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

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ACKNOWLEDGEMENTS

PREFACE

Policy context

At the European Council held in Lisbon in March 2000, EU-15 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.[1]

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[2] - 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[3] and e-health.[4] Public services have also been included as application fields for ICT in the 7th Framework Programme for Research and Development[5] and in the ICT policy support programme of the Competitiveness and Innovation Programme (CIP).[6]

Research context

IPTS[7] has been researching IS developments in acceding countries[8] since 2002.[9] 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[10] 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.

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

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[1]   http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm

[2]   "i2010 – A European Information Society for growth and employment" COM(2005) 229

[3]   "I2010 eGovernment Action plan" COM(2006) 173

[4]   "e-Health - making healthcare better for European citizens" COM (2004) 356

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

[6]   Official Journal L 310/15 of 9/11/2006

[7]   Institute for Prospective Technological Studies, one of the seven research institutes that make up the Joint Research Centre of the European Commission

[8]   Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia, and Turkey

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

[10]   Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia and Slovakia

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 eGoverment, 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 Latvia

This report was prepared by the Latvian consortium member, the Baltic International Centre for Economic Policy Studies (BICEPS), and presents the results of the research on eGovernment and eHealth in Latvia.

First, it describes Latvia'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

Note that many of the abbreviations are acronyms based on the original Latvian words.

ASP	Application Service Provider
ATD	Road Transport Administration Department
BITNET	Baltic International Telemedicine Network
BOL	Central Bank of Latvia
CAA	Civil Aviation Administration
CFCA	Central Finance and Contract Agency
CSB	Central Statistics Bureau
CSDD	Road Traffic Safety Directorate
DAUKS	Electronic Document Circulation Management and Monitoring System
DEAC Ltd.	Digital Economy Advancement Centre
DPS	Secure data network system
ECDL	European Computer Driving Licence
EHIC	Electronic European Health Insurance Cards
EHR	Electronic Patient Records
EPR	Electronic Health Records
ERDF	European Regional Development Fund
EU-15	EU member states before May 1st 2004
EU-25	EU member states after 2004 enlargement
FTKT	Financial and Capital Market Commission
GDP	Gross domestic product
GP	General Practitioner
GPRS	General Packet Radio Service
GVVA	State Agency for Mental Health
IS	Information System
ISB	Information Society Bureau
ISP	Internet service provider
IUB	Office of Public Procurement Supervision
IVIS	Integrated State Information System
IVIS IM	Income Declaration Register's Integration Module
IZM	Ministry of Education
KIS	Culture Information System
KMC	Accident and Emergency Medicine Centre
KNAB	Corruption Prevention and Combating Bureau
Kurzeme	One of the 5 regions of Latvia; the western region
Latgale	One of the 5 regions of Latvia; the eastern region
LIC	State Centre for Infectology
LIKTA	Latvian Information Technology and Telecommunications Association
LMB	State Medical Library
LMMC	Latvian Maritime Medical Centre private clinic
LPC	Latvian Food Testing Centre
Lursoft Ltd	A private company that runs the Latvian Enterprise Register database
LVL	Currency unit Latvian Lat
MA	State Agency for Housing
MADEKKI	Inspectorate of Healthcare Quality and Efficiency
MIS	Management Information Systems
MK	Cabinet of Ministers
NCTS	Computerised Transit Control System
NDP	National Development Plan

NGO	Non governmental organization
NVA	State Agency of Narcology
NVA	State Employment Agency
PC	State Pathology Centre
PIAP	Public Internet Access Point
PMLP	Office of Citizenship and Migration
RAPLM	Ministry of Regional Development and Local Government
Saeima	Latvian Parliament
SMVA	State Agency for Sports Medicine
SOA	Service Oriented Architecture
SRS	State Revenue Service (VID)
STASC	State Agency for Skin Diseases and Sexually Transmitted Diseases
SVA	State Agency for Strategic Public Health
TPSVA	Tuberculosis and Lung disease Agency
UR	Enterprise Register
VADC	Blood Donor Centre
VCP	State Civil Service Administration
VFI	State Pharmacological Inspectorate and Testing Centre
VID	State Revenue Service (SRS)
Vidzeme	One of the 5 regions of Latvia; the central region
VISR	State IS Register System
VITA	State Information Network Agency
VM	Ministry of Health
VNDPT	State Security Data Transmission Network
VOAVA	State Compulsory Health Insurance Agency
VOIP	Voice over Internet protocol
VPILS	State and Municipal Office Administration
VSAA	State Social Insurance Agency
VSI	State Sanitary Inspectorate
VSMTA	Health Statistics Agency
VTMEC	State Forensic Pathology Centre
VVVA	State Agency for Health Promotion
VZA	State Agency for Pharmaceuticals and Drugs that runs the Medicine Register
VZD	State Land Service
WAP	Wireless Application Protocol
WHO	World Health Organisation
ZCA	State Agency for Pricing Pharmaceuticals that runs Medicine Price Register
Zemgale	One of the 5 regions of Latvia; the southern region

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INTRODUCTION: COUNTRY FEATURES

General data

Official name:	Republic of Latvia
Area:	64 589 km^2
Population:	2 294 590 (January 2006)
Capital:	Riga, 0.7m population (32% of total)
Urban population:	68 %
Language:	Latvian
Independence:	Proclaimed in 1918. Regained in 1991
Political structure:	Parliamentary Republic
Administrative division:	5 planning regions, 26 town regions, 26 amalgamated areas, 7 cities, 70 towns, 444 counties.
Currency:	Lats (LVL)
Exchange rate	LVL per euro 0.7028 (fixed)

The Republic of Latvia is an independent democratic republic first proclaimed on 18 November 1918. The Soviet army occupied Latvia in 1940 and then in 1945 Latvia was incorporated into the Union of Soviet Socialist Republics. Latvia regained its independence in 1991.

The legislature is the Saeima (the Parliament), which consists of 100 representatives each elected for a period of 4 years. The 8th Saeima was elected on 5 November 2002 and the 9th – the current Saeima – on the 7th October 2006.

The Saeima elects the State President for a period of 4 years. The current President is Valdis Zatlers who took over in early July from Vaira Vīķe-Freiberga at the end of her second term.

The Prime Minister and the Cabinet of Ministers have the executive authority as the government.

In 2004 Latvia became a member of the European Union and NATO. As an independent sovereign state Latvia also participates in a large number of international organizations.

Economic situation, economic growth

Latvia's economic performance over the fifteen years since independence has by and large been a success story. It has transformed itself from a Soviet republic with an economy that was totally integrated into the Soviet command economy to an open functioning market economy. In the process it has evolved from a manufacturing to a service-oriented economy, with services accounting for more than 70% of GDP in 2005[11].

Table 1 GDP per inhabitant index in 2005: EU25 and Bulgaria and Romania

Luxembourg	248	Cyprus	83
Ireland	137	Greece	82
Denmark	124	Slovenia	80
Netherlands	123	Czech Republic	73
Austria	123	Portugal	71
Belgium	118	Malta	69
United Kingdom	115	Hungary	61
Sweden	115	Estonia	57
Finland	112	Slovakia	55
Germany	110	Lithuania	52
France	109	Poland	50
Italy	103	**Latvia**	**47**
EU25	**100**	Romania	35
Spain	99	Bulgaria	32

Source: Eurostat. News release June 2006

Moreover, growth performance has been remarkable**.** Following a rather severe economic downturn in the early 1990s, growth resumed after 1995 and since then real GDP has grown by an average of 6.4% per year or cumulatively over 1995-2005 by more than 85%. This is the best performance in the EU-25, much better than the EU-15 and, with the exception of Baltic neighbours Estonia and Lithuania, much better than the other new EU member states, including the Central and Eastern European new member states. Nevertheless, as Table 1 shows, Latvia, with a GDP in purchasing power parity terms of just under half the EU-25 average remained in 2005 the poorest country in the European Union. So catch-up is a slow process.

Growth has been driven by a number of factors: in a growth accounting study of the Baltic states Bems and Vanags (2005) show that the proximate causes of Latvian growth have been capital accumulation and total factor productivity growth in about equal proportion Thus in recent years gross fixed capital formation has been running at over 30% of GDP as compared with an EU-25 average of about 20%. Growth of total factor productivity has been highest in the traded good sector where Latvian enterprises have been forced to increase productivity through international competition.

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[11]   World Development Indicators database, April 2006.

Table 2 below shows the main macroeconomic indicators for Latvia and inspection of this table shows that not all is well with Latvian economic performance. Firstly, inflation has risen sharply to the range 6-7% over the last two years and in the July 2007 reached 9.5% after showing at over 8% in earlier months. This means that Latvia fails the inflation requirement of the Maastricht criteria and that adoption of the euro has been postponed from the planned 2008 and is now unlikely before 2010 and may not occur until 2015. Secondly, the current account deficit has widened to more than 20% of GDP in the latter part of 2006. The authorities argue that import of capital equipment represents a significant share of total imports, which in the future will generate export earnings for Latvia and that in any case the deficit is covered by foreign direct investment and long-term loans. So, far persistent current account deficits have been managed without crisis but nevertheless such a large deficit is a matter of potential concern.

Table 2 Key Indicators of Economic Development of Latvia

	2002	2003	2004	2005	2006
	(Growth versus the previous year, %)				
Gross domestic product	6.5	7.2	8.5	10.3	11.0
Private consumption	7.4	8.2	9.3	9.0	na
Public consumption	2.2	1.9	2.1	2.3	na
Gross fixed capital formation	13.0	12.3	23.8	22.0	na
Exports	5.4	5.2	9.4	20.9	na
Imports	4.7	13.1	16.6	12.2	na
Consumer prices	1.9	2.9	6.2	6.7	6.8
	(in % of GDP, unless indicated otherwise)				
Central government budget fiscal balance	-2.3	-1.6	-1.1	-1.0	-0.9
Central government debt	13.1	13.2	13.2	10.5	na
Current account balance	-6.6	-8.1	-12.9	-11.5	-20
Foreign direct investments (flows)	2.7	2.6	5.1	5.0	na
Unemployment rate (15-74 years)	12.0	10.6	10.4	9.3	6.5

Source: Economics Ministry; Finance Ministry; Eurostat: (note: na means not available)

Table 2 also shows that unemployment has fallen quite dramatically in recent years and at 6.2% in December 2006 was below the EU-25 average of 7.6%. Of course in and of itself this is welcome. However, it is partly a consequence of accession induced migration and taken together with rising prices and wages, rapid credit expansion and a raging property price boom is a signal that the Latvian economy is overheated and that current growth rates may be unsustainable. Thus, some downward adjustment in the pace of growth seems inevitable.

