central players of the information society in both the public and the private sectors, including policy-setting organisations, regulatory bodies and telecoms providers.
- Special interest members: relevant organisations which albeit not having direct impact on the information society are still effected by its development in one or more specific areas.
- Individual members: individuals invited on a personal basis on the grounds of their previous or current contribution to the information society or towards the engendering of the ICT private sector in Malta.

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<sup>41</sup> [www.health.gov.mt](http://www.health.gov.mt)

<sup>42</sup> <http://www.opm.gov.mt/central.info.management.unit.htm>

<sup>43</sup> <http://mitts.gov.mt/default.aspx>

<sup>44</sup> <http://www.gov.mt/>

<sup>45</sup> Source: [www.doi.gov.mt](http://www.doi.gov.mt)

The key aims of NISCO are to:

- Monitor the development of the information society in Malta;
- Provide direct input to the development and implementation of the national information and communications technologies strategy;
- Devise structured initiatives on specific aspects, programmes or initiatives related to the development of the information society;
- Serve as a focused analytical forum on major information society themes;
- Serve as a vehicle for national networking, effort convergence and synergy attainment in the development of the information society;
- Ensure that all stakeholders in the public and private sectors and in civil society are informed of the major developments in the information society in Malta.

The **Malta Communications Authority**<sup>46</sup> is the national regulatory body and it is active in telecommunications, various internet access, most importantly broadband regulation as well as in other information society- related issues.

Auditing and assurance falls under the responsibility of the **National Audit Office of Malta**<sup>47</sup> (NAO). The NAO mandate covers full annual financial and compliance audit of all Government Offices and other public entities, independent advisory and investigative powers, examination of any financial matter concerning use of public funds, and performance and value for money evaluation audits of Government Offices and public entities and companies where the Government is a majority shareholder.

The **Office of the Commissioner for Data Protection**<sup>48</sup> also has a relevant role as it is responsible for ensuring respect for the individual's right to privacy with regard to personal information, and enforcement of relevant legislation in the field.

Regarding the role of the private sector, probably the most important player is **Microsoft**. The company is a key actor in Malta's ICT industry – and in its industry as a whole – and has signed a **cooperation agreement** with the government of Malta in order to establish the island country as a regional ICT-hub.<sup>49</sup> In the framework of this wide-ranging, long-term partnership agreement, Microsoft is providing direct technical and financial assistance for the development of ICTs within the public administration. Malta also serves as a pilot case for Microsoft: certain Microsoft solutions (such as the Government Security Programme) are first enrolled here.

The agreement covers various areas:

- The establishment of a technology centre of excellence.
- Pilot enrolment of Microsoft's Government Security Programme.
- The setting up of a fellowship between the Institute of Public Administration and Management and the University of Malta and Microsoft, where Microsoft provides direct technical and financial assistance for eGovernment solutions development.
- Microsoft subsidizing 98% of cost for certain software for Maltese students, to increase ICT literacy and to reduce digital divide.
- The localisation of Microsoft Windows XP into Maltese language.
- Setting up the Microsoft IT Academy in Malta.

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<sup>46</sup> <http://www.mca.mt>

<sup>47</sup> <http://www.nao.gov.mt/>

<sup>48</sup> [www.dataprotection.gov.mt](http://www.dataprotection.gov.mt)

<sup>49</sup> <http://www.csm.org.mt/pdf/Microsoft%20agreement.pdf>

- Joint effort to establish Malta as an international best practice location for the protection of Intellectual Property Rights.

Such intense participation of private actors cannot be found in the domain of eHealth, although the nature of health care allows more private involvement (in various forms, including PPP) than the public administration.

## II. 2. Current strategies, policies, action plans and projects

The key policies and strategies relevant for eGovernment and eHealth are summarised below:

**Table 10: Key policy and strategy milestones<sup>50</sup>**

Nov. 1998	3-year (1999-2001) Information Systems Strategic Plan for the Public Service.
Feb. 1999	Creation of the Central Information Management Unit (CIMU) within the Office of the Prime Minister.
Oct. 2000	White Paper on the Vision and Strategy for the Attainment of eGovernment.
Jun. 2001	The eEurope+ Action Plan is published by the European Commission.
May 2002	Government of Malta launches its new portal, <a href="http://www.gov.mt">www.gov.mt</a> , which is the official entry point to online services and which links to all Government bodies.
Nov. 2002	Maltese Government launches a customer service website, <a href="http://www.servizz.gov.mt">www.servizz.gov.mt</a> , enabling any individual to send a complaint or a request for information to government departments and agencies, as well as to submit suggestions on how a government service may be improved.
Apr. 2003	A government-wide Intranet allowing document exchange and sharing across Ministries and Departments is launched and made available to all public officers who use computers connected to the Malta Government network (MAGNET).
Apr. 2003	Government launches a set of mobile government services marking the coming into life of “mGovernment”, a programme to give access to government services via mobile phones and other mobile devices.
Jul. 2003	Data Protection Act (2002) comes into force.
Sept. 2003	Maltese government officially launches the first draft of the National ICT Strategy at the first meeting of the National Council for Information Society (NISCO).
Mar. 2004	Introducing Electronic Identity (e-ID).
Apr. 2004	Addressing Spam Together –Green Paper.
Aug. 2004	Online payment system for taxpayers to pay tax and social security contributions, based on the Government’s Electronic Payment Gateway (ePG).
Dec. 2004	National Broadband Strategy of Malta.
2004	National ICT Strategy 2004-2006.
2005	Start of development of National Health Strategy?
Jan. 2005	Hello IT – key initiatives in the framework of the National ICT Strategy 2004-2006, mostly aiming at involving the population into the use of ICTs (teaching eSkills, teaching about infrastructure).
Jun. 2005	eCommerce Framework.

The development of national Information Society policies in Malta may be traced back to 1994 when the first related policy, namely the National Science and Technology Policy, was conceived. In the same year the Information Technology Project took off. The University of Malta (UOM) introduced undergraduate degrees in Computer Science, Computer Systems Engineering and Informatics in 1996. In 1998, the *Information System Strategic Plan (ISSP) 1999-2001* was formulated.

One of the first documents regarding the electronisation of government services in Malta was the **White Paper on the Vision and Strategy for the attainment of eGovernment**,<sup>51</sup> which was

<sup>50</sup> IDABC eGovernment Factsheet - Malta – History and [www.miti.gov.mt](http://www.miti.gov.mt) -

<sup>51</sup> <http://www.miti.gov.mt/site/page.aspx?pageid=1237>

prepared in 1999-2000 by CIMU. The paper, presented in October 2000, establishes the principles that are to underpin eGovernment. The document creates a strategic framework and identifies the architecture, the integrated services and related business changes that are needed for eGovernment development.

The paper lists the following key set of tasks to be carried out:

- Capacity building.
- Overview of organisational structures within the public service.
- Restructuring of governmental websites, setting up more user-friendly sites with various eServices offered.
- Introduction of multiple service delivery channels.

The strategy is based on the following principles:<sup>52</sup>

- All Maltese will have the opportunity and the means to participate in the Information Society and the Information Economy irrespective of their financial, social or educational circumstances.
- The Government will actively promote the creation of the Information Society and the Information Economy via the provision for transactional on-line eGovernment Services.
- The Government will provide the necessary policy, institutional and regulatory framework that is required for the successful proliferation of electronic commerce.
- Businesses will be encouraged to adopt electronic commerce.
- The achievement of computer literacy by all sectors of the population will be actively pursued.
- The necessary measures will be taken to build a critical mass of Information Technology specialists that will be required to sustain the growth of the Information Society and the Information Economy.

The **eGovernment programme of Malta**,<sup>53</sup> launched in 2001, was harmonised with the eEurope+ Action Plan and Roadmap.

The eGovernment programme aimed at the following three objectives:

- To deliver a first-class public service.
- To increase citizen participation in government decision-making.
- To streamline public services and realise efficiency gains.

A key advantage of the policy is its explicit aim for inclusion. The programme emphasises the need for multiple service delivery channels and universality of access to the offered services. In order to achieve these, the financial affordability and alternative technologies (mGovernment) are also among the key priorities of the programme.

The objectives are being addressed through a number of parallel implementation streams. The Government is primarily pursuing public-private relationships with the local ICT sector for the design, development and implementation of a range of electronic services. The core elements of the eGovernment programme are being developed within the Government's IT agency, MITTS Ltd., which provides a common platform and launching pad for all services.

In order to extend the development of eGovernment to the local government level, a **national electronic policy in local councils** was adopted in early 2002 on the basis of an agreement between the Government agencies on one side – namely the eMalta Commission and the Department of Local

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<sup>52</sup> [www.miti.gov.mt](http://www.miti.gov.mt)

<sup>53</sup> <http://www.gov.mt/egovernment.asp?p=110&l=2>

Councils – and the local councils on the other. The partnership aims at empowering local councils by providing them with the necessary capacity and a framework for action that will position them as centres of ICT excellence in their locality. Local Councils are intended to play a pivotal role in four areas: digital inclusion and digital divide; best value service delivery; e-democracy; and ICT take-up.

With less than one year from its establishment, the Ministry responsible for IT launched two complementary policy documents, the National ICT Strategy and the National Broadband Strategy, which lay out the plan of action from 2004 up to 2006. Both these policy documents were launched through NISCO. While the National ICT Strategy is a comprehensive strategic plan that builds on earlier policy documents, the National Broadband Strategy is intended to identify the socio-cultural and infrastructural factors that can contribute to the proliferation of broadband use.

The **National ICT Strategy 2004-2006** that was drafted in September 2003 builds upon earlier ICT policy documents. It was presented at the first meeting of NISCO, which took place on 26th September 2003. Its tall order of objectives may reflect a better understanding of the wide range of ICT factors and impacts in the IS&E, but on the other hand, there is the risk that too many words may tilt the balance between words and actions that has generally prevailed in ICT policy formulation and implementation in Malta in recent years. This strategic plan is the agenda for NISCO, which is intended to be the formalisation and the upgrading of what has been developed over the last few years.

The National ICT Strategy 2004 – 2006 was aiming at:<sup>54</sup>

- The development of the Maltese information society and economy in general.
- Specifically, the strengthening of ICT in government, not only to improve service delivery but also as a tool of extending democracy, accountability and realising efficiency gains.