Table 3 below lists the core sectors of the Latvian economy. Latvia is now a predominantly service-based economy: trade with a share of just over 22% of GDP was the largest sector in 2005, transport and communications had a share of nearly 16% as did manufacturing. Fast growing domestic demand has encouraged the development of services, especially those concerning wholesale and retail trade (this sector grew by 10.1% in 2004 and by 17.4% in 2005).

Latvia's position on the Baltic Sea with three major ice-free ports and road, rail, sea and air transport modes bridging Europe and Russia, Central Europe with Northern Europe, provides Latvia with a natural competitive advantage as a trade route As a consequence transit services are of considerable importance for the economy, making up approximately 15% of the revenues from Latvian exports of goods and services or about 5% of GDP. This sector, which also includes electronic communications, grew by 12.9% in 2004 and by 16.3% in 2005.

Table 3 Composition of the economy as % of GDP in 2005

Trade	22.3
Manufacturing	15.9
Transport and communications	15.7
Public services	14.3
Construction	6.4
Agriculture	4.2
Other services	22.1

Source: Economics Ministry 2006

Manufacturing representing 16% of GDP in 2005 is the second most significant sector after trade. From 2001 to 2004 manufacturing output increased by 9% on average each year, exceeding the average growth rates of the national economy, but slowed down in 2005. Key manufacturing sub-sectors include food processing, textiles, wood processing, machine building, engineering and metalwork.

Construction is another booming sector with 13% growth in 2004 and nearly 16% in 2005. The sector has been boosted both by construction of residential and commercial buildings and hotels, but also by road building and construction of industrial objects. Continuing demand for construction is expected in the future as there are already many construction projects in the pipeline and new demand will come from implementation of new infrastructure projects financed from the next period of EU funds.

Agriculture has been in decline for several years partly because it has lacked the large capital investment required to modernise farming methods and machinery. There are quite large numbers of semi-subsistence farmers. Growth in agriculture was 4.3% in 2005. Low productivity and external competition are the main obstacles to development of this sector. Latvia's membership of the EU has improved opportunities for Latvian commercial farmers in the EU market, while support from EU funds should facilitate modernisation of agriculture and diversification of rural activities.

As already noted, Latvia currently fails the inflation requirement of the Maastricht criteria. However, since 2000 the fiscal deficit in Latvia has been below the maximum 3% of GDP Maastricht ceiling and the debt to GDP ratio at just over 10% is well below the permitted 60%. The fiscal situation has actually improved each year because of rising tax revenues and conservative budgeting, particularly within the social security and municipal budgets. Tax revenues have been strong because of the booming economy. Thus the planned 2005 state budget assumed a fiscal deficit of 1.68% but the actual deficit was 1.0% of GDP and in 2006 the planned deficit was 1.5% but the outturn was 0.9%. The 2007 state budget was approved with a projected deficit of 1.4% of GDP, which is among the lowest in the EU.

Strong economic growth has had an impact on both employment and on real incomes. Employment has been buoyant: total employment in the first quarter of 2006 was 1,056,500 which is the highest employment figure for at least 10 years and represents the twelfth successive quarter with employment in excess of one million and an employment rate of just over 64%. Over 2000 to 2004 real wages increased by 24% and continued to rise in 2005 by 10% against the previous year and this has continued in 2006 with real wages in the third quarter up by more than 15%.

A negative factor in Latvia's economic development is the emergence of pronounced regional disparities. Thus Riga has one third of Latvia's population but 60% of its GDP. This means that in per capita terms income in Riga is about 180% of the national average and all the other regions have less than the national average with Latgale, the poorest region, standing at about 50% of the national average. Other indicators show a similar dispersion – Riga has the highest workforce participation rate at just over 67% whereas in Latgale only about 55% of working age people are economically active, and investment per capita (a forward looking indicator) is three times as high as in Latgale and about two thirds higher than in Kurzeme which is the second highest investing region.

Demography indicators and population developments

Over the last 15 years Latvia has experienced a persistent decline in population from 2.66 million in 1991 to 2.29 million in 2005. A large part of the decline in the early 1990s was migration to Russia but in every year since independence there has also been a natural decline with the death rate exceeding the birth rate. Currently, official migration flows are rather low. Thus in 2005 1 886 persons arrived in Latvia for permanent stay while 2 450 persons left. However, it is believed that in practice somewhere between 50 000 and 100 000 have left Latvia since EU accession to work in the UK and Ireland in particular. However, these people are hard to identify and also it is arguable whether they represent permanent migrants. Nevertheless, their absence has had a considerable impact on the labour market in Latvia, contributing to higher wages and growing shortages in certain sectors.

Table 3 presents Latvia's life expectancy indicators and trends over the past 10 years, with a comparison against the recent EU-25 average.

Table 3 Life expectancy indicators in Latvia

Life Expectancy	1995	2000	2004	EU-25
Life expectancy (years)	66.7	70.5	71.4	78.49
Life expectancy for males (years)	60.8	64.9	67.1	75.32
Life expectancy for females (years)	73.1	76.0	76.0	81.6
Healthy life expectancy (HALE) for males (years)			58.0	
Healthy life expectancy (HALE) for females (years)			67.5	
Under 5 mortality rate (deaths per 1000 of population under five years of age)			11	5.7

Source: WHO, CSB 2006

Life expectancy indicators in Latvia are improving which is partly a consequence of rising standards of living. Female life expectancy is significantly higher than male. In 2004 it was 67.1 for males and 76.0 for females, up from 60.8 for males and 73.1 for females in 1995. Life expectancy in urban areas is higher – in 2004 for males it was 67.0 as compared with 64.9 in rural areas, and 77.8 for female in urban areas compared to 75.5 in rural areas.

Population decline is expected to continue. The forecast for 2008 as compared with 2002 is that the population will shrink by 27 000 (-1.2%). A low birth rate has resulted in a significant increase in the mean age of the population. By 2020, as illustrated in Figure 1, the small cohorts born in the 1990s will reach working age and be fewer in number than people in their 60s who may then need to consider postponing their retirement in order to maintain acceptable levels of income.

Figure 1   *Age pyramid for Latvia*

Age pyramid for Latvia
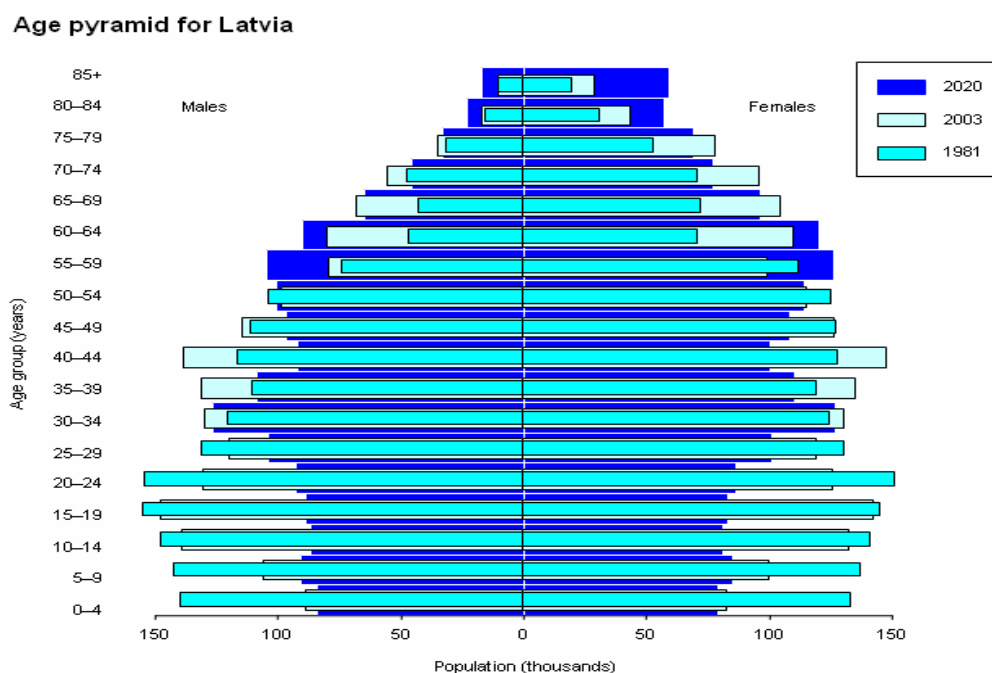
Sources: WHO Regional Office for Europe (2005) and United Nations (2005).

There are also regional differences in the age structure of the population. For example in 2005 64% of Latvia's population was of working age, however in rural areas as compared with in cities there is a higher proportion of retired people. As Table 5 shows, the urban population of Latvia is about 68% and the capital Riga accounts for 32% of Latvia's total population (but 60% of its GDP). The standards of living and economic conditions vary significantly between urban and rural areas.

Table 4 Population of Latvia as of January 2006

Region	No.	%	Density of population per km^2
Latvia total	2294590	100%	36
Urban areas	1559409	68%	
Rural areas	735181	32%	
Rīga	727578	32%	2382
Daugavpils	109482	5%	1523
Jelgava	66087	3%	1097
Jūrmala	55602	2%	556
Liepāja	85915	4%	1428
Rēzekne	36646	2%	2102
Ventspils	43806	2%	794

Source: Central Statistics Bureau of Latvia 2006

Even with a decreasing population, the share of the population in urban areas since 1991 has remained around 68%. The populations of the seven biggest cities and towns, including Riga, have decreased as people have moved out from Soviet era apartment blocks and into new apartments and houses outside town centres. The population of Riga has decreased from 825 000 in 1995 to 731 000 in 2005 however Riga district (the area surrounding Riga) has seen its population increase from 144 000 in 1995 to 153 000 in 2005.

Due to the poor prospects for employment, living and economic conditions in Latgale, the Eastern region of Latvia, there has been an outflow of people from such rural and remote areas into urban areas.

Official net migration levels have decreased since the early 1990s as economic and political conditions stabilised when Russian troops and many other Russian-speaking groups emigrated while some Latvian families returned to Latvia from Siberia where they had been sent against their will during the Soviet era.

General government indicators

Table 6 presents the general government consolidated budget in terms of income and expenditure during the past 10 years.

Table 5 General government consolidated budget by income and expenditure (EUR millions)

Year	Income	Expenditure	Fiscal Balance	As % of GDP
1996	1525.8	1582.5	-56.8	-1.3%
1997	1860.0	1802.5	57.5	1.1%
1998	2191.2	2237.2	-46.0	-0.8%
1999	2249.4	2483.1	-233.6	-3.9%
2000	2309.3	2480.2	-170.9	-2.6%
2001	2414.5	2558.9	-144.4	-2.0%
2002	2666.5	2852.2	-185.7	-2.3%
2003	2998.6	3144.3	-145.7	-1.6%
2004	3600.0	3712.4	-112.4	-1.1%
2005	4362.8	4554.2	-191.4	-1.7%

Source: Ministry of Finance 2006

Trends include a significant increase in the nominal size of the annual budget and a decrease in the annual fiscal deficit representing compliance since 2000 with the Maastricht fiscal deficit criterion. Strong economic growth has meant that government revenues have been very buoyant in recent years with the consequence that the actual budget deficit has typically been smaller than planned.

According to Eurostat in 2005 Latvian general government budget revenues accounted for 36% of GDP, of which taxes were 28.6%. General government expenditures accounted for 37.3% of GDP, which is one of the lowest expenditure shares in the EU.

Table 6 Structure of general government revenues

	1995	2000	2004	As % of GDP in 2004	EU 25 in 2005
REVENUE - TOTAL	100%	100%	100%	34%	45.2%
Tax revenue	88%	85%	80%	27%	
..value added tax	25%	21%	19%	7%	
..corporate income tax	5%	5%	5%	2%	
..personal income tax	15%	16%	17%	6%	
..social security contributions	33%	29%	25%	9%	
Non-tax revenue	4%	14%	19%	6%	2.4%

Source: Central Statistics Bureau, Eurostat 2006

Table 7 General government budget expenditure by function (as % of total budget)

Main budget functions	2000	2001	2002	2003	2004
General public services	7.2	7.7	7.7	8.4	8.4
Defence	2.3	2.6	3.4	3.6	3.5
Public order and safety	6.4	6.5	6.5	7.0	6.3
Education	169	18.3	18.4	17.5	16.5
Healthcare	8.9	9.1	9.3	9.4	9.4
Social security and welfare	35.3	34.3	32.3	30.5	28.1
Recreation, sport, cultural and religious affairs	3.4	3.5	3.9	4.0	3.7
Housing and community amenities	5.3	5.9	5.4	5.1	5.2
Agriculture, forestry and fishing	3.9	3.7	4.0	4.9	6.2
Transport, communication	4.9	4.6	4.4	4.9	5.3
Other	5.5	3.8	4.7	4.7	7.4

Source: Central Statistical Bureau of Latvia 2006

These days a strong budget priority is national co-financing for EU funded investments and the new government has underlined the seriousness of their intentions in this respect by creating a new cabinet post with special responsibility for the administration of EU funds.

It has now been recognised that the traditional Latvian system of annual budget planning restricts continuity of the development processes, therefore in January 2007 the Cabinet of Ministers made a decision to shift to a 2-3 year budget planning approach from 2008.

Basic indicators of healthcare development.

Healthcare expenditure as a share of GDP

Public expenditure on healthcare in Latvia is low – as a percentage of GDP it has been around 3-3.7% of GDP for the last 10 years or so, representing about 10% of the general government budget. See Table 8. The 2004 figure put Latvia in bottom place in the EU 25, where on average public expenditures on health as a percentage of GDP amounted to just over 6.7% and in the new member states to just over 5%.

Table 8 Healthcare budget of Latvia as % of GDP and of the general budget

	1999	2000	2001	2002	2003	2004	2005	2006
Healthcare expenses (EUR mn)	208	205	223	251	287	337	410	494
Healthcare budget as % of GDP	3.5%	3.1%	3.0%	3.1%	3.2%	3.2%	3.4%	3.7%
Healthcare as % of state budget	9.9%	9.9%	10.2%	10.4%	10.8%	10.6%	10.1%	10.3%

Source: Central Statistics Bureau of Latvia 2006

Although 2006 marks an improvement with public expenditure on health up by around EUR 80 million as compared with 2005 and as a share of GDP up to an expected 3.7% this still leaves Latvia behind the rest of the EU. Moreover, since the share of the budget devoted to healthcare remains at just over 10% it means that the priority given to healthcare relative to other priorities remains unchanged.

On the other hand according to WHO estimates Latvia has above average private expenditures on health – in 2004 estimated at 3.1% of GDP as compared with 2.2% of GDP for the EU-15 and just over 1.7% of GDP for the new member states. Consequently in terms of total expenditure on healthcare (private plus public), according to the WHO, Latvia spends more than 6.5% of GDP on healthcare, which is just below average for the new member states. See Figure 2.

Figure 2: Healthcare expenditure as % of GDP – EU comparison (2004)
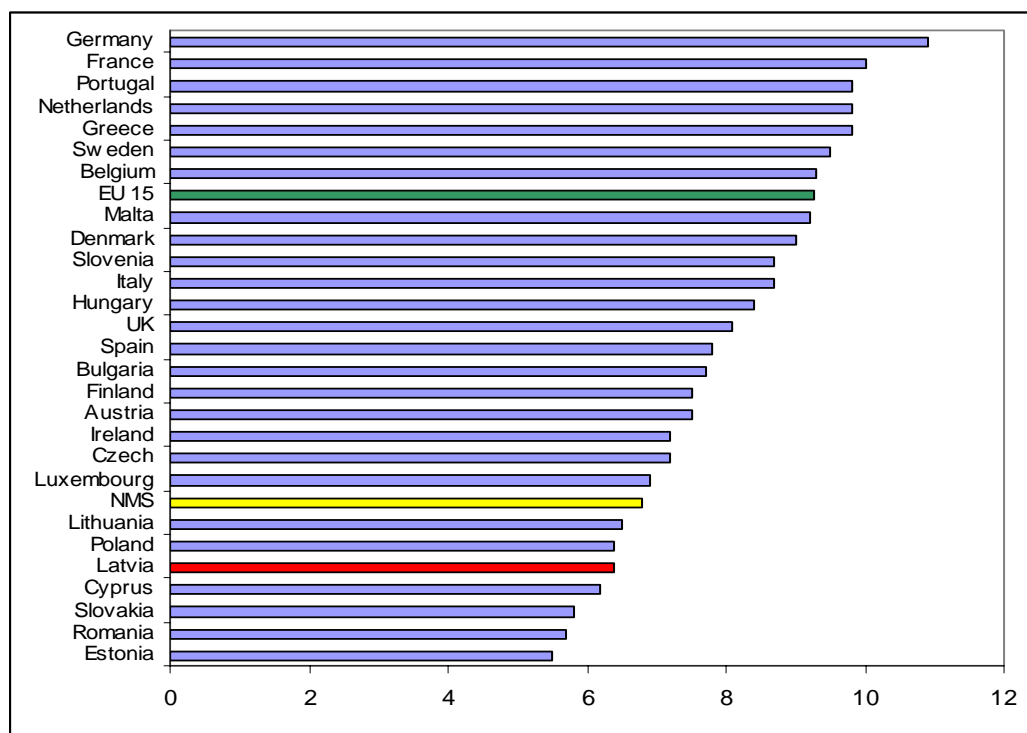
Source: WHO 2006

Main causes of death

Cardiovascular diseases are the main cause of death in Latvia. In 2004 heart and circulatory system diseases caused the death of 774 per 100 000 of population (as shown in Table 9) or nearly 56% of all deaths. More than 60% of female deaths were from this cause.

The second biggest cause of death is cancer or malignant neoplasms (18% of all deaths in 2004). As compared with Western Europe[12] the excess death rate in 2003 from cardiovascular diseases was nearly 44% while for cancer it was just under 6%.

External causes of death[13] are high in Latvia where the excess rate as compared with the Western Europe comparator group in 2003 was 138%. External causes are an especially high cause of death for men for whom in 2004 this was responsible for 218 deaths per 100 000 of population as compared with 68 female deaths (see Table 9).

By 2005 infant mortality had reached the lowest level in last decade accounting for 168 cases in total or 7.8 per 100 000 live births.

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[12] Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

[13] Includes road accidents, falls, suicides and homicides

Table 9: Most common causes of deaths in Latvia per 100 000 population

	2001	2002	2003	2004	2005
1. Diseases of the circulatory system	782.9	778.2	782,9	773.8	785.8
2. Tumours	247.6	246.2	250.9	251.3	256.5
3. Injuries, poisoning and other external causes	157.2	156.9	145.1	137.5	139.7
4. Diseases of digestive system	45.1	43.2	45.7	44.9	47.1
5. Diseases of respiratory system	33.3	36.4	35.3	34.6	40.2
6. Diseases of nervous system	14.7	16.7	16.0	14.1	16.3
7. Infectious and parasitic diseases	16.7	13.2	14.1	12.6	12.8

Source: Ministry of Health 2007

Contributions of public and private healthcare providers

Primary care services are provided in a wide variety of institutional settings in Latvia, some a legacy from the Soviet system and others the result of efforts to restructure primary care. Institutions that provide primary care are out-patient centres, policlinics, GP practices, medical posts (in rural areas) and private practices.

The health centres in the larger cities originated as polyclinics. They are owned by the municipalities and run by private operators. General practitioners (GPs) rent facilities and work independently. Even though the number of GPs has been increasing since 1999, their number is still not sufficient in some parts of the country. There are also so-called "doctorates" – grouped or single person practices. In these the medical practitioners are self-employed and contracted by the State Compulsory Health Insurance Agency (VOAVA). In 2002 GPs constituted 52% of all primary care physicians; the others were predominantly paediatricians and recently qualified doctors. Patients are free to choose their primary care physicians but they need a referral in order to receive specialist or secondary care. Direct access to secondary care, i.e. without a referral from a GP, is granted a number of specialists.