The Strategy contains thirteen strategic objectives to bring about a situation whereby Malta becomes one of the most developed information societies in Europe. These are to:

- Step up the fight against the digital divide across all levels of society.
- Promote and extend holistic ICT education and accessibility to technology.
- Use ICTs to improve further the quality of life of Maltese citizens and to impact positively on the tourist experience in Malta.
- Use ICTs as an effective management tool within the public sector as an efficiency-realisation mechanism and as a vehicle to improve the quality of the working lives of public employees.
- Proliferate the delivery of first class, accessible and secure Government services.
- Promote the ICT culture in SMEs with the objective of making them derive the benefits of introducing ICT in their operations.
- Enable and empower local businesses to gain access to the labour market by participating in the eBusiness community.
- Consolidate the external ICT environment.
- Make the Internet a secure place, build confidence, trust and security in the use of ICTs.
- Strengthen the local indigenous ICT private sector and support ICT entrepreneurship.
- Internationalise the Maltese ICT industry to compete in the global environment.
- Transpose the benefits of EU membership in the attainment of a first-class information society.
- Promote the role and contribution of the Maltese information society to global ICT.

The National ICT Strategy is largely built around eGovernment and the strategic objectives for 2004 – 2006 include two objectives directly targeting eGovernment. **Strategic objective 4** is to use ICTs as an effective management tool within the public sector, as an efficiency-realisation mechanism, and as

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<sup>54</sup> [http://www.euser-eu.org/eUSER\\_eLearningCountryBrief.asp?CaseID=2262&CaseTitleID=1103&MenuID=117](http://www.euser-eu.org/eUSER_eLearningCountryBrief.asp?CaseID=2262&CaseTitleID=1103&MenuID=117)

a vehicle for the improvement in the quality of the working lives of public employees. This objective was set in order to overcome resistance to change on the part of public service employees. A series of goals have been set in this regard, the most salient of which are listed below:

- To improve the level of ICT literacy among all Government employees.
- To ensure that new systems being developed are all interoperable and can interchange data between them and also with those of the rest of Europe.
- To adopt ICTs as a primary Government information delivery vehicle to communicate directly with the public, explaining policies, operations and progress registered.
- To improve the corporate image of Government.
- To use ICTs in Government to share information to improve tax compliance and law enforcement.

The other strategic objective, which directly targets eGovernment is **objective 5**, which is to proliferate the delivery of first-class, accessible and secure eGovernment services, in order to consolidate the eGovernment programme. Tactical areas for action under this objective included:

- Putting all Government services and information that lend themselves to electronic media online.
- Extending eGovernment and introducing Customer Relationship Management tools.
- Introducing eGovernment services into new public realms such as eHealth, eEnvironment and eEducation, all aimed at making a direct positive impact on the quality of life of Maltese citizens.
- Offering public services through a wide range of agents in each town and village.
- Striving to increase the uptake of eGovernment services, especially the base public services which are used by the larger share of Government clients.
- Ensuring eGovernment services are accessible to the widest section of the population possible, focusing on people with disabilities, senior citizens and under-privileged families.
- Delivering of electronic public services through alternative service delivery channels such as fixed and mobile telephony.
- Establishing of a direct individual link with citizens, providing the information citizens need, when they need it, on whatever device they wish to receive it.

The principles underpinning the eGovernment programme place the needs of the user at the centre of its agenda. The National ICT Strategy includes the tactical approaches to address user orientation and the Government has also set up the Foundation for Information Technology to be the principal advocate and co-ordinator for making ICTs accessible for people in the Maltese islands.

**The National Broadband Strategy**<sup>55</sup> of the Maltese government also has an important effect on the spread of these eServices. The strategy aimed at creating a ubiquitous broadband infrastructure, which covers 99% of the population. The four key pillars of the strategy are:

- Limited governmental intervention in order to allow the private sector and the market to develop broadband.
- Limited regulatory intervention.
- Coordinative role played by the government.
- The government participates actively in creating content and services (government, health, education) and therefore helps to increase the demand for broadband.

**Malta's eHealth Strategy** is considered as a subset of the eGovernment programme but it is in the conceptual and visioning stages; the Strategy has been drafted and development started in 2005. Due

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<sup>55</sup> <http://www.miti.gov.mt/docs/broadband.pdf>

to the time difference in planning, the deliverables of the eHealth Strategy have not been included in the National ICT Strategy. Currently, the main drive for eHealth emerges from personal belief in the importance and usefulness of such services of a handful of leaders in the public service. The Ministry for Investments, Industry and IT plans to trigger off a large scale set of policies and initiatives after implementation.

The following list summarises the applications and usage scenarios being considered within the eHealth Strategy. Users shall be able to:

- Apply online for a European Health Card (also known as an E111 Card) as a trans European health coverage.
- Register online to become a potential blood donor: a growing demand for an essential cause.
- Apply online to attend a weight reduction programme: global growing concern.
- Apply online to attend a smoking cessation programme: facilitate, bring closer and allow people to think about quitting the extremely addictive habit.
- Apply online to attend a sexual and reproductive health counselling session organised by the Health Promotion Department: personal and highly demanded service, often inhibited by the lack of communicative channels.
- Request online information and advice from the Genito-Urinary (GU) Clinic Doctor on sexually transmitted diseases (STDs), HIV or related issues: awareness focus as well as reassurance to clients of the service.
- Lodge a complaint for investigation by the Department of Public Health on any of the following public health issues: (a) infiltration of drainage or water in public and private property; (b) sewage overflows and other leakages; (c) accumulation of refuse, debris, dung and stagnant water; (d) unhygienic conditions within food premises; (e) labelling, presentation and wholesomeness of foodstuffs; and / or (f) keeping of animals under unhygienic conditions.

The strategy intends to encourage a health and service culture by providing the facility for users to:

- Book an appointment online (both doctor and / or citizen) at any of the Out-Patient Clinics within the General Hospital.
- Register online to receive automatic notification / reminders for child immunisation vaccinations and international travel immunisations via SMS and / or email, triggered off at birth registration and / or included as an additional service applicable on request.
- Access a patient electronic library or self-help guide that contains clinically-ascertained information on a variety of medical conditions: doctor at home facility / personal research facility.
- Access information on licensed pharmacies in Malta and Gozo by area or locality: graphical representation of all pharmacy locations, together with Sunday availability listings.

By the beginning of 2007, most of these services were available. Nevertheless, an important strategic vision is still missing, the set-up of an Integrated Health Information System which ensures the advantages gained from the various sub-systems already existing, being integrated.

As an important policy and strategy measure of the close future, the **National Strategic Reference Framework 2007-2013** prepared for Malta has four strategic objectives, out of three includes issues related to the development of eServices or to its precondition, the development of Information Society infrastructure and skills.

- Strategic Objective 1 – Sustaining a growing, knowledge-based, competitive economy.
- Strategic Objective 2 – Improving Malta’s attractiveness and the quality of life.
- Strategic Objective 3 – Investing in human capital.



With regards to the **costs of eServices and the funds allocated**, in 2002 and 2003, the government allocated €815,000 per annum for the proliferation of eGovernment in the communities through the Local eGovernment vote. In 2002, local councils received the funds as a direct allocation. Practically all the funds were utilised to cover operational expenditure of the Councils other than that related to the Local eGovernment programme. In 2003, the funds were utilised entirely to finance 60% of the capital expenditure of over €1.2 million that was involved in the setting up of public Internet access points and Internet centres in all local councils. The remaining 40% of the outlay was raised from sponsorships. The myWeb programme, which provides 20 hours of basic ICT training for free, was introduced through the Internet Centres in local councils. Training has been delivered to over 4,000 citizens whose average age was 45 years; 6,000 applicants are on the waiting list for training.

The free email for all initiative was introduced in 2003, providing free email services and support to 18,000 citizens. During the first 12 months, the initiative was run through a joint marketing agreement with Maltanet (a subsidiary of Maltacom plc) and hence no financial outlay was made by the Government. For subsequent years, the Government's contribution was limited to €8,000 per annum irrespective of the number of active email subscriptions.

### **II. 3. The legal framework supporting eGovernment and eHealth applications**

There is no comprehensive eGovernment or eHealth legislation in Malta, but there are pieces of legislation that provide a legal framework that supports eGovernment and eHealth applications. In February 1999, the Office of the Prime Minister established an Inter-Ministerial Working Group to draw up an Information Practices Act as traditional legislation was considered inadequate to support the development and widespread use of an electronic setting.

The **White Paper on the Legislative Framework for Information Practices** was drawn up and proposed to Government by an Inter-Ministerial Working Group established by the Office of the Prime Minister in February 1999, to draw up an Information Practices Act, as traditional legislation was inadequate to support the development and widespread use of an electronic setting. The White Paper encompassed three aspects of information practices and led to the following three bills:

- An Electronic Commerce Bill to establish the legal basis for the safe but free conduct of electronic commerce.
- A Data Protection Bill to safeguard citizens from the potential abuse of their personal data through information systems.
- A Computer Misuse Bill to protect the rights of the owners of valuable data and information systems.

The **Data Protection Act** was passed on 14th December 2001 (2002?) and came into force in July 2003. The Government is committed to conform to the Data Protection Act. The Office of the Prime Minister (OPM) is responsible to ensure that Data Protection compliance is achieved in all Government Departments. Subsequently, a collaboration agreement was signed between the OPM and the state-owned IT services company MITTS. A project team was established between OPM and MITTS to co-ordinate, advise and assist as necessary in the implementation of the data protection requirements in the Public Service, so as to bring all Government Departments in compliance with the Data Protection Act. Parliament also enacted the Electronic Commerce Act in 2002 (on 16th January 2001?) and passed amendments to the Criminal Code to make computer-misuse a criminal offence.

Malta has not yet implemented the **new EU regulatory framework for electronic communications**. Electronic communications in the country are still governed by the Electronic Communications (Regulation) Act adopted in 1997 and which has been amended several times since then. The use of electronic means for communication in the public procurement process is currently not regulated by national legislation (Public Contracts Regulation of 2003). The new EU Directives on public procurement (2004/17/EC and 2004/18/EC), including their provisions related to e-procurement, are expected to be implemented in Malta in 2006. Following the new EU directives, the Maltese

Government is expected to make legal provisions that enable contracting authorities to use electronic auctions and dynamic purchasing systems.

The **Electronic Commerce Act** establishes the legal framework for electronic signatures in Malta, although currently there are no Signature Certification Services Providers that offer services to the general public. This part of the Act is in line with the EU Directive 1999/93/EC on the subject and ensures that service providers established in Malta will operate in the same legal framework of those established in the European Union.<sup>56</sup>

## II. 4. Dedicated information and communication technologies infrastructures

The **portal of the Government of Malta**, [www.gov.mt](http://www.gov.mt), is the official institutional site of the Government of Malta as well as the principal point of entry to all eGovernment services. It provides access to information as well as to a number of interactive and transactional services. Content is available in Maltese and English and is presented under 15 different themes: work and business, health, education, sports, leisure and culture, special needs, family affairs, environment and hygiene, law and order, children, travel and transport, employment and income, you as a consumer, housing, the elderly, visiting and settling in Malta. There are also links to all Government departments and services from the main page.

The **Maltese Government Network, MAGNET**, connects all Government Ministries and Departments, agencies, local councils, schools, police stations, libraries, hospitals, health centres, social services offices and embassies. A government-wide intranet that was launched in April 2003 is available to all entities connected to MAGNET and allows document exchange and sharing across all these entities. In September 2004, the Intranet entered a second development phase, which includes the creation of secure, reserved areas that allow user groups to share restricted documents such as presentations, minutes and news items. These communities of practice in certain cases span horizontally across the public service. A new network, MAGNET II, was launched in July 2005 and will progressively supersede MAGNET. This new state-of-the-art network affords a number of benefits for users compared with its predecessor. In particular, it provides enhanced bandwidth per site, offers better reliability through strict service level agreements, guarantees 99.8% minimum site availability, and is fully secure through extensive encryption.

Extensive **use of VoIP** is an interesting feature of the electronisation of the Maltese public administration. While many other countries consider VoIP as insecure, the Government of Malta decided to use it for cost reduction and convenience. The second generation governmental network, MAGNET II also transports voice over IP calls efficiently and effectively between all connected organisations.

Security in terms of authentication, fraud prevention and prevention of unauthorised hacking must be guaranteed. As the eGovernment architecture uses the Internet as a medium for eService delivery, the true proliferation of eGovernment could only happen in a trusted online environment aided by a secure authentication infrastructure such as the concept of the electronic identity (e-ID), which is currently being used.

The government is putting in place a number of essential services to promote and support the entire eGovernment programme. **Electronic identity** was launched in March 2004 to enable citizens to access a number of interactive and transactional e-services requiring secure identification. Citizens can apply for an electronic identity by presenting themselves at any district office of the Department of Social Security with a copy of their ID card and a valid e-mail address.<sup>57</sup> Their details are registered and submitted to the electronic identity administrator, who performs validity checks and sends the applicants a first-time password through their registered e-mail address and an activation number by post. These password and activation numbers enable citizens to activate their electronic identity and

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<sup>56</sup> Malta Communications Authority, Electronic Signatures and Signature Certification Services

<sup>57</sup> IDABC eGovernment Factsheets - Malta

services account on the government portal. Currently, the government is planning to renew the ID cards with bio-metre face prints and fingerprints – the project is expected to roll out in 2007.

An important feature of the Maltese eGovernment system is that the services are supported by an online payment system, which is built on a classic eCommerce method. The service is carried out through **MaltaNET**. MaltaNET is operated as a single brand after the merger between three companies, DataStream Ltd, Terranet Ltd and maltanet Ltd in December 2005. DataStream Limited is Malta's leading Broadband and IP company and acts as the Internet and data services arm of the Maltacom Group.<sup>58</sup> The maltaNET ePayment gateway is the leading eCommerce engine in Malta, providing transaction clearing to a number of local and international customers, and it also handles all eGovernment transactions as well.<sup>59</sup>

**II. 5 Services provided to citizens, businesses and other stakeholders**

A large number of electronic services have been launched to date, of which many can be described as transaction-based services such as requests for birth, marriage and death certificates, and submission and payment of income tax returns. Other services include an online database that provides information on the most important judgements passed in Malta since 1944, and a facility for online submission of reports to the police, tracking the progress of such reports and submitting and requesting relevant information.

The supply of eGovernment services in Malta has been measured annually in the last four years as part of the European Commission's eEurope benchmarking. In 2004, Malta had reached a value of 67% for online sophistication and a value of 40% for fully available online eGovernment services, in terms of eEurope's benchmarking indicator.<sup>60</sup> These scores give Malta an average ranking among the EU25. The Ministry for Investment, Industry and IT is working towards having 90% of the Government's basic public services online. It is assumed that demand will grow once most services are made available.

The following eServices are available for Citizens<sup>61,62</sup>:

**Table 11. eGovernment services for citizens**

<p><u>1. Income taxes (declaration, notification of assessment)</u></p> <p>Responsibility: Central Government, Inland Revenue Malta          Website: <a href="http://www.ird.gov.mt/">http://www.ird.gov.mt/</a>          Sophistication stage: 4/4          Description: Online submission application and an online payment system for tax and social security contributions.</p>
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<sup>58</sup> <http://www.maltanet.net/page.jsp?id=5070&siteid=1&mainid=5070>  
<sup>59</sup> <http://egov.vic.gov.au/index.php?env=-innews/detail:m1175-1-1-8-s#egovernment>  
<sup>60</sup> This indicator measures the online availability of 20 basic public services, of which 12 are targeted at citizens. Measurement is based on a sample of URLs agreed with Member States as relevant for each service. Native speakers in each language then carry out a web survey to measure the degree of sophistication of online availability using a 4 stage classification: 1 – Basic information; 2 – One-way interaction; 3 – Two-way interaction; 4 – Full electronic case handling. Around 14,000 URLs were tested in 2004. Source: Cap Gemini Ernst & Young, 2005  
<sup>61</sup> The information in this section is based on the common list of 20 basic public services (12 for citizens, 8 for businesses) adopted by the Council of the EU in March 2001, and on the methodology used to assess their level of online availability and sophistication in the eEurope benchmarking exercises. The 12 services for citizens are as follows: income tax declaration; job search services by labour offices, social security contributions; personal documents; car registration; application for building permission; declaration to the Police; public libraries; certificates (birth, marriage) request and delivery; enrolment in higher education; announcement of moving (change of address); health-related services (e.g. appointments for hospitals). For each service, the sophistication stage reached is indicated, with reference to the maximum stage possible for the service. Stage 1 – Information: online information about public services; Stage 2 – Interaction: downloading of forms; Stage 3 – Two-way interaction: processing of forms, including authentication; Stage 4 – Transaction: full case handling, decision and delivery (payment).  
<sup>62</sup> <http://ec.europa.eu/idabc/en/chapter/405>, updated Sept 2006

## 2. Job Search services by labour offices

Responsibility: Central Government, Employment and Training Corporation

Website: <http://www.etc.gov.mt/>

Sophistication stage: 3/3

Description: Standard procedure to obtain job offerings as organised by official labour offices, no private market initiatives.

## 3. Social security benefits

### a. Unemployment Benefits

Responsibility: Central Government, Ministry for the Family and Social Solidarity

Website: <http://www.msp.gov.mt/>

Sophistication stage: 4/4

Description: Information only.

### b. Family allowances

Responsibility: Central Government, Ministry for the Family and Social Solidarity

Website: [http://www.msp.gov.mt/services/sif/service\\_index.asp?cluster=family](http://www.msp.gov.mt/services/sif/service_index.asp?cluster=family)

Sophistication stage: 3/4

Description: Information, forms for download and online calculator.

### c. Medical costs (reimbursement or direct settlement)

Responsibility: N.A.

Website: N.A.

Sophistication stage: N.A.

Description: This service is not relevant for Malta. The Maltese health service is entirely free at the point of delivery and funded from general taxation.

### d. Student grants

Responsibility: Central Government, Ministry of Education, Youth and Employment

Website: <http://www.education.gov.mt/edu/smgb.htm>

Sophistication stage: 4/4

Description: Information and forms to download.

## 4. Personal Documents (passport and driving licence)

### a. Passport

Responsibility: Central Government, Ministry for Justice and Home Affairs, Department of Civil Registration, Maltese Passport Office

Website: <http://www.passaporti.gov.mt/>

Sophistication stage: 3/3

Description: In June 2005, the Maltese Passport Office launched an online service allowing citizens to order their passport online, at anytime and from anywhere. The service can be used by any Maltese citizen over 18 years of age who holds a valid Maltese ID card. Service users must previously register with the e-Passport service and own a Government-issued Electronic Identity (e-ID).

### b. Driving License

Responsibility: N.A.

Website: N.A.

Sophistication stage: N.A.

Description: This service is not relevant for Malta.

#### 5. Car registration (new, used and imported cars)\*

Responsibility: Central Government, Malta Transport Authority

Website: <http://www.maltatransport.com/>

Sophistication stage: 4/4

Description: Information and forms to download.

\*: Not listed in IDABC, but an existing site is [www.licenzji-vetturi.gov.mt](http://www.licenzji-vetturi.gov.mt) which is a fully transactional website for vehicle licenses. The [maltatransport.com](http://www.maltatransport.com) site presented provides many services (description of transport policies and regulation, etc) but the licence online registry site, [www.licenzji-vetturi.gov.mt](http://www.licenzji-vetturi.gov.mt) belongs to the Ministry of Investment, Industry and Information Technology.

#### 6. Application for building/planning permission

Responsibility: Central Government, Malta Environment and Planning Authority

Website: <http://www.mepa.org.mt/>

Sophistication stage: 4/4

Description: Information and forms to download.

#### 7. Declaration to the police (e.g. in case of theft)

Responsibility: Central Government, Maltese Police

Website: <http://www.pulizija.gov.mt/>

Sophistication stage: 3/3

Description: Since November 2003, the website of the Maltese police allows the general public to report small crimes and lost property, request information from the Police or provide information about criminal activities or other public safety concerns. People submitting a report through [Pulizija.gov.mt](http://Pulizija.gov.mt) are provided with a reference number and a password that enable them to track the progress of their request online. Information and claimants are undisclosed and kept confidential unless otherwise required during court proceedings.

#### 8. Public libraries (availability of catalogues and search tools)

Responsibility: Central Government, Ministry of Education, Youth and Employment, Libraries & Archives Department

Website: <http://opac.library.gov.mt/>

Sophistication stage: 3/3

Description: Online catalogue search and reservation system.