Two types of public hospitals provide secondary care: state hospitals reporting directly to the Ministry of Health and municipal hospitals reporting to local government. The latter provide half of Latvia's hospital beds. Specialized hospitals are concentrated in Riga and in the largest cities. Public hospitals are contracted by the regional branches of the State Compulsory Health Insurance Agency. Secondary and tertiary care in Latvia faces a key problem: hospitals (and even specialized facilities) take care of many patients whose needs are social rather than medical, because social care services are still not fully developed.

The private sector is rapidly increasing the range and number of healthcare services it provides and the number of private doctors has increased significantly. However, only 6% of all the hospitals in Latvia are private. Dentists are self-employed and work on a private basis however the State Compulsory Health Insurance Agency contracts them for the provision of dental services for children up to the age of 18. Pharmacies are entirely private but require a state-issued licence to operate.

Latvia for several years has been undergoing healthcare reform and as a result of which, the number of hospitals has been decreasing, as indicated in Table 10. These structural changes are the result of a change in the strategic focus away from patients being treated in hospitals and towards providing ambulatory and out-patient services.

Table 10: Healthcare resources in Latvia

Indicator	1997	2000	2002	2003	2004	2005	2006
No. of hospitals	156	142	129	131	119	109	na
No. of hospital beds	23840	20655	18172	18352	18034	17677	17 407
Healthcare institutions providing outpatient services	617	1416	2007	2145	2234	na	na
No. of physicians of all specialities	8395	8134	7921	7883	8087	8207	8341
Medical personnel with at least secondary medical education	16663	14934	14610	14741	14725	14927	14751

Source: Central Statistical Bureau of Latvia 2006

Similarly the number of hospital beds has been decreasing. Some smaller or inefficient medium-sized hospitals have been closed or are being closed. The number of medical staff including nurses is stabilising as wages have increased slowly and in reflection of the increasing living standards.

Table 11: Number of GPs in Latvia 1996-2006

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Nr of GPs	302	391	488	801	966	970	1027	1050	1231	1274	1283
GPs per 100000 of population	1.2	1.6	2.0	3.4	4.1	4.1	4.4	4.5	5.3	5.6	5.6

Source: Central Statistical Bureau of Latvia 2006

Table 12 shows how the number of GPs has increased due to the shift in healthcare towards primary care and development of the private sector. With various financial, technical and retraining supports the state has encouraged existing medical staff to re-qualify as GPs or family doctors. Since 2003 when the new Compulsory Insurance Agency was launched, the healthcare reimbursement system has stimulated the growth and development of private medical practices

General ICT usage indicators

Several areas of Internet usage have been stimulated by developments in the telecommunications sector in Latvia. The main fixed line services are provided by Lattelecom, which is owned 51% by the state and which operates a landline network. The fixed line market was liberalised in January 2003 but Lattelecom retains by far the biggest market share of fixed line telephony. With a country-wide fibre-optic network and modern switching infrastructure, among the various telecoms service providers Lattelecom has greatest capacity to provide Internet access and services. In total the number of fixed line subscriptions has decreased during the last 4 years in favour of mobile phones, but in 2005 fixed lines increased slightly, due primarily to increasing demand for broadband and triple play bundling of voice, data and media. According to the Public Utilities Commission, in 2005, the number of fixed line users increased by 2.2% to 645 000. With increasing competition among handset manufacturers and domestic network operators, prices have decreased in recent years and this has generated strong growth in mobile phone users. Mobile subscribers in 2005 increased by 27% and reached 1.97 million (compared with a total population of 2.3 million).

In 2005 Latvia had 28 fixed lines per 100 of population, significantly lower than the European average of 41. However there were 81 mobile subscribers per 100 of population, which was in line with the

European average of 84. While 3G and mobile broadband are currently not available in Latvia, demand growth is primarily in voice and messaging. Further information is presented in Table 12.

Table 12: Fixed line and mobile phone subscribers

	2000	2005
Fixed telephone lines in Latvia ('000)	734.7	640.0
Fixed telephone lines per 100 of population	30.3	27.8
Fixed lines Europe average per 100 of population	39.9	41.0
Mobile subscribers in Latvia ('000)	401.3	1871.6
Mobile subscribers per 100 of population		81.1
Mobile subscribers as % of all subscribers		74.5
Europe average per 100 of population		84.4
Europe average as % of all subscribers		67.3

Source: http://www.itu.int/ITU-D/ict/statistics/at_glance/cellular05.pdf, 2007

The Eurostat indicator of households using a mobile phone over narrowband (WAP, GPRS etc) includes Latvia with 18%, Estonia 6% and Lithuania 2%, compared to 4% in the EU-25 and 3% in the EU-15. Other countries with well above average narrowband penetration rates include Slovenia with 22% and Poland 13%.

In recent years Latvia has shown reasonably robust rates of ICT expenditure, reflecting the ambition of the government and private enterprise to modernise and improve efficiency and competitiveness. A significant portion of the government's ICT expenditure was co-financed by EU grant monies such as Phare and structural funds. Latvia's ICT expenditure in 2004 was 1.9% of GDP, while the EU-25 average was 3.0%, Estonia 2.3% and Lithuania 1.4%. Within a growing ICT service industry in Latvia, turnover in 2005 was 6% of GDP (the EU-25 average was 2.6%). This included a number of large investments by government (e.g. the Interior Ministry, the Justice Ministry and the Ministry of Transport) and private enterprises (e.g. financial services and telecoms companies) into new ICT infrastructure networks and systems development.

Table 13 presents a selection of ICT usage indicators for Latvia in 2005. With fewer computers in households, Latvia, with 31%, has lower Internet penetration than the EU-25 average of 48%. However this is up from 15% in 2004, representing a doubling in Internet penetration during 2005. Enterprises, which are able to purchase ICT equipment with credit financing and are able to deduct ICT expenses against their taxable income, have invested more and sooner in ICT than have households. Affordability remains an obstacle for households.

The low rate of usage of eGovernment services is almost certainly primarily a consequence of the lack of availability of such services. At present only the first two levels of eGovernment services are available for individuals, namely information about services and, in some cases, retrieval of downloadable forms. The next two levels, filling in forms and full transactions, would represent a significant step forward and would therefore be likely to make online services much more attractive to users. This issue is discussed in more detail in Chapter 3 of this report.

In the area of business and e-commerce in Latvia 3% of the population in 2004 purchased goods or services via the Internet.

Table 13: ICT usage indicators in Latvia for 2005

Indicator	% Usage
Internet access	
Households with internet access (Latvia)	31%
Households with internet access (EU-25 average)	48%
Enterprises with internet access	75%
General government internet access	89%
Individuals using the Internet at least once a week	36%
Households with a broadband connection	14%
Enterprises with a broadband connection	48%
e-commerce	
Individuals having ordered online in the previous 3 months (2004)	2%
Enterprises having received orders online within the previous year (2004)	1%
eGovernment services	
Individuals having used the Internet in 2004 for interacting with public authorities for:	
obtaining information	12.1%
downloading forms	4.2%
returning filled forms	3.6%
Enterprises having used the Internet in 2004 for interacting with public authorities for:	
obtaining information	38%
downloading forms	33%
returning filled forms	15%

Source: http://ec.europa.eu/idabc/en/document/3972/40, Eurostat 2006

Table 14: Selected ICT usage indicators for 2005 across the Baltics

Indicator	Latvia	Lithuania	Estonia	EU (25)	EU (15)
Percentage of households who have Internet access at home	31	16	39	48	53
Number of broadband lines subscribed in percentage of the population	3.7	5	11.1	10.6	12
Percentage of individuals who have used the Internet, in the last 3 months, for interaction with public authorities	13	12	31	23	26
Percentage of enterprises which use the Internet for interaction with public authorities	35	72	70	57	56
% of online availability of 20 basic public services	10	40	79	50	56

Source: Eurostat 2006

As part of the back up to support the government aim to increase the supply of eServices in the public sector, 94% of public libraries have Internet access. However more training initiatives are required to encourage non-users to learn how to use the Internet and the benefits it can bring. Currently 28% of non-users in Latvia are computer illiterate. In socially excluded groups the level of computer illiteracy is up to 68%.

Figure 3: Broadband penetration – subscribers per 100 of population (January 2005)

Source: European Commission
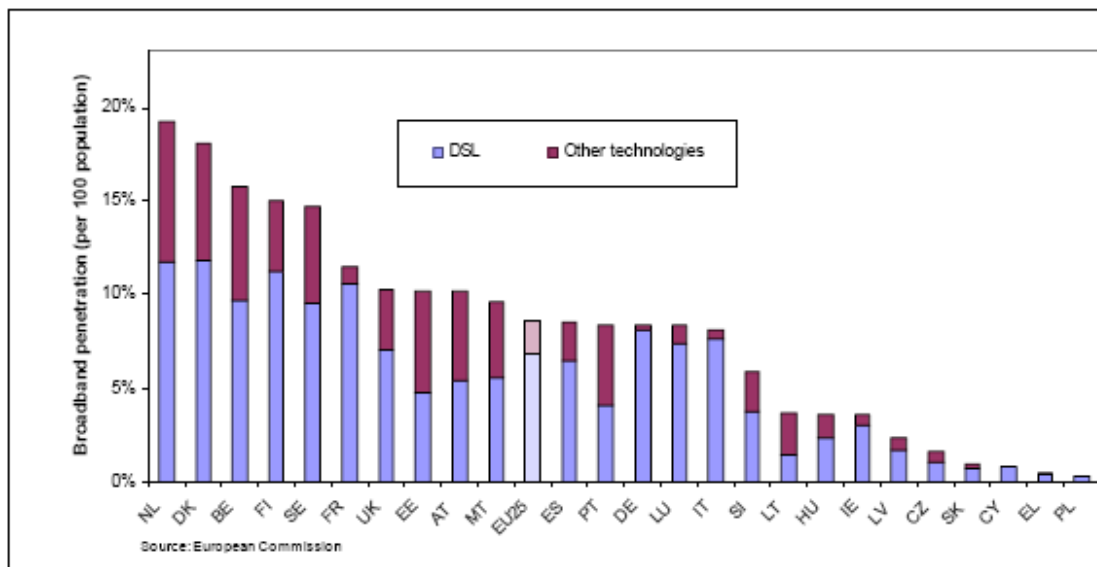
Because of low average income per head in Latvia has lagged behind with regard to computer and Internet penetration in private households, especially when in terms of broadband. Broadband availability continues to be low in Latvia. Figure 3 illustrates Latvia's position in broadband penetration in early 2005 relative to the EU-25. Due to the high costs of ICT investment and usage in relation to average household incomes, a high proportion of users access the Internet from their workplace or from a public Internet access point (PIAP) rather than at home
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I. CURRENT GOVERNMENT AND HEALTH INSTITUTIONS AND SYSTEMS

I.1. Institutional structure of the government

Latvia has two structural levels of government: central government, and local government. Local government has two tiers and a third level, a regional level of government, is planned for the future. Each structural level is explained in more detail below.