#### 9. Certificates (birth, marriage): request and delivery

Responsibility: Central Government, Ministry for Justice and Local Government

Website: <http://www.certifikati.gov.mt/>

Sophistication stage: 3/3

Description: Public Registry civil certificates, including birth, marriage and death certificates, can be ordered and paid online from the [Certifikati.gov.mt](http://Certifikati.gov.mt) website.

#### 10. Enrolment in higher Education/university

Responsibility: Central Government, Ministry of Education, Youth and Employment

Website: <http://www.education.gov.mt/edu/schools/tertiary.htm>

Sophistication stage: 2/4

Description: Information and forms to download.

### 11. Announcement of moving (change of address)

Responsibility: N.A.

Website: N.A.

Sophistication stage: 3/3

Description: N.A.

### 12. Health related services (interactive advice on the availability of services in different hospitals; appointments for hospitals)

Responsibility: Central Government, Ministry of Health, the Elderly and Community Care

Website: <http://www.gov.mt/servicecluster.asp?s=4&l=2>

Sophistication stage: 4/4

Description: Information only.

The following eServices are available for businesses<sup>63,64</sup>

#### ***Table 12. eGovernment services for businesses***

##### 1. Social contribution for employees

Responsibility: Central Government, Inland Revenue Malta

Website: <http://www.ird.gov.mt/>

Sophistication stage: 4/4

Description: Online submission application and online payment system for tax and social security contributions.

##### 2. Corporation tax: declaration, notification

Responsibility: Central Government, Inland Revenue Malta

Website: <http://www.ird.gov.mt/>

Sophistication stage: 4/4

Description: Online submission application and an online payment system for tax and social security contributions.

##### 3. VAT: declaration, notification

Responsibility: Central Government, VAT Department

Website: <http://www.vat.gov.mt/>

Sophistication stage: 4/4

Description: Online VAT Return/Declaration system.

<sup>63</sup> The information in this section is based on the common list of 20 basic public services (12 for citizens, 8 for businesses) adopted by the Council of the EU in March 2001, and on the methodology used to assess their level of online availability and sophistication in the eEurope benchmarking exercises. The 8 services for businesses are as follows: social contributions for employees; corporation tax: declaration, notification; VAT: declaration, notification; registration of a new company; submission of data to statistical offices; customs declaration; environment-related permits; public procurement. For each service, the sophistication stage reached is indicated, with reference to the maximum stage possible for the service. Stage 1 – Information: online information about public services; Stage 2 – Interaction: downloading of forms; Stage 3 – Two-way interaction: processing of forms, including authentication; Stage 4 – Transaction: full case handling, decision and delivery (payment).

<sup>64</sup> <http://ec.europa.eu/idabc/en/chapter/405>, updated Sept 2006

#### 4. Registration of a new company

Responsibility: Central Government, Malta Financial Services Authority

Website: <http://registry.mfsa.com.mt/>

Sophistication stage: 4/4

Description: Information and forms to download.

#### 5. Submission of data to statistical offices

Responsibility: Central Government, National Statistics Office

Website: <http://www.nso.gov.mt/>

Sophistication stage: 2/3

Description: Information and forms to download.

#### 6. Customs declarations

Responsibility: Central Government, Ministry of Finance

Website: <http://www.ces.gov.mt/>

Sophistication stage: 4/4

Description: Customs declarations can be submitted online (only for imports at the moment).

#### 7. Environment-related permits (incl. reporting)

Responsibility: Central Government, Malta Environment and Planning Authority

Website: <http://www.mepa.org.mt/>

Sophistication stage: 2/4

Description: Information and forms to download.

#### 8. Public procurement

Responsibility: Central Government, Ministry of Finance, Department of Contracts

Website: <http://www.contracts.gov.mt/>

Sophistication stage: 3/4

Description: Information and notification of contract awards. An [e-procurement portal](#) was launched in April 2004, which at the moment enables public authorities to acquire IT hardware and software below a certain threshold. The e-procurement system will be enhanced in the future to include other functionalities including a payment gateway.

As the table above shows with the indicators listed in IDABC, the electronisation of many governmental services in Malta are very much improved and have reached a high level. Critics may say that for a country of that size, it is easy to launch these initiatives and to achieve very fast improvement within a short period. Nevertheless, one needs to highlight some special features of the Maltese eGovernment development, which may serve as good practice even for countries of a bigger size.

**Local Enforcement System**<sup>65</sup> is a way to pay fines for selected minor offences over the internet, therefore reducing the costs of this transaction (and probably also taking advantage of non-personal case handling, which may be a psychological drive when taking into account fines and warden tickets). Besides online payment, the system also includes contravention information and other relevant notices. The following cases are included in the system:

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<sup>65</sup> <http://www.les.gov.mt/governpolicy.aspx>



- Offences related to on-street parking.
- Inspection and reporting on trading licences.
- Littering Offences.
- Checking and Reporting on Infringements in Building and Spatial Planning Regulations on behalf of the Malta Environment Planning Authority.
- Building Permits Enforcement and Status Reporting.
- Other Traffic related functions (off-street parking, parking permits etc).

A unique development in terms of technology and approach is the mGovernment service. This allows mobile technology as an additional service delivery channel. Malta's take-up of mobile phones is high (74% of the total population), thus facilitating the use of such a channel and **mGovernment services**<sup>66</sup> are a successful initiative of Malta. Mobile phone users are able to access a number of government services and receive notifications and information via their mobile phones. In agreement with the Malta Communication Authority and the two mobile operators in Malta (Vodafone and Go Mobile), a series of common mGovernment numbers are established.

The following services are available:<sup>67</sup>

- Notification of acknowledgements and status change of customer complaints  
This service enables the user to receive an acknowledgement via SMS after having contacted the Customer Care web site, [www.servizz.gov.mt](http://www.servizz.gov.mt). The [servizz.gov](http://www.servizz.gov.mt) web site enables the user to submit a question, a suggestion or a complaint to any Public entity, Government Department or Local Council in regard to the services they offer. This service also enables the user to receive SMSs on the progress made and whatever has been done regarding your problem.
- Notifications via SMS of court deferrals  
This service enables the user to receive notifications via SMS of court sitting deferments to the clients and their legal representatives.
- Notifications via SMS for license-renewal to the holders of licenses  
This service enables the user to receive notifications via SMS for licence renewals to the holders of Trade licences, Malta Tourism Authority licences and Malta Maritime Authority licences.
- Notification of exams results  
This service enables the user to receive examination result via SMS.
- Notification for Direct Credit Payments from the Department of Social Security  
The user receives a notification whenever there is a direct credit payment to his/her bank account from the Department of Social Security.

In April 2004, Government launched a central electronic public procurement portal, which laid the foundations for **eProcurement**. The portal enables public officers to acquire IT hardware and software below a certain threshold.

The Ministry of Health, the Elderly and Community Care has made a number of healthcare services available online to Maltese citizens and patients via the eHealth Portal ([www.ehealth.gov.mt](http://www.ehealth.gov.mt)). There are several e-Health Services available at this website, such as:

- An online application for the European Health Insurance Card (replacement of E111 form) as a trans European health coverage for Maltese citizens travelling inside the European Economic Area (EEA), to be eligible for free or reduced-cost emergency treatment in public hospitals or other public health facilities.

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<sup>66</sup> <http://www.mobile.gov.mt/about.asp>

<sup>67</sup> <http://www.mobile.gov.mt/services.asp>



- An online patient referral system for an appointment within the government hospital outpatient services. This is a facility for all Maltese doctors and other authorised health professionals to apply for a new appointment for their patients from any internet access point.  
This service also offers various electronic methods of notification and reminders to the patient such as through text messaging (sms) and email. It also provides the means for the patient to manage his own appointments through an electronic facility for the rescheduling and cancellation of an appointment.
- An online peer reviewed audiovisual Patient Electronic Library. This library is accredited and complies with 53 standards of quality and accountability verified by independent audit.
- An online facility for Maltese citizens to submit public health related complaints. The citizen plays a crucial role in creating awareness of potential threats to public health therefore this facility allows for a means of reporting such risks with the possibility also of remaining anonymous.
- A regularly updated online information system, and location maps, of pharmacies open on a Sunday or Public Holiday meant to address public concerns on the regular availability of open pharmacies in Malta.
- An online registration facility to become a potential blood donor. This also allows for an electronic screening of whether a client is eligible to donate blood.
- An online application to attend a weight reduction programme. This is a free program for Maltese citizens where trained facilitators will guide the client towards understanding better how being overweight might impact their general health and well being and how they may gradually make the necessary dietary and lifestyle changes needed to improve their health.
- An online application for Maltese citizens to attend a smoking cessation programme. This is a free service with the aim of providing support to all those who aim at quitting smoking.
- An online application to attend a sexual and reproductive health counselling session organised by the Health Promotion Department. This is a tool whereby the client can contact a professional sexual and reproductive health advisor who will listen to the client's concerns and provide him with discreet personalized professional advice for a healthy sexual and reproductive life.
- An online facility to request information and advice from the Genito Urinary Clinic physician on sexually transmitted diseases (e.g. HIV and related issues). This is a facility for self-referral and a service for the confidential diagnosis and treatment of sexually transmitted infections and related conditions.

Many of the services listed above can be used with the electronic ID. Interviewees have mentioned that many citizens are not using the services because they find it complicated to get the electronic ID. The other problem that was frequently mentioned is that not all health sector actors feel ownership for the new eHealth Portal – many doctors and practitioners are ignoring it.

In terms of one specific indicator, registered in the IDABC database, Malta has improved significantly during 2006. The possibility of booking appointments online and asking a practitioner's advice became available through the new services provided on the portal.

**Table 13: Health-related services (interactive advice on the availability of services in different hospitals; appointments for hospitals)**

	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI
2005	1	1	N.A.	1	1	1	1	1	1	1
2006 (Stand.Sept 2006)	1	0-1	-	2	0-1	1	4	1	1	1-2

Source: European Commission – Web Based Survey on Electronic Public Services 2006, IDABC – eGovernment factsheets by country

Stage 1: Information: online information about public services.

Stage 2: Interaction: downloading of forms.

Stage 3: Two-way interaction: processing of forms, including authentication.

Stage 4: Transaction: full case handling. decision and delivery (payment).

Practitioners and specialists do not make much use of websites in Malta, particularly due to the small size of the country and centralised health service, funded by the government. Renewal of prescriptions by email or through a website is not a recognised practice, and nor are online consultations or the sending of test results electronically.