I.1.1. Central government

Latvia is a Parliamentary Republic, established in 1991 following independence from the Soviet Union. Legislative power is held by a unicameral Parliament (Saeima), which is made up of 100 members elected every four years (proportional system; universal suffrage; 5% parliamentary threshold). The current Latvian state is regarded as a continuation of the pre-war Latvian republic. Thus the elections of 2006 were for the 9th Saeima.

The Head of State is the President, elected by parliament for a four-year term of office. The President formally enacts new laws, has some powers to initiate legislation, is formally responsible for inviting the candidate Prime Minister to form a government and represents Latvia as Head of State. The current President is Valdis Zatlers, formerly a surgeon..

The current (early 2007) Head of Government is Aigars Kalvītis (since 2 December 2004). The Cabinet of Ministers (the "Cabinet"), composed of the Prime Minister and the Ministers chosen by the Prime Minister, is approved by and accountable to Parliament. The Cabinet is the country's highest

executive body and oversees the work of a number of state governing institutions whose responsibility covers the whole country.

Currently there are 15 ministries, listed in Table 15, and two special assignment Ministers, one of which is for eGovernment and the other for social integration.

Table 15: Ministries of the Republic of Latvia 2007

www.zm.gov.lv	Ministry of Agriculture
www.bm.gov.lv	Ministry of Children and Family Affairs
ww.km.gov.lv	Ministry of Culture
www.mod.gov.lv	Ministry of Defence
www.em.gov.lv	Ministry of Economics
www.izm.gov.lv	Ministry of Education and Science
www.vidm.gov.lv	Ministry of Environment
www.fm.gov.lv	Ministry of Finance
www.am.gov.lv	Ministry of Foreign Affairs
www.vm.gov.lv	Ministry of Health
www.iem.gov.lv	Ministry of Interior
www.tm.gov.lv	Ministry of Justice
www.raplm.gov.lv	Ministry of Regional Development and Local-governments
www.sam.gov.lv	Ministry of Transport
www.lm.gov.lv	Ministry of Welfare

Source: http://www.mk.gov.lv/en/mk/sastavs/2007

I.1.2.   Local government

The local government structure consists of two tiers. The first tier comprises more than 550 directly elected county and town municipal councils. There are 444 county councils, 29 amalgamated municipalities ("novadi"), 53 town councils, 7 large city councils. The local government (municipality) is responsible for schools, hospitals, libraries and other public facilities. More than 70% of local rural municipalities have a population of less than 2 000. The second tier of local government consists of 26 district councils that are indirectly elected by the mayors of the constituent municipalities.[14] Hence, they are politically weak. They also have relatively limited functions and are financially weak, with a share of personal income tax revenue as their main source of revenue.

Figure 5 shows the territorial division of Latvia including the five 'planning regions', which do not actually have a tier of government.

Figure 4: Territorial divisions in Latvia

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[14]   The 7 so called 'republican cities' perform a dual local and district function

Since 2003 local government policy has been coordinated by the Ministry of Regional Development and Local Government. The Ministry assists regions with setting structural developments policies, regional development, local government spatial planning and responsibility for the implementation of state level reforms and initiatives.

As for financial sources, municipalities rely mostly on the personal income tax, followed by grants from the central government. However, the financial resources available to local government to provide social and economic infrastructure are insufficient, and they do not have direct access to the capital markets for commercial borrowing.

The large number of local municipalities implies that at present the local governance system is complicated and needs to be simplified. In 1998 the parliament passed a law, which outlined local government reform. This reform was envisaged as voluntary in the first instance. Two options have been offered – amalgamation of local government units, or more effective collaboration between local governments. However, a number of factors such as evolving government proposals, concerns about local autonomy, doubts about the financial implications and concerns about erosion of personal power bases, have resulted in a modest take up. The proposed law triggered much debate of how to optimize administrative tasks and to merge government units, while avoiding to leave some remote parts of Latvia without any access to municipal services. However it was clear that reform was needed and that administration has to become more cost-efficient.

In 2005 the Government passed an amendment to the previous law. The amendment described the new structure and listed clearly which municipalities would need to merge. EU norms advocate that a high-level local government structural unit should be able to administer efficiently between 300 000 and 800 000 inhabitants.

Many current local government units do not have the capacity either to promote entrepreneurship and economic development or to tackle unemployment, poverty and social exclusion. This requires the creation of stronger regional government units.

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Alongside a reformed structure of municipalities, local partnerships have a crucial role to play in implementing national economic and social strategies 'on the ground'. The message of the new local governance approach in and beyond Europe is that effective solutions to the complex, challenging issues which face policy makers today demand coordinated action from public authorities, the private sector, voluntary organisations and citizens.

Like in other countries, the modernization of local government in Latvia and the introduction of modes of local governance which enable state agencies to work more effectively with partners from the private, voluntary and community sectors are seen to be central to national policies. In Latvia, the need is twofold: to reform and strengthen the core institutions of local government, while at the same time building around these institutions a framework of partnership involving both business interests and citizens and voluntary and third sector organizations.

Consolidation of planning regions and municipal structures is an important pre-condition to access financing for modernizing local governance and developing eService infrastructure. For example, undertaking the design, development and implementation of electronic document circulation systems with appropriate service process standards requires larger rather than smaller municipal units. Municipalities will have to combine their resources and cooperate to be able to operate effective eServices. In such an environment where the local governance system is not yet clearly decided and smaller municipalities may be in the process of merger, providing eServices is not a top priority. The current state of confusion and uncertainty is particularly acute in rural and remote areas.

I.1.3 Regional government

There has been recognition that the current local government structure is not suitable to ensure balanced and sustainable development and especially to make best use of EU and other international funds (Vanags 2005). There is a plan to introduce elected authorities for the five planning regions: Rīga, Kurzeme, Vidzeme, Latgale and Zemgale (illustrated in Figure 5). The five regions are historically defined regions that correspond in size to EU norms for optimal region size. However under the Soviet regime these regions were not used as economic units and that legacy of inefficiency has persisted. A draft Regional Self-Government Law has been prepared, which identifies the autonomous functions of regional self-governments, which include authority to develop and implement regional development and spatial plans. However, it is not yet known when these regional governments will really start to function.

I.2.   Society's involvement in democratic decision making

Governance and democratic decision-making are relatively new concepts in Latvia. Centrally planned communism penalized citizens who took initiative whereas a democratic society actually requires its citizens to take the initiative. The majority of Latvia's current population lived under Soviet communism and therefore the challenge exists now to motivate them to participate actively in the governance of the democratic society that is Latvia today.

In 1999 the European Values Study of Latvia's population stated that they support democracy but it has some shortcomings. Some older people surveyed were of the opinion that „a few strong leaders will do more for the country than all the laws and talks", implying that they would prefer simply to be told what to do rather than having to think, decide and act. A 2004 survey showed that the number of people who believed that they can influence local government decisions in a legitimate way increased by 20% compared with in 1996, and the number of people who believed they can influence the decisions of the national government increased by 10%. (Rozenvalds, 2005)

While some see 'government' and 'governance' as polarized alternatives, others prefer to envisage a continuum in which traditional hierarchical government and networked governance are at the two poles. For many commentators 'governance' does not imply the end of more traditional forms of government but a new mix of 'government plus governance' in which traditional state institutions work under new conditions and with greater accountability.

The emergence of the term 'governance' is related to a number of factors, which are seen to be affecting western societies in general. These include a rise in societal and political fragmentation, a blurring of the boundaries between the public and private spheres, the emergence of a 'network society' and with it the increased prominence of policy networks. The emergence of good governance as a social aim implies major changes to the traditional pattern in which government was the unchallengeable centre of policy creation and hierarchical control was its preferred mode of operation. (Geddes, 2006)

One governance instrument available to Latvian society is the referendum. Latvian citizens have the right to request a referendum in the case where the Constitution is amended, the President proposes to dissolve the parliament, the President suspends the promulgation of a new law, the parliament fails to adopt a draft law submitted by one tenth of the electorate or Latvia's terms of membership of the EU are to be substantially changed substantially. A referendum on such issues must be held if a petition signed by at least one tenth of the electorate is submitted.

Another governance instrument or institution is the non-governmental organization (NGO). The Latvian Cabinet of Ministers has stated that there is the "opportunity for every member of society to participate in the policy-making process. More active citizens, representatives of society who have joined together in NGOs to protect their interests and voice their opinion have better opportunities to influence the decision-making process".

Active policy discussion portals in Latvia include www.dialogi.lv and www.politika.lv. The host organization of www.politika.lv is the NGO Providus, which was established in 1992 with sponsorship from the Soros Foundation. Providus was formalized as a legal entity in 2002.

Transparency International in Latvia is represented by "Delna" (www.delna.lv) and is a part of an international network of NGOs whose aim is to increase transparency and decrease corruption. The network of NGOs working with Transparency International provides an international perspective on transparency and national data for comparison.

I.3.   Healthcare system and institutions

I.3.1.   Institutional structure of healthcare

After regaining independence in 1991 Latvia reverted to the ministerial structure used in the 1920s and 1930s. Thus from the early 1990s the Welfare Ministry was responsible for medical healthcare as well as social welfare. In 2003 healthcare was reorganised into a separate Ministry of Health, marking the beginning of healthcare reform.

The Ministry of Health heads the healthcare system in Latvia and provides coordination, centralized strategic development, control and monitoring. The Ministry via the Cabinet reports to the Parliament.

The state budget is the primary source of financing for the Ministry of Health. Ministry of Health carries out its responsibilities for healthcare services in Latvia through a variety of channels including hospitals (state, municipal and private), policlinics and general practitioners. For managing the provision of healthcare services, the Ministry structure includes a number of agencies that have monitoring, analytical and coordination functions. For example there is an agency responsible for managing state funding, namely the Compulsory Health Insurance Agency (VOAVA), another for collecting healthcare statistics (VSMTA), and another for maintaining state healthcare registers, databases and information systems (see Table 17 for a full list of healthcare agencies).

Figure 5   Organizational chart of the healthcare system in Latvia
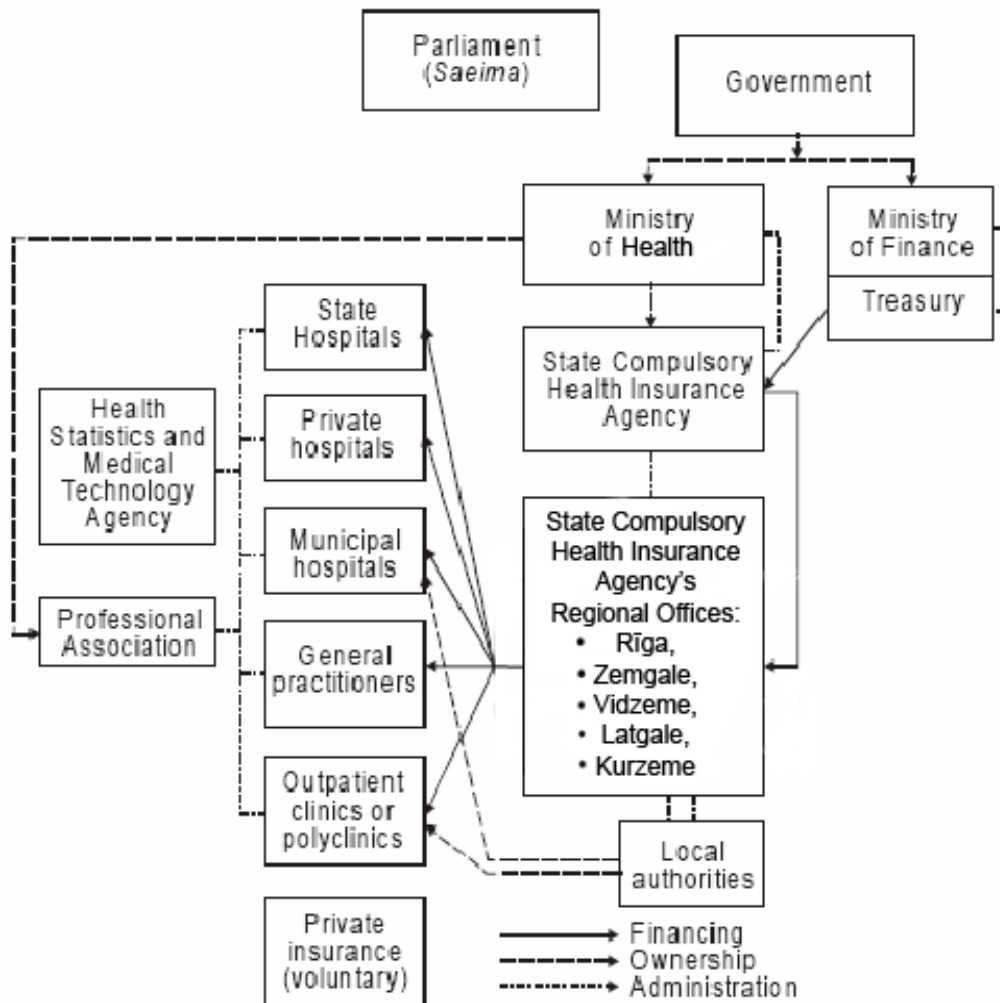
The organizational chart presented in Figure 6 however does not include the health services provided within the Ministry of Justice for state prisons, and the Ministry of the Interior or the Ministry of Defence. For example the prison system has one central hospital located in the capital city Riga and 15 sub-branches for other areas. Sub-branches function more like policlinics where doctors assess and treat convicts and provide non-hospital services. The Ministry of the Interior and Ministry of Justice has agencies that monitor their respective healthcare activities, however hospital care and specialist medical services when required are provided by the Ministry of Health.

The top level of the healthcare system in Latvia is represented by the Ministry of Health that sets the policies, strategies and action plans, coordinates their implementation and monitors their performance. The next level is the implementation level of the Ministry's strategy and policies where various agencies are responsible for monitoring overall performance, collecting and analyzing statistics, coordination of healthcare education and blood banks and pharmaceuticals management. The agencies include a variety of inspectorates, which have a control function. This level includes also the management of the compulsory health insurance funds by the VOAVA agency.

The third level of healthcare provision comprises the healthcare providers, which include in-patient services, out-patient services, general practitioners, rehabilitation centres, pharmacy services and diagnostic services. Some financing in this level comes from private insurance companies.

Healthcare delivery

Healthcare services in Latvia are provided as:
  (a) Ambulatory care, which comprises care prior to the hospitalisation stage. Ambulatory care is provided by primary care doctors (family doctors, GPs and paediatricians) and their teams;
  (b) In-patient care (stacionārā). Within in-patient care, both secondary and tertiary healthcare services are provided.

Primary care services are delivered in ambulatory healthcare institutions or at home. Primary healthcare is provided in policlinics, healthcare centres, GP practices, medical posts in rural areas and private practices. Policlinics are a legacy from the previous system and they are still a dominant primary care structure but with the modification that GPs rent facilities and work independently within the policlinics. There are also so-called "doctorates" – being group or single (usually internist) practices. Healthcare providers in doctorates are self-employed and contracted by the State Compulsory Health Insurance Agency. The future direction of healthcare services is to expand primary care with a focus on general practice and family medicine.

Patients are free to choose their primary care physicians but they usually need a referral in order to receive specialist treatment or secondary care. Direct access, without a referral from a GP, is granted to gynaecologists, psychiatrists, specialists on sexually transmitted diseases and endocrinologists. The general shift in healthcare policy is to have more patients treated at a point of primary care and to decrease the supply of secondary care. This is the opposite approach to the Soviet era system with more emphasis on secondary care and hospitalization.

Secondary care services are provided by ambulatory institutions, departments of in-patient institutions, accident and emergency centres, in-patient day centres and hospitals.

Tertiary care is provided by high level specialists in medical centres and healthcare institutions.

In Latvia there are regional multifunction hospitals, local multifunction hospitals, specialized medical centres, specialized hospitals and healthcare centres. Specialized hospitals are concentrated in the capital city and other large cities. Public hospitals are contracted by the regional branches of the State Compulsory Health Insurance Agency. Secondary and tertiary care in Latvia faces a key problem: hospitals (and even specialized facilities) take care of many patients whose needs are social rather than medical, because social care services are still not fully developed.

I.3.2.   State healthcare institutions

State healthcare services in Latvia are provided primarily by the Ministry of Health and the Ministry of Welfare. The Ministry of Health is responsible for the majority of healthcare policy development and implementation, including promoting good health and in treating the ill and injured. The Ministry of Welfare, in addition to its broader social welfare mandate, is responsible for preventing illness and injury and for improving the living conditions of the long-term ill, infirm, orphaned, homeless or disabled.

The Ministry of Health's annual report of 2004 states that the institutional system under its responsibility includes three types of healthcare institutions: (a) state agencies, institutions and centres, of which there are 25 in total; (b) limited liability companies, of which there are 16; and (c) state joint stock companies, of which there are 31. Table 16 lists the main state agencies, institutions and centres operating in the healthcare sphere.

Table 16: State agencies, inspectorates and other institutions reporting to Ministry of Health

Name in English	Abbreviation	Web Link	Name in Latvian from where the abbreviation is derived
State Agency of Compulsory Health Insurance	VOAVA	www.voava.gov.lv	Veselības obligātās apdrošināšanas valsts aģentūra
State Agency for Health Statistics and Medical Technology	VSMTA	www.vsmta.lv	Veselības statistikas un medicīnas tehnoloģiju valsts aģentūra
Inspectorate of Healthcare Quality and Efficiency	MADEKKI	www.madekki.gov.lv	Medicīniskās aprūpes un darbspējas ekspertīzes kvalitātes kontroles inspekcija
Blood Donor Centre	VADC	www.vadc.lv	Valsts Asindonoru centrs
State Agency for Pharmaceuticals and Drugs	VZA	www.vza.gov.lv	Valsts Zāļu Aģentūra
State Agency for Pricing Pharmaceuticals	ZCA	www.zca.gov.lv/	Zāļu cenu aģentūra
Accident and Emergency Centre	KMC	www.kmc.gov.lv	Katastrofu medicīnas centrs
State Medical Library	LMB	www.lmb.gov.lv	Latvijas Medicīnas bibliotēka
State Agency for Strategic Public Health)	SVA	www.sva.lv	Sabiedrības veselības aģentūra
HIV Prevention Centre	AIDS PC	www.aids.gov.lv	AIDS profilakses centrs
State Sanitary Inspectorate	VSI	www.vsi.gov.lv	Valsts sanitārā inspekcija
State Pharmacological Inspectorate and Testing Centre	VFI	www.farminsp.gov.lv	Valsts farmācijas inspekcija
Latvian Food Testing Centre	LPC	www.lpc.gov.lv	Latvijas Pārtikas centrs
State Agency for Mental Health	GVVA	www.gvva.gov.lv	Garīgās veselības valsts aģentūra
State Centre for Infectology	LIC	www.infectology.lv	Latvijas Infektoloģijas centrs
State Agency for Skin Diseases and Sexually Transmitted Diseases	STASC	www.stasc.lv	Seksuāli transmisīvo un ādas slimību valsts aģentūra
State Agency for Sports Medicine	SMVA	www.sportamedicina.lv	Sporta medicīnas valsts aģentūra
State Agency of Narcology	NVA	www.narko.gov.lv	Narkologijas valsts agentura
State Pathology Centre	PC	braunsteina@navigator.lv	Valsts Pataloģiju centrs
Tuberculosis and Lung disease Agency	TPSVA	www.tuberculosis.lv/	Tuberkulozes un plaušu slimibu valsts aģentūra
State Forensic Pathology Centre	VTMEC	info@forensic.apollo.lv	Valsts tiesu medicīnas ekspertīzes centres
State Agency for Health Promotion	VVVA	www.vvva.gov.lv	Veselības veicināšanas valsts aģentūra

Source: Compiled by the authors 2007

Some of the agencies listed provide essential management functions of the healthcare industry such as pharmaceuticals management, blood donation, sanitation regulations, administrating compulsory insurance funding, collecting, storing and analyzing user personal data and maintaining the healthcare databases and registers. Most of the agencies in some form were operating during the Soviet period and in many cases had a similar function. However they have been reorganized into the current agency network and are significantly more modern in functionality, management and service quality.