The subject of online pharmacies is still being discussed in Malta. The online sale of prescription medicine is not explicitly prohibited, but it is only offered by foreign online pharmacies. There are no figures available on any purchases made from such foreign pharmacies. Market research on the demand for eHealth services has not been carried out yet but public demand appears to be mainly for general information.

## II. 6. Systems, solutions and problems

Technically, eGovernment and eHealth have been developed around a core infrastructure that enables the rapid deployment of eServices. The strategy adopted by the Ministry for Investment, Industry and Information Technology (MIIT) was to first focus on the framework of eGovernment, which was developed by Government's IT agency, MITTS Ltd., and then built a number of components, such as the electronic payment gateway to which the major banks are connected, and the various eServices, around the core infrastructure. While the framework for eGovernment, including a quality assurance framework that sets standards and creates a predictable technical environment, was developed by MITTS, none of the development of eServices is being done by MITTS. The role of MITTS is mainly that of providing central services and hosting all services, which is done exclusively at MITTS as a policy. There are just three employees working on implementation. Development of eServices is subcontracted to local companies and the rate of progress depends largely on private sector capacity. There are nine private companies actively involved in the development of these services. The roll out of services normally takes 14-16 weeks from the request for proposals, and the cost per service developed is normally in the region of EUR 25,000, which is considered to be inexpensive and reflects the healthy competition that exists in the local software industry. Services are generally commissioned with a maintenance agreement of 15-30% of contract value per annum. The experience of working with private companies has been described as very positive and cost effective by Government officials, to such an extent that MIIT has been under spending its annual budget for eServices development. Local companies are able to deliver a good quality product at a reasonable price and within agreed timeframes. eGovernment outsourcing has also contributed greatly to the engendering of the local ICT industry.

The greatest institutional challenge in the development of both eGovernment and eHealth is that of establishing ownership of the various eGovernment and eHealth elements and projects. The fast-paced development of eGovernment in Malta has been driven almost single-handedly by the Ministry for Investment, Industry and Information Technology (MIIT) to such extent that people working within other Ministries and Departments within the public service tend to feel that MIIT forced its way into their Ministries and Departments, made them reengineer their processes to make them compatible with electronic service delivery and left them with an electronic system to administer. While most Ministries and Departments acknowledge the positive spillovers of the reengineering process that was

triggered by the drive towards eGovernment, many argue that the system they were left with is not to their satisfaction, either because the consultation process was lacking, or because their ideas for improvement to the system were not implemented due to financial constraints, or because the training given on the system was inadequate. But the root cause for the rather critical attitude towards eGovernment by people working in the public service is that they feel that the eGovernment and eHealth projects that concern their Ministry or Department do not actually belong to them.

## **II. 7. Acceptance and usage of technologies and services by different actors**

It is difficult to assess the extent of eGovernment supply and take-up in Malta as there are no official statistics available on these issues and no research has been carried out on the overall balance of supply and demand. The Ministry for Investments, Industry and IT is currently developing a post-implementation review methodology that will facilitate the accurate measurement of take-up in the future, but the indications so far are positive.

Some of the main barriers that hinder the supply of eGovernment services in Malta are resistance to change in public service, the complexity involved in the re-engineering of services necessary for the implementation of eGovernment. There are also demand-side issues such as the limited real need for eGovernment in Malta, as the country covers a small geographical area, although the fact that the country is an archipelago provides scope for online services between islands. Cultural factors such as a slow and relaxed attitude to change and the adoption of new concepts, as well as accessibility factors such as the cost of the technology and its perceived complexity, may also inhibit take-up.

## **II. 8. The impacts of eGovernment and eHealth developments on the public sector and the healthcare system**

Although many of the services of the government have been introduced in the “e” versions as well, no assessment is available on the effects and impacts. Most likely the creation of databases and registries, as well as the necessary process re-engineering, have resulted in a more transparent administration, although not necessarily cheaper. For the healthcare system, a key issue would be the implementation of much wider range of telemedicine solutions, and very importantly teleconsultations even with practitioners and specialists abroad. The knowledge base of local doctors could easily be widened by the applications of those ICT solutions in healthcare.



### III: ASSESSMENT OF THE CURRENT DEVELOPMENTS AND TRENDS

#### III. 1. Main achievements and main shortcomings

According to the eGovernment Readiness 2005 index<sup>68</sup> prepared by the United Nations, Malta takes a prominent position, being 21<sup>st</sup> in the global ranking, being ahead of all other fellow New Member States except for Estonia (19<sup>th</sup>). Slovenia is 26<sup>th</sup> and Lithuania is the last ranked at 40.

*Table 14. eGovernment Readiness Index 2005*

	<i>Country</i>	<i>Web Measure Index</i>	<i>Infrastructure Index</i>	<i>Human Capital Index</i>	<i>E-government readiness Index</i>
1	United States	1.0000	0.7486	0.9700	0.9062
2	Denmark	0.9731	0.7642	0.9800	0.9058
3	Sweden	0.8654	0.8395	0.9900	0.8983
4	United Kingdom	0.9962	0.6471	0.9900	0.8777
5	Republic of Korea	0.9769	0.6713	0.9700	0.8727
6	Australia	0.9038	0.7098	0.9900	0.8679
7	Singapore	0.9962	0.6448	0.9100	0.8503
8	Canada	0.8923	0.6552	0.9800	0.8425
9	Finland	0.8269	0.6524	0.9900	0.8231
10	Norway	0.7962	0.6823	0.9900	0.8228
11	Germany	0.8423	0.6226	0.9500	0.8050
12	Netherlands	0.7346	0.6815	0.9900	0.8021
13	New Zealand	0.8038	0.6021	0.9900	0.7987
14	Japan	0.8154	0.5850	0.9400	0.7801
15	Iceland	0.6077	0.7704	0.9600	0.7794
16	Austria	0.7423	0.5784	0.9600	0.7602
17	Switzerland	0.6038	0.7105	0.9500	0.7548
18	Belgium	0.7115	0.5127	0.9900	0.7381
19	Estonia	0.6962	0.5281	0.9800	0.7347
20	Ireland	0.7115	0.5037	0.9600	0.7251
21	Malta	0.7923	0.4413	0.8700	0.7012

As the availability of the various eGovernment services is high according to the IDABC listing as well (see in details in Chapter II.5), it can be assumed that Malta has at least focused on main achievements in the fields of eGovernment.

Additionally, many eGovernment solutions of Malta are cited internationally as best practices - most importantly the electronic ID solution and the Mobile Government Infrastructure.<sup>69</sup>

After the provision of the services, success is determined by usage, which depends on general ICT conditions as well – access and skills. The government’s approach to provide multichannel access to the services themselves and mGovernment solutions seems to be a workable solution in enhancing the usage of the eGovernment developments.

eHealth is a different case for Malta. Regarding the administrative elements of eHealth i.e. registries, databases and insurance systems, these are incorporated into the general eGovernment policies and actions. On the other hand, telemedicine and sophisticated ICT-supported medical solutions are less

<sup>68</sup> <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan021888.pdf>

<sup>69</sup> <http://www.egov-goodpractice.org/gpd.php?>

visible. As data does not exist on this issue, only expert opinion, supported by national interviews can state that this sub-field needs further attention and development in Malta.

The most important shortcoming for Maltese eGovernment and eHealth developments is the lack of sufficient monitoring, impact assessment and the low level of case presentations and presence in international knowledge bases. Taking into account the Microsoft approach of using Malta as a pilot case for a specific eGovernment solution, one may guess that the size and basic ICT infrastructure of the country would allow for a lot of interesting pilot experiences. The indicators of IDABC also show a very impressive improvement – it is a shortcoming that Malta is not capable of further exploiting its results and achievements by applying a more strictly based scientific follow-up to the developments.

Telemedicine, telecare and independent living services on the other hand are so rarely documented that it is impossible to provide a sufficient analysis of their current state and development. Malta definitively has a shortcoming in this area.

In the domain of eHealth, a major shortcoming is that the results achieved by the Government and by the eHealth Portal do not spill over to a wider circle of healthcare professionals. Only few specialists or family doctors have websites. Basic information such as contact details, opening hours, address and general information about services can be found on the websites of clinics, hospitals, but online interaction with general practitioners, family doctors and primary local healthcare centres is very rare.

### **III. 2. Factors affecting the evolution of eGovernment and eHealth**

#### **Economic factors**

The Maltese economy shows signs of the general European slow-down, and on a per capita basis, Malta's GDP per head in PPS declined from 77.8% of the EU 25 average in 2000 to 69.5% in 2005. Nevertheless, currently the economic factor does not represent the most important impact on eGovernment and eHealth developments – but it may change for the future. There is a growing pressure to reduce costs of the public administration and healthcare, and the entry to the ERM II is a significant pressure.

#### **Legal factors**

As has been noted earlier on, there is no comprehensive eGovernment or eHealth legislation in Malta but there are pieces of legislation that provide a legal framework that supports eGovernment and eHealth applications. The most important pieces of legislation with respect to eGovernment and eHealth are the Data Protection Act and the Electronic Commerce Act, as these acts were drawn up by a specially-appointed Inter-Ministerial Working Group that was established in 1999 specifically to address the inadequacies of traditional legislation in supporting the development and widespread use of an electronic setting. The Office of the Commissioner for Data Protection, which is responsible for ensuring enforcement of the Data Protection Act, is well established and is enforcing the provisions of the Act with reasonable rigour.

With respect to ICT-related legislative developments, the ICT sector may have benefited from the fact that eGovernment, which acted as a torch-bearer for the sector, was part of the portfolio of the Ministry for Justice and Local Government during its formative years. When the new Ministry for Investment, Industry and Information Technology was created, the Minister for Justice and Local Government was appointed to the new Ministry, taking with it first-hand knowledge of the Justice Ministry.

#### **Policy factors**

National responsibility for IS policies lies with the Ministry for Investments, Industry and IT (MIIT), which was instituted following the re-election of the incumbent administration in the general elections of 12 April 2003. While the setting up of a Ministry to deal specifically with IT is a welcome step that

highlights the importance that the present administration is attaching to the development of the information society and economy, this initiative builds on what had been going on in this area in previous years.