The core of the new reformed healthcare system is the Compulsory Health Insurance Agency (VOAVA, the "Agency"). It has a network of offices that covers all of Latvia and its information

system (IS) network connects all public and participating healthcare providers. The Agency has a main office in each of the five planning regions: Riga, Vidzeme, Kurzeme, Zemgale and Latgale and in each region there is a network of local branch offices. The Agency provides local and rural healthcare service providers with access to state financing, which allows them to benefit from structural, developmental and quality improvements and a transparent and unified pricing system. The Agency signs contracts with registered healthcare providers, including pharmacies. The purpose is to ensure broad availability of healthcare services and to reimburse for services, medicines, equipment and other items provided to patients. The Agency is responsible for marketing healthcare services and informing users of their rights in receiving healthcare. Since VOAVA has access to the largest amount of healthcare data in Latvia it undertakes the task of summarising and analysing information, proposing and planning developments, allocating resources, evaluating the necessity of services and calculating costs and prices. With a certain amount of local autonomy, each local office of the Agency determines which healthcare providers in the local community should be the main service providers.

In the eHealth context it is important to mention the Accident and Emergency Centre because it is a driving force for the national telemedicine project. The centre was created in 1995 and at that time had fragmented units of ambulances. Since then it has developed a modern system where the emergency system is much more comprehensive and includes medical units, fire fighters and civil emergency units with integrated command and control. All these services use the same fast call access, digital maps and GPS navigation systems providing a coordinated response to accidents and emergency situations. In 2006 the ambulance services upgraded their vehicles and now there are 20 well equipped ambulances with technology that allows fast digital diagnostics to be transmitted in real time to the nearest emergency hospital. The hospital system and network of ambulance centres is still not fully developed. A plan for the full project was ready in 2003, but a lack of political will mean that the second part of reform did not receive the required financing and the project was postponed. In the preparation process the Emergency Centre received assistance from Nordic countries, including consultants evaluating and analysing the existing situation and proposing details of a new IS. In 2006 the project was approved within eHealth guidelines and is included in the eHealth Action Plan, published in February 2007.

For social healthcare issues the Ministry of Welfare supervises a variety of agencies and institutions and the eight key units are listed in Table 18. While the structural units report formally to their superiors in the Ministry of Welfare, there are also lines of communication with counterparts in the Ministry of Health as appropriate.

Table 17: Social healthcare institutions reporting to the Ministry of Welfare

	Institutions of the Ministry of Welfare	www.lm.gov.lv	**Function**
1	State Social Insurance Agency	www.vsaa.gov.lv	Administers the social insurance budget
2	State Labour Inspectorate	www.vdi.gov.lv	Deals with worker health and safety
3	State Employment Agency	www.nva.lv	Promotes employment in the labour force
4	State Professional Career Counselling Agency	www.karjerascents.lv	Career counselling to promote employment
5	Social Service Board	www.socpp.lv	Administers the state budget for social services. Manages ERDF and ESF grants.
6	Social Integration Centre	www.sic.gov.lv	Promotes social integration
7	Centre for Technical Aids	www.tpc.lv	Provides medical and disability aids
8	State Commission of Physicians for Health and Work Capacity Examination	www.vdeavk.gov.lv	Assesses workers' disability compensation claims

Source: Compiled by the authors 2007

While the Ministry of Welfare supervises the provision of social healthcare in Latvia, the operational responsibility and service delivery rests primarily with municipal government units. For example in Riga City social services are organised in five city districts. There are several new modern day-care centres for old people, the handicapped or children with special needs, crisis centres, rehabilitation centres and shelters, that add to the previous network of state nursing homes and orphanages. Riga City owns seven orphanages and contracts services from nine other orphanages in Riga and elsewhere in Latvia from providers including the Red Cross and the Samaritans. There are five shelters in Riga for homeless people. The healthcare reform plan includes the closure of a number of rural hospitals, which will then be reconstructed as social care and local medical centres.

I.3.3. Municipal healthcare institutions

In 2005 in Latvia there were 109 hospitals. In the capital Riga there are 20 major multifunctional and specialised hospitals, including 9 state hospitals, 5 municipal, 3 private clinics and 3 drug addiction rehabilitation centres. In the Riga area there are 22 hospitals, both state and municipal owned. In other districts of Latvia most of the hospitals are owned by the local municipality. In the Zemgale region in the south there are 19 hospitals of which all except one state hospital are owned by the local municipality. In the Kurzeme region in the west there are 15 municipal hospitals. In the Vidzeme region in the centre there are 17 hospitals and in the Latgale region in the east there are 18 hospitals.

Healthcare and local government reform will greatly affect healthcare providers in the outer regions because the reform strategy plans to close small hospitals in remote regions, reorganise general hospitals into specialist hospitals, increase significantly the supply of mobile emergency service units and increase service provision via remote access.

I.4.   Healthcare reform

Healthcare reform in Latvia has been a painful and prolonged process. Much has been achieved but much remains to be done.

A chronology of healthcare reform is as follows:

In 1997 the Welfare Ministry together with World Bank consultants created a "Healthcare Reform" plan and Latvia signed an agreement with the World Bank for a dedicated loan and project implementation in the following phases:

1st phase – Healthcare financing reform

2nd phase – Structural reform of the Healthcare system.

The 1st phase was started in 1999 and continued up to the end 2003. It shifted healthcare financing from a policy of fixed allocations to each provider form the healthcare budget to one of payments for actual services provided. Under the new system of payments for actual services, healthcare institutions were restructured as separate business units. They provided services to each patient and then billed the services to the state. That process of restructuring introduced the new principle: "money follows the patient". Each specific service was priced similarly in all institutions, which consequently introduced transparency and fairness among healthcare providers. In order to optimize the structure of the healthcare system, a master plan for the primary and secondary service levels was created. The master plan determined the national distribution and locations of ambulatory and in-patient healthcare providers, to assure good quality service and accessibility for the whole population.

Following a change in government in 2003, the new government was still determined to follow the original targets for reforming the healthcare system. However, in 2004 the Ministry of Health issued a new initiative to change some of the hospitals back into "government agencies", consequently providing financing as in the old system – according to a planned budget rather than according to actual services provided. This created contradictions and inconsistencies because different healthcare institutions received different payment from the state for the same services – some according to the planned budget, some from billing actual services provided to patients. Also, funding was provided by different state organisations. This meant that the attempt to consolidate healthcare expenses from the budget into one stream remained unreachable.

A significant result of the structural reform was the creation in 2003 of the State Agency for Compulsory Health Insurance (VOAVA). VOAVA is responsible for the administration of financial resources within the healthcare system. In order to receive state payment for delivered healthcare services, institutions, centres and practices have to comply with requirements of medical standards (through certification) and to have Internet access in order to access VOAVAS's system and submit the required data reports.

VOAVA uses a proprietary secure data network system (DPS) to communicate with both public and private healthcare providers. Via broadband Internet, VOAVA sends information to and receives performance reports from the healthcare providers. These service providers include hospitals, polyclinics, GPs, dentists, opticians, clinical laboratories and private practices. Performance reports are used by VOAVA to calculate and approve payments to the healthcare providers.

In practice, the VOAVA databases are managed by another agency – the State Agency for Health Statistics and Medical Technology – which maintains the DPS database, collecting relevant data and generating reports. However, the Health Statistics Agency uses VOAVA's infrastructure and IS for the task of data collection.

Healthcare reform in Latvia has involved two key phases. The first phase saw the creation of a number of national registers that provided a foundation for eHealth. Examples are: the Medical Staff and Healthcare Providers register, the Medicines register, the Medicines Price register, and the Medical Equipment register. The State Agency for Compulsory Health Insurance (VOAVA) in 2003 created a new data management system, which currently forms the core eHealth IT system in Latvia. The users of this IT system are not the general public. The system provides data flow between healthcare professionals, VOAVA and other agencies like the Health Statistics Agency. Apart from reimbursing

for claimed services, VOAVA uses data input by healthcare professionals to allocate resources according to optimization criteria. A GP might send a request to VOAVAS's IS which then allocates it to the waiting list for the specific treatment. VOAVA IS also provides data for the Health Statistics Agency. The IT system has its own fibre optic infrastructure covering all of Latvia and comprises a core system and the 14 modules listed below:

1. Core operating system
2. Classifiers maintenance system
3. Register of participants of Health Compulsory Insurance
4. Register of Medical institutions and medical professionals
5. Waiting list management (for some healthcare services)
6. Core Accounting System
7. In-patient services, contracts, finance and administration
8. Reimbursed medicines for out-patient treatment, contracts, finance and administration
9. Out-patients service, contracts, finance and administration
10. Dentistry Services, contracts, finance and administration
11. Emergency Medical Care, contracts, finance and administration
12. Data analyses and Statistics
13. Centralized procurement of medical remedies, tenders, contracts and administration
14. European Health Insurance Card (EHIC)

The second phase of the reform aimed at consolidating and reorganizing healthcare resources has proceeded slowly. Codifying the recent history of policy development in healthcare in Latvia, the Cabinet approved the strategy documents listed below:

	Key healthcare strategy documents	Date approved by the Cabinet of Ministers
1	Strategy for the development of in-patient and out-patient care	14.12.2004
2	Strategy for developing human resources in the medical sector	03.05.2005
3	Strategy for the development of ambulance services	12.07.2005
4	eHealth Strategy	16.08.2005
5	eHealth Action Plan	12.02.2007

Source: Compiled by authors 2007

The key strategy documents listed above mark the second part of healthcare reform because they define the main goals for optimizing and reorganizing the existing system, as explained further below. These strategies also provided the basis for developing the relevant legal framework for healthcare, which is explained in chapter II of this report.