With regards to the development and implementation of national IS policies, Malta has achieved quite a lot in a relatively short span of time. Although Malta started late in information management, it has caught up remarkably well since 2000, registering progress on all fronts, including the legislative framework. Both local businesses and the Maltese public have responded positively to the initiatives led by the Government and the e-Malta Commission to promote the development of the Information Society and Economy (IS&E) across all sectors of the Maltese economy and society. Importantly, the Government is committed to making the country a model for eGovernment and an ICT centre of excellence. These factors militate in favour of further development of the IS&E in Malta and suggest that the ambitious IS goals that the Government has set for this country may well be within reach.

### **Government – Private sector partnership**

The partnership made between the Maltese government and Microsoft has played an important role in the development of eGovernment in Malta. The government had a strong vision of becoming the centre of excellence for ICTs, but the munitions partly came from Microsoft. One could argue that this has a mere positive effect on the eService developments of the country, some may also be afraid of being too close to the giant and losing independence to the multinational company. Either way, the partnership has been a key factor in the evolution of eServices in Malta.

### **Technological factors**

The new Government network, MAGNET II, which was launched in July 2005 is a state-of-the-art network, which provides enhanced bandwidth per site, offers better reliability through strict service level agreements, guarantees 99.8% minimum site availability, and is fully secure through extensive encryption. MAGNET II also transports voice over IP calls efficiently and effectively between all connected organisations. The eGovernment in Malta may hence be said to run on an advanced technological platform.

The proliferation of technology in households and businesses may also be said to be high, including broadband development across the islands.

It is interesting to look at Malta's Networked Readiness Index (NRI) as computed by the World Economic Forum in its Global Information Technology Report.<sup>70</sup> The NRI measures how prepared economies are to participate in and benefit from ICT developments. It acknowledges that there are three important stakeholders to consider in the development and use of ICT, namely individuals, businesses, and governments; that there is a general macroeconomic and regulatory environment for ICT in which the stakeholders play out their respective roles; and that the degree of usage of ICT by (and hence the impact of ICT on) the three stakeholders is linked to their degrees of readiness (or capability) to use and benefit from ICT. Table 8 reproduces Malta's NRI ranking for the last three years.

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<sup>70</sup> World Economic Forum (2003b, 2004b, 2005b)

**Table 15. Network Readiness Index for Malta**

<b>Ranking</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>
<b>NETWORKED READINESS INDEX</b>	30	28	27
<b>Environment Component Index</b>		<b>28</b>	<b>29</b>
Market Environment		58	41
Political and Regulatory Environment		29	20
Infrastructure Environment		21	29
<b>Readiness Component Index</b>		<b>35</b>	<b>31</b>
Individual Readiness		31	35
Business Readiness		59	40
Government Readiness		36	23
<b>Usage Component Index</b>		<b>26</b>	<b>24</b>
Individual Usage		21	20
Business Usage		50	29
Government Usage		11	17

From the component indices, it appears that Maltese businesses lag behind Government and individuals both in their ICT readiness as well as in ICT usage. The main factors underlying the low ranking of Maltese business in the respective NRI component indices are related to low investment in training, R&D and innovation. The market environment suffers from related factors, namely the lack of cluster development and limited collaboration between industry and research institutions, as well as a relatively high degree of bureaucracy.

### **Employment and socio-cultural factors**

One of the major weaknesses of Malta's socio-cultural make up is that the employment rate is among the lowest in Europe,<sup>71</sup> due to the fact that the female participation rate is the lowest among the EU25. Female participation in the labour market is increasing, but rather slowly, and is being met with significant resistance from the more conservative proponents of Maltese society, such as the predominant Catholic Church, which argues that low female participation is not a weakness in itself but a sign of the preservation of traditional – and implicitly healthier – family life and values. Malta is a country where the traditional family model reigns supreme to the exclusion of all other family models that have gradually become the undesired – and therefore unaddressed – reality of the Maltese social fabric. Policies and legislative developments lag behind social developments and are often at a tangent of emerging social trends. In spite of the steadily increasing number of marriage breakdowns and subsequent personal separations, for which working women are often blamed by traditionalists, Malta remains the only European country without civil divorce. Cohabitation, especially post-separation, is fairly common but alternative families, such as families headed by cohabitating couples, as well as single-parent families, have a hard time at gaining social acceptance.

Poverty and social exclusion is contained, largely because Government plays a key role in redistributing income. But the social safety net is coming under intense pressure as unemployment has been at a higher level in recent years and emerging social trends that are not being met by appropriate policies and legislative provisions are giving rise to a new class of poor and socially excluded. The costs of the social safety net are becoming increasingly more difficult to sustain.

### **EU membership and migration**

By definition, EU membership implies the full freedom of movement of people, and particularly people in search of opportunity. Malta has a fairly recent history of emigration that predisposes the Maltese for searching for better job opportunities abroad and integrating into other societies with

<sup>71</sup> In 2006 employment rate in Malta was 54.8%. Among the EU25, only Poland was performing worse: 54.5%.



relative ease. There is hence the risk that Malta may also lose some of its better qualified human resources to other European countries. The ICT sector is particularly susceptible to this brain drain. Regarding the medical sphere, brain drain is also crucial: according to a study, 51.6% of doctors graduating in Malta between 1994 and 2003 has left the island for abroad, while only 7.5% went back eventually.<sup>72</sup>

On the other hand, Malta may be able to attract skilled resources from Central and Eastern Europe in specialised areas where its labour force falls short, and may also benefit by tapping into the skills of the female human resources that are currently out of the labour market, by devising incentive-compatible schemes that would entice these women to join the labour force. Meanwhile, EU membership has made Malta a more attractive destination for irregular immigrants coming from Africa and the Middle East, and this issue has become one of the hottest national debates. It is unlikely that these emigrants will be of any particular relevance to the development of the information society in Malta, but they are posing an unsustainable burden on public resources and it is likely that the country will require assistance from its European counterparts to be able to find a long-term, acceptable solution to the problem of irregular immigration.

### Demography

Demographically, Malta shares the problem facing most European countries. It has an ageing population that is bound to intensify social and economic pressures as the generation of post-war baby-boomers reaches pensionable age. Apart from necessitating an immediate reform in the pensions system to guarantee a sustainable welfare system in future, this has several other more direct implications on the information society and economy. Essentially, it implies that, in a few years time, a substantial part of the population may be at the risk of social exclusion because access to ICTs would be a necessary prerequisite for full integration in society when the same generation would have grown up in a world without ICTs.

The Government is trying to mitigate the extent of such a potential digital divide by offering free ICT education for adults and free Internet access, both through local councils. Moreover, it has offered a free e-mail address to every Maltese citizen, in parallel with its extensive campaign to promote its e-government and m-government services. These initiatives have proved to be very successful, possibly because of the cultural fabric of Maltese families. Children tend to live with their parents until they get married and parents hence have the possibility to follow the progress of their children through their years of formal schooling. Since most mothers do not work, they generally spend a lot of time with their children while they study or play with their computer, and hence they have both the opportunity to be exposed to ICT and the incentive to familiarise themselves with the technology.

### III. 3. Drivers of and barriers to eGovernment and eHealth developments

The **major economic trends** may compose **barriers** to eServices developments, the fiscal constraints limit public expenditure on eGovernment and eHealth and the economic slowdown is deterring investment by the private sector. The entry to the ERMII poses extra fiscal burdens and costs were cut recently in several domains. From the eHealth point of view, an additional economic barrier is that the resources of the Health Ministry are being absorbed by the construction of a new general hospital.

An explicit **driver** for the Maltese eGovernment development has been the **policy vision** of setting the ICT sector as one of the new target sectors following the decline of established industries, therefore inviting major ICT industry actors to the country. The **partnership of the government and the business sector** was followed by the successful outsourcing in development of eGovernment (which also encouraged development of local ICT industry). The opportunities offered to the private sector were crucial for the development of the existing eGovernment services in Malta.

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<sup>72</sup> Martin Balzan – Tessa Bugeja: Study on Medical Manpower Migration, <http://www.mam.org.mt/pics/imagebank/brain%20drain%20report%201992-2001.pdf>

The government's successful outsourcing policy has offered scope for the development of the local ICT industry, particularly the ICT services sector, and could further stimulate private sector investment and innovation. The wide-ranging long-term partnership agreement that the Maltese Government secured with software giant Microsoft in 2003 provided a good impetus, even though it has not so far lived up to its expectations with regards to technology acquisition that upgrades the country's technical human resource base.

But prospects in the ICT sector have recently been refuelled with the launch of the SmartCity@Malta project in 2006 by Tecom Investments of Dubai, who have also acquired the Government's 60% controlling stake in Maltacom, the country's only fixed-line telephony and ADSL provider. SmartCity@Malta will be a state-of-the-art ICT and Media Park and is expected to attract over €250 million in FDI and to generate 5,600 new jobs in eight years, around 65% of which will be knowledge-based jobs. This project is intended to enable Malta to become an ICT centre of excellence by exploiting its strategic location at the southern periphery of the European Continent with easy access to Northern Africa and the Middle East, and by facilitating the formation of new partnerships that would provide an opportunity for relatively small organisations to pool in resources into extensive projects that could be internationally competitive.

From the legal point of view, certain pieces of legislation that provide a legal framework that supports eGovernment and eHealth applications exist: the Data Protection Act (2002) and the Electronic Commerce Act (2002), while others are missing and there is no comprehensive eGovernment or eHealth legislative framework. Nevertheless, it is important to list as a **driver the good connections and cooperation between the Ministry for IT and the Justice Ministry** (former owner of the domain), which may help to overcome missing elements of legislation.

It has been mentioned that the vision of the government to become the centre of excellence for ICTs has been a key factor and is still an important driver for the eServices developments. On the other hand, **the lack of vision** for how to turn this for the good of the citizens and businesses – namely, how to **move towards the demand/client-driven eGovernance from the existing supply-driven models – is a barrier** which should be tackled in the future.

One of the **barriers** is the **resistance in the public administration towards the adoption of new technologies**. There is no reliable data to support the statement, nevertheless when there are citizens calling in to inquire about the provision of a public service they are less likely to be directed to the electronic delivery channel by public service officials who have not fully embraced eGovernment.

The **technological/service provision aspects** are also **drivers** rather than barriers. The existence of a state-of-the-art government network and the large number of eGovernment services launched with a high level online sophistication is a good basis and driver for further steps and improvement. But it is important not to lose the speed of development and to have an eye on potential new technology solutions, most importantly alternative technologies and technology convergence, and the effect of these on the types of services provided.

The existing ICT infrastructure of the islands is a good starting point, PC and Internet penetration is high, broadband penetration is rapidly increasing and mobile penetration is very high. It is important though to ensure that the share of population with the lowest income can also access these tools and therefore the eServices because the cost of broadband and mobile telephony is still relatively high, which may be a **barrier for eInclusion**. Additionally, although Malta is geographically small, it has its own regional disparities with respect to basic literacy and digital literacy, educational attainment and life-long learning, employment and income, which should also be taken into account.

The **major demographical trends are a key driver for eHealth** developments as the need and demand for a sophisticated, high level healthcare service and for independent living services increase which opens the opportunity for eHealth developments.

On the other hand, the **lack of an Integrated Health Information System**, which would facilitate and improve the interaction between healthcare processes, healthcare delivery units and different healthcare providers composes **a barrier to eHealth developments**. The steps taken so far in the domain of eHealth are scattered compared to an expected Integrated Health Information System.

Form the socio-cultural aspect, **the fluency of most of the population in the English language** makes internationally available eServices accessible for a wide circle of users. This is definitively a **driver** for the use of eServices, although from the point of cultural heritage and preservation of the Maltese language this may have a negative effect, yet its introduction of as an official EU language will definitely counter any inverse effect.

It could be considered as a **driver** for the appropriate development of eServices (both eGovernment and eHealth) that the Office of the Commissioner for Data Protection is well established and it is **enforcing the provisions of the Data Protection Act** with reasonable rigour. This may hamper the launch of certain services in the short run but in the long term this acts as a driver for further development and improvement of the services and solutions.

Finally, the performance of Malta in **international comparisons, indices, rankings**, with a special attention to scoring well on **EU indicators** (IDABC) have been **drivers** and these are expected to have a strong influence in the future as well. As the political vision of being an ICT model-country is well-supported by international results, the country will try to follow a successful path in the domain of eServices.



#### IV: POLICY CHALLENGES FOR THE DEVELOPMENT OF E-GOVERNMENT AND E-HEALTH

One of the concepts, which have to be introduced to ensure further development of eGovernment and eHealth is that of the **right to eServices for all citizens**. This concept can be strengthened if the right to eServices from Government becomes a legal right for all citizens. The promotion of this concept of the right to eServices as well as the potential incorporation of this right into Maltese law in the future is a matter for the Government to address.

As it was described among the drivers and barriers, an important barrier to both eServices development are the fiscal constraints. The need for the relevant budget is easier expressed if it is supported by a preliminary (financial) analysis of its costs and the benefits. The most important measure for the government is to apply a **transparent monitoring** that is based on internationally comparable indicators and benchmarks, and based on the gathered data, it is crucial to **commission the relevant analyses** in order to present sufficient information for the prioritisation of tasks and ordering budgetary requests for the selected developments.

The Maltese eGovernment development has been significant and at this stage it is very important in determining the next steps towards a more **demand-driven development approach**. Demand-driven services are envisaged in two main aspects: one, the choice of which service to be “electronised” is determined by the users, second, the users themselves are more targeted according to their special needs and behavioural patterns. This should also be supported by the appropriate market research.

The ICT industry in Malta – both the multinational actors as well as the local business – has been highlighted as a driver. One of the many policy challenges (related to a broader economic development issue, not only of the eServices) – is how to **keep and further develop this ICT sector**, which plays such a crucial role, when international competition is rising, the ICT industry of Europe is challenged by other continents.

Other measures, which the Government may adopt to promote the take-up of eGovernment and eHealth are **financial incentives**. It appears, however, that given the present fiscal constraints, Government is reluctant to adopt measures of this kind, especially since the implementation of eGovernment and eHealth have resulted in a better quality of service rather than a lower cost of public service provision. Malta may be too small a country for the implementation of eGovernment and eHealth to result in savings in the cost of public service provision.

For the further development of eHealth, a key policy issue is to develop **an integrated and holistic view and system for the Health Information System**. This should include the services and databases already existing. An additional task is to find the **incentives for stronger involvement of all the actors** of the health sector: good eHealth services need the active cooperation of local doctors, hospital departments, pharmacists, etc. In terms of eGovernment services, many have been decentralised to local council offices and local staff has been involved in the provision of the services. eHealth services, on the other hand, are mainly served only through the eHealth portal, and they constitute a top-down initiative, where the involvement and participation of hospitals, clinics and doctors still needs a strong push.

Other important areas of eHealth, where experts have called for effective actions are the facilitation of electronic monitoring of the patient’s health and, very importantly, the facilitation of communication between patients and healthcare providers.

**eHealth can be used as a tool to increase the health knowledge base of Malta**. For a small-size country, specialist knowledge is not always available in every possible field. The quality of healthcare is much more dependent on telecommunication tools for diagnosis and treatment than in the case of a

bigger and geographically less isolated country. Discovering new ways of knowledge sharing, teleconsultations and treatments procedures with the involvement of specialists geographically far away should be a key priority for Malta and eHealth solutions.

In the public sector the resistant attitude of some public service officials, particularly of some of the more senior ones, towards adoption of new technologies and electronic delivery of public services as well as towards change in general is one of the major limiting factors towards promoting eGovernment and eHealth. **A new generation of public officials** is likely to contribute to an increased promotion of eGovernment and eHealth by themselves.

The promotion of these eServices is even more important at the local level than at the central: those citizens who either cannot afford the necessary infrastructure or who lack the skills or the motivation for usage, can be offered a PIAP and a helpful hand at the local offices: therefore they can be taught to learn to use at least some of these services. **A joint promotion – capacity building campaign at the local level** (local councils and social security front offices) could be a promising initiative.

**Security, confidentiality, trust and data protection** issues should be given priority. This task is double fold: firstly, a sufficient security level must be ensured from the technical and legal point of view, secondly, the citizens should be informed about the security issues that affect them and the level of trust they should show when using the eServices.

The **tackling of digital divide** should also be a policy priority for the Maltese government, which could be handled by either awareness raising campaigns, and also by launching further measures for increasing ICT literacy. As it was suggested that the digital divide is represented not only in terms of income but according to educational and age groups, the potential of life long learning, adult education and workplace training should be used on the one hand, and new ways of motivation can be applied for the older age groups (for example joint games, contests, etc).

The Government also has an important role to play in **widening delivery channels** for eGovernment and eHealth. Although Internet access is relatively high, there are still households who opt not to have a PC and the Internet at home. Most of these households claim that the reason is not financial but purely because they do not see the need for it. Yet many of these households have access to other potential delivery channels of eServices such as digital TV. For socio-cultural reasons, the take up of digital TV is relatively faster than that of Internet and other technologies, which are not associated primarily with entertainment. The majority of Maltese people are not particularly inclined to take up the latest technologies but tend to be rather conservative and extremely cost conscious. While most people have a mobile phone, the take-up of mobile telephony services other than SMS is low in spite of all the marketing efforts to promote 3G services by the leading mobile telephony operators. Part of the reason is the prohibitive cost of these services, which is largely due to the small market size and relatively high investment costs, as opposed to the extremely cheap cost of SMS. The other part of the reason is that people simply do not see the need to make use of more sophisticated services; distances are short and communities are tight-knit such that information travels easily and largely by word of mouth.

## **V: MAJOR FUTURE R&D CHALLENGES**

### **More data, more monitoring – cost-benefit analyses and impact assessments**

One of the major barriers of further analysis of the Maltese eGovernment and eHealth developments is the lack of available monitored data, survey statistics, which could serve as a basis for further, more complex research in terms of cost-benefit analyses and impact assessments. The results of the recent, very impressive eGovernment developments in terms of availability of services is hard to evaluate in real terms without knowing more of the usage, of the cost-benefit aspects and the impacts of the launch of these services.

### **International benchmarking and best practice exercises**

As Malta aims at being a centre of excellence for eGovernment development, it should pay more attention to research in this area. Related to the first R&D challenge, the collection of more data and the results should be placed in an international environment, and should be measured against the experiences of other countries. More extensive research on the collection of best practices should also be carried out, by determining the exact factors behind the success of each case. A well-improving eService can turn out very badly in a different environment, therefore existing best practice collections should go beyond listing up the separate cases and they must go into details finding the key factors behind them.

### **Demand-driven and targeted eService developments**

In order to be able to determine the ideal areas of further developments, the necessary market research projects should be commissioned. A more complicated research task is the mapping of the various target groups and needs in order to be able to take one step further in the provision of the existing services. Malta already provides personalised eGovernment services (based on user profiles)<sup>73</sup> but this area still offers many opportunities for further research.

### **New business models and ways of cooperation**

Malta has a unique cooperation with a multinational ICT company, and the size of the country makes the relationship even more specific. This experience, if well documented and analysed, could create a very interesting case for other countries – and for regions of bigger countries as well. The risks and advantages, the costs and benefits of such a special partnership must be explored as much as possible, but it could be very promising to have further strategic partnerships in other areas or domains, most importantly in eHealth. Discovering other ways of involving the private sector is also important – how could these existing experiences be used in the fields of eHealth?

### **The relationship between eHealth development and the necessary health reform measures.**

The current financing frames for the health sector are facing many challenges and reforms measures are inevitable. It is a question, what kind of role eHealth could play in these measures. The evident roles – the “registry, administrative” role is easy to determine but how could eHealth influence the health system and the processes to a larger account?

### **European level integration and interoperability**

To achieve more integration in the various eServices provided within the European Union is already an important European challenge. For this island country, it is especially important to ensure that as

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<sup>73</sup> <http://www.miti.gov.mt/site/page.aspx?pageid=3015>

many cases and issues as possible of citizens and businesses can be handled via electronic means. All interoperability questions, semantics, uniform data interface and data protection, should be handled as key research priority for the near future in order to take the consequent policy and development steps as soon as possible.

### **Alternative technologies**

The fast take-up and success of the mGovernment services are pointing out the potential in alternative technologies. The use of digital TV and other solutions for provision of eServices should be looked at in detail not only from the technological point of view but from the economic-social aspect as well: if the given technology can be expected to go through a fast take-up, even higher initial efforts and costs would be worthwhile in order to gain higher penetration and use of the services, therefore being able to exploit the benefits and also to tackle the digital divide and exclusion.

The evolution of mobile technology also raises the question how broad mServices could grow. At this stage, many services are impossible to be carried out through a standard mobile phone but as PDAs, palmtops and mobiles are merging and their use is spreading, new ways of service evolution may take place on these specific devices, apart from the other technologies (PC, digital TV, etc)

### **The language issue**

As part of the partnership with Microsoft, the basic Microsoft software now has the Maltese language version, which is not evident for such a small country/language area. Nevertheless, it would be important to determine in terms of all software used the share of English versus Maltese. In many small-language countries, the key concern is the preservation of the digital divide if software and content is not present in the local language. English knowledge is at rather high level in Malta, therefore the threat for a digital divide is not major, nevertheless, as the Maltese language is not spoken elsewhere, the other question may also rise: is the Maltese language protected enough?

### **The pilot case vs the critical mass**

An ongoing debate between countries with different sizes, whether it is better to be big or small – the excellent development of Malta in the availability of eGovernment services may lead to the conclusion that in smaller countries development is easier to achieve, the country could be covered with an action plan that would be only a pilot project elsewhere. Others argue that the launch of many initiatives is lagging behind because the market size in these countries hardly or never reaches the critical mass for certain services.

An interesting research project would be the analyses of the critical threshold for various services and technologies in their evolution and in the different environments in which they are launched. For future policy measures, the knowledge from this study could save serious budgets, either at national or at the European level.



## CONCLUSIONS

### Economic background

Malta's GDP per capita is around 69% of the EU25 average,<sup>74</sup> which is the fourth highest among the New Member States behind Cyprus, Slovenia and the Czech Republic. In comparison with the EU15, it is below Portugal, Greece and Spain. The Maltese economy is small and very open, well diversified with the principal growth areas being high-tech manufacturing, IT-related and financial services. Malta is the smallest, mostly densely populated Member State in the European Union: its average population density is 11 times higher than the EU25 average.

The Government has traditionally played a dominant role in the Maltese economy, attested both by the share of its expenditure in GDP and by a history of strong controls which have only recently been dismantled. The share of public administration in GDP has increased over the past years, due to both wage and salary increases and Malta's bid to join the EU, which has increased demands on the public administration. Similar to other small countries Malta has a proportionately larger government as it is too small to benefit from scale economies at the governmental level: government expenditure averaged 45% of GDP over the past decade; the bulk of which consisted of wages and salaries to public sector employees and social benefits.

Malta's demographic indicators are relatively good compared with the EU25: its population is relatively young, though ageing.

### eGovernment and eHealth services

The average level of sophistication for all 12 citizen-related public services, measured by IDABC services, is 3.0.<sup>75</sup> Services with the highest levels of online interaction are those related to income taxes, job searches by labour offices, unemployment benefits, student grants, passports, car registration, applications for building/planning permission, declarations to the police, public libraries, certificate requests and delivery, announcements of moving and health. The average level of sophistication of eServices for business in Malta in 2006 was 3.4, with social contributions for employees, corporation tax declarations and notifications, VAT declarations and notifications, registrations of new companies and customs declarations having the highest level.

These scores give Malta an average ranking among the EU25 countries. The Ministry for Investment, Industry and IT is working towards having 90% of the Government's basic public services online. With the indicators listed in IDABC, the electrification of many government services in Malta is well advanced and has reached high levels.

A unique development in terms of technology and approach is the mGovernment service. This allows mobile technology as an additional service delivery channel. The significance of mobile services comes from the geographical conditions of Malta and the fact that Malta's take-up of mobile phones is high (74% of the total population), thus facilitating the use of mGovernment services.

eHealth services are partly provided via the eHealth Portal ([www.ehealth.gov.mt](http://www.ehealth.gov.mt)), where several e-Health services are available. These include online application for the European Health Insurance Card, an online patient referral system for an appointment within the government hospital outpatient services, various electronic methods of notification and reminders to the patient, an online peer reviewed audio visual Patient Electronic Library, a regularly updated online information system and location maps, among others.

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<sup>74</sup> On a Purchasing Power Parity (PPP) basis,

<sup>75</sup> The index measures level of online sophistication. One is the basic level allowing the user to obtain information about the service, while level four is the highest stage allowing full case online transaction.

## **Achievements and shortcomings**

According to the eGovernment Readiness 2005 index, Malta has a prominent position. It is 21<sup>st</sup> in the global ranking, and is ahead of all other fellow New Member States except for Estonia (19<sup>th</sup>). Considering all the differences in economic, historical conditions, this shows that the country is advanced in eGovernment, when compared with countries at similar levels of economic development. The level of provision, and the availability of various eGovernment services is high according to the IDABC measurement. Malta has important achievements in eGovernment, and many of its eGovernment solutions are cited internationally as best practices (most importantly, the electronic ID solution and the Mobile Government Infrastructure).

The eHealth level of development depends on the nature of each particular health service. As the administrative elements of eHealth, registries, databases and insurance systems are incorporated into the general eGovernment policies and actions, their level of sophistication is higher than the average level eHealth services in general. Telemedicine and sophisticated ICT-supported medical solutions, for example, are less developed and less visible.

Besides the overall weaker level of development of eHealth, a special shortcoming of both Maltese eGovernment and eHealth developments is the lack of sufficient monitoring, and impact assessment and the low level of case presentations and presence in international knowledge bases.

Finally, a major shortcoming in eHealth is that the good practices achieved by the Government and the eHealth Portal do not spill over to the lower levels of healthcare professionals, especially general practitioners.

## **Factors affecting eGovernment and eHealth developments**

With regards to the development and implementation of national IS policies, Malta has achieved quite a lot in a relatively short time span. Although Malta started late in information technology development, it has caught up remarkably well since 2000 in most areas, including those related to the legislative framework. There is no comprehensive eGovernment or eHealth legislation in Malta but there are pieces of legislation that provide a legal framework supporting eGovernment and eHealth applications. Both local businesses and the Maltese public have supported the initiatives led by Government and the e-Malta Commission to promote the development of the Information Society and the Economy (IS&E). The partnership between the Maltese government and Microsoft has played an important role in the development of eGovernment in Malta. While the government had a strong vision of becoming the centre of excellence for ICTs, the ideas and concrete solutions came partly from Microsoft.

One of the negative factors affecting eGovernment and eHealth developments has been the low level of employment. The employment rate in Malta is among the lowest in Europe, and the female participation rate is the lowest among the EU25. At the same time, poverty and social exclusion is limited, largely because the Government plays a large role in redistributing wealth.

Demographically, Malta shares the problem facing most European countries – that of an ageing population. This problem is bound to intensify social and economic pressures as the generation of post-war baby-boomers reaches pensionable age. The demand for health services will rise and the need to achieve cost saving and better quality services through e-Health will grow.

## **Policy options**

Direct policies for eService development should be defined better and distinguish them from overall information society ones. An important measure for the government is to apply transparent monitoring based on internationally comparable indicators and benchmarks, and to commission the relevant analyses to present sufficient information for the selection of tasks. One of the weakness of eGovernment and eHealth developments is the lack of monitoring and feedback, which prevents the ex post assessment of projects, programmes and development targets.

The ICT industry in Malta has been highlighted as a driver of eGovernment and eHealth. One of the many policy challenges (related to a broader economic development issue, not only to that of

eServices) – is how to keep and further develop this ICT sector, when international competition is rising, and the European ICT industry is challenged by other continents.

Other measures which the Government may adopt to promote the take-up of eGovernment and eHealth are financial incentives (tax exemptions, credit and other financial stimulus for users and adopters of these services). There is a strong need to improve the scope of eService provision as the availability of eServices is limited and existing eServices are lacking high level sophistication.

For the further development of eHealth, a key policy issue is to develop an integrated and holistic view of the Health Information System. This should include the existing services and databases. An additional task is to find the incentives for stronger involvement of all the actors of the health sector (local doctors, hospital departments, pharmacists, etc.).

In the public sector, the resistant attitude of some public service officials is one of the major limiting factors. However, a new generation of public officials is likely to contribute to the increased promotion of eGovernment and eHealth. The promotion of eServices for users is important both at national and local levels.

Security, confidentiality, trust and data protection issues should be given priority. This task is twofold: a sufficient security level must be ensured from the technical and legal point of view, and citizens should be informed about the security issues that affect them and the level of trust they should show when using eServices.

The Government also has an important role to play in widening delivery channels for eGovernment and eHealth.

### **Research and Development Challenges**

One of the main policy challenges is to proceed with reform in the public sector. Within this challenge, the related research challenges cover the overall institutional, organisational and administrative/managerial changes necessary for eGovernment and government modernisation generally. Similarly, it is important to establish and assess the links between eHealth development and health reform.

More research work is needed regarding adaptable personalised user interfaces, which would allow a more diversified and personalised access to online public services.

Another research challenge is integration and interoperability. The main focus is on the interoperability of public organisational units and includes technical, semantic and organisation aspects that must be considered in order to achieve seamless and joined-up activities.

All interoperability questions, semantic issues, uniform data interface and data protection should be handled as key research priorities in the near future in order to take the consequent policy and development steps as soon as possible.

The significant level of development of mGovernment services points to the potential in alternative technologies. The use of digital TV and other solutions for provision of eServices should be given detailed consideration.

International benchmarking and best practice exercises are an important R&D challenge. As Malta aims to be a centre of excellence for eGovernment development; it should pay more attention to research in this area. Related to the first R&D challenge, the collection of more data and the results should be placed in an international environment, and should be measured against the experiences of other countries.



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**Abstract**

In 2005, IPTS launched a project which aimed to assess the developments in eGovernment, eHealth and eLearning in the 10 New Member States at national, and at cross-country level. At that time, the 10 New Member States were Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia, and Slovakia. A report for each country was produced, describing its government and health systems and the role played by eGovernment and eHealth within these systems. Each report then analyzes, on the basis of desk research and expert interviews, the major achievements, shortcomings, drivers and barriers in the development of eGovernment and eHealth in one of the countries in question. This analysis provides the basis for the identification and discussion of national policy options to address the major challenges and to suggest R&D issues relevant to the needs of each country – in this case, Malta.

In addition to national monographs, the project has delivered a synthesis report, which offers an integrated view of the developments of each application domain in the New Member States. Furthermore, a prospective report looking across and beyond the development of the eGovernment, eHealth and eLearning areas has been developed to summarize policy challenges and options for the development of eServices and the Information Society towards the goals of Lisbon and i2010.

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