1. The in-patient and out-patient service Strategy determines the institutional structure, size and classification requirements for various types of healthcare institutions and the number of institutions needed to provide good quality healthcare throughout Latvia. The strategy aims at optimising the number of institutions, their location and their respective service specialisation, thereby improving the quality of care, cost effectiveness and accessibility to everyone. Within this plan the aim is to develop an effective primary care system and network. This includes improving the ambulance services, producing highly qualified and specialised medical professionals, creating a medical rehabilitation system and providing efficient access to a range of medical facilities. Development will include expansion of primary care and consolidation of secondary care facilities with the aim of reducing the length of hospital stays and improve accessibility to new and more effective technologies.

2. The Strategy for developing human resources in the medical sector determines the needs for medical staff. Presently Latvia has a shortage of medical staff in general and the problem is compounded by a relatively high average age and concentration in the larger cities and towns. During the past two years the annual decrease in medical staff numbers has stabilised, encouraged to some degree by recent pay increases and administrative support. Future support is planned in the universities, which train doctors. The decreasing number of medical students in universities is expected to continue further during the next 10 years as a result of a declining birth rate. The Strategy recognises the need to forecast the demand for medical staff in specific functional areas and regional locations, to support and improve medical education quality and facilities and to create a remuneration system that attracts students and workers into the healthcare industry.

3. The Strategy for the development of ambulance services defines the need for modernising the services, including upgrading emergency call systems, improving the distribution of ambulatory care points in the regions, modernising the stock of ambulance vehicles. It is planned to have a telemedicine network that would allow ambulances to send diagnostic and patient data from the van to the emergency hospital prior to arrival. Ambulances also will focus on the needs of rural areas. This is part of a new healthcare reorganization in which small local hospitals, some of which have already been closed, are replaced by mobile emergency services. The number of ambulance teams will increase and they will be organised within Latvia's five main planning regions.

4. The eHealth Strategy recognises the importance of data capture, secure storage and flexible access. In August 2005 the Government approved the current eHealth policy paper, which outlines a development plan for the next 10 years to 2015. The Policy sets tasks for developing several new information systems such as electronic patient records (EPR), electronic ambulatory health records, electronic image processing and a visual diagnosis system and integrating existing systems. The strategy sets out the key principles of IT development in the healthcare sector. The Strategy aims:

- to improve individuals' control over their health by making available access to personal health data (Electronic Health Records);
- to improve the efficiency of healthcare services by providing medical staff with quick and precise patient data;
- to use centralised clinical diagnoses and telemedicine solutions and to provide the availability of high level professional medical advice in remote areas; and
- to provide high quality current information for centralised national health analysis, planning, implementation and control.

The eHealth Strategy acknowledges the legal development effort required to ensure personal data protection and also recognises the need to modernise the medical sector, to provide computers, systems infrastructure, Internet access and training, and to encourage internal IS implementation, including particularly the integration of existing registers and databases.

5. The long awaited eHealth Action Plan envisages a total expenditure in excess of 55 million LVL (just over 78 million euros) over 2007-2013 and contains seven priorities. For details see section II.2.2 below.

The reorganisation of hospital locations, service type and resource allocation was launched with the Cabinet of Ministers approving the restructuring plan in 2005. The plan assigns specific service roles to each hospital in Latvia and determines their function and specialization. The development programme for ambulatory and in-patient care providers determines which hospitals are best suited to be located in particular areas, and also sets their specialisation and capacity requirements. The healthcare resources in Latvia and their development trends from 2003 to 2005 are presented in Table 19.

Table 18: Healthcare resources in Latvia 2003-2005

Resource	2003	2004	2005
Number of hospitals	131	119	109
Number of hospital beds	18169	17891	17677
of which maternity	648	640	645
Number of beds per hospital (average)	139	150	162
Number of beds per 10,000 population	77.7	76.9	76.8
Doctors (including dentist)	7883	8087	8207
per 10,000 population	33.7	34.9	35.8
of which dentists	1287	1390	1450
per 10,000 population	5.5	6.0	6.3
Nurses	14741	14725	14927
per 10,000 population	63.0	63.5	65.1
Number of hospitalized patients	486	488	509
per 10,000 population	20.8	21.1	22.1
Ambulatory healthcare institutions	2494	2585	2749
Number of district nurse medical offices	263	250	242
Number of visits to doctor (except dentist) millions	11.0	11.6	11.9
per 1 inhabitant	4.75	4.97	5.19

Source: Agency for Health Statistics 2006

The resources data in Table 19 illustrates that while the number of hospitals decreased by 20% between 2003 and 2005, the number of beds decreased only marginally (2.8%) because the remaining hospitals are larger and have more beds. This is confirmed with the 14.5% increase during the period in the average number of beds per hospital. While the number of hospitalised patients increased by 4.5%, the number of doctors and nurses increased by only 3.9% and 1.2% respectively, illustrating the growing challenge to recruit medical staff.

Future reforms in healthcare will be driven by demographic changes, epidemiological transitions, rising patient expectations and the development of patient rights, all within increasing budget constraints as the share of working age population declines. One means of addressing these demand-driven reforms will be to increase the level of integration of healthcare services and to increase the functionality of the ICT support systems for healthcare. As healthcare services evolve, traditional service boundaries will shift to accommodate a range of new services such as day-care centres instead of general hospitals, remote ICT support and telemedicine, and more informed medical care at home.

I.5.   Ownership and financing of the healthcare system

Healthcare in Latvia is still dominated by the public sector. Thus, in 2005 there were 109 hospitals, of which only approximately 5% were privately owned. There are two major forms of public healthcare ownership in Latvia: (1) state-owned or state-controlled; and (2) municipal-owned or controlled. The main specialist hospitals and regulatory institutions are state owned and include several city hospitals. Rural hospitals and local rural GP offices are owned by the local municipality.

Riga, the capital city, owns five large full-service municipality hospitals, 11 out-patient treatment centres (policlinics). Riga also has four full-service private hospitals and more than 15 out-patient centres (policlinics), 12 state specialised and full-service hospitals.

Table 19: State, municipal and private hospitals and beds in Latvia

2005	Total	State	Municipal	Private
Hospitals in Latvia	109	53	50	6
Share of hospital beds	100%	49%	46%	5%

Source: CSB 2006

The private sector is increasing rapidly from a low base in the range and number of healthcare services it provides and the number of private doctors has increased significantly in recent years. This growth has been driven primarily by demand from higher income residents and more broadly by the availability from 2000 of private health insurance. Dentists are self-employed and work on a private basis however the State Compulsory Health Insurance Agency contracts them for the provision of dental service for children up to the age of 18. Pharmacies are entirely private. The private sector dominates in pharmaceutical distribution and retail sales, as well as dentistry, eye testing, eyewear retail sales and some smaller private practices such as cosmetic surgery.

I.6.   Public and business involvement in decision making in healthcare

The Patients' Rights Office was established in 2001 with support from the Soros Foundation. The Office offers help and advice to patients and contributes a monitoring function within the policy planning cycle. For example the Office provided significant input during development of the "Medical Treatment Law", the "Law on Physicians' Practices" and the "Personal Data Protection Act".

Other community organisations in Latvia that have contributed to raising awareness and participating in healthcare policy dialogue include: the Association of Diabetes of Latvia, the Society of Bronchial Asthmatics, the Organisation of People with Special Needs, the Centre for Human Rights and Ethnical Studies, the Consumer Rights Protection Association, and the Palliative Care Association. There are also a number of professional organisations related to the healthcare sector: the Association of Healthcare Employers, the Society of Pharmacists, the Association of Nurses, and the Society of Latvian Doctors.

The WHO has a representative office in Riga whose main role is as an observer of health policy in Latvia. For example, none of the state institutions collecting healthcare data in Latvia monitor or report on the healthcare activities of the private sector and so the WHO has taken this task upon itself. In addition, the WHO organises conferences for healthcare professionals in the Baltic states in order to facilitate knowledge sharing and to identify current best practices.

For the benefit of policy makers, healthcare professionals and the general public, there are a number of non-governmental healthcare associations and organisations in Latvia covering a wide variety of health issues.[15] In public portals related to healthcare and other portals, healthcare issues are discussed publicly. In the context of eHealth, most of those associations and organisations have a website for visibility, ease of access and interaction. All of the websites are in Latvian and many provide an English version as an option.

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[15]   Private portals www.dr.lv/, www.medicine.lv, www.medicina.lv and www.medline.lv contain lists of doctors, hospitals, medical centres, medical equipment and others. The portal of the State Medical library www.lmb.gov.lv provides a good overview of medical portals in Latvia. Healthcare institutions covered by the State Agency for Health Statistics and Medical Technology are listed at:
www.vsmta.lv/?menu=read&id=5&rid=10&type=db_iest&pid=1&pid2=2&sp=4&sp2=1

II. DEVELOPMENT OF EGOVERNMENT AND EHEALTH IN LATVIA

II.1   Institutional structures, resources and funding for eServices

II.1.1.   eGovernment services institutions

The major institutions in Latvia that currently provide eGovernment services include a variety of Ministries and their state agencies. For example the Ministry of Finance and its State Revenue Service, the Ministry of Welfare and its State Social Insurance Agency, the Interior Ministry and its Office of Citizenship and Migration Affairs, the State Police and its Road Traffic Safety Directorate, the Ministry of Science and Education and its universities, and the Ministry of Culture and its network of public libraries. eGovernment services currently provided relate to taxation, social benefits, healthcare, education, libraries, employment, public procurement, law enforcement and citizenship. All of these services are the responsibility of the central government, except for building permissions, registry offices and change of address details, which are local government responsibilities.

In late 2006 the eSecretariat created the IS (Information Systems) register which intends to list more than 80 state IS. The main state ISs are run by the State Revenue Service, (where the lack of a nationally approved e-signature has been substituted by individual agreements with clients and its own secure e-signature solution, thereby achieving the 4th sophistication interactivity level according to EU benchmarking criteria); the State Social Insurance Agency, providing the second level pension scheme, and information on social insurance accounts, payments and social benefits; the State Road and Traffic department (CSDD) with car registrations, driver licences and related services; the Enterprise Register, similarly using individual customer agreements to provide full eService; the State Land Service, driven to modernize their system and improve data quality because some information has been maintained in two places. The launch of the portal www.latvija.lv in July 2006 marked a step forward to a better organised and targeted approach for delivering eServices to the public. The underlying purpose of the portal is to provide one access to integrated eServices, using an authorization tool with an e-signature. However, because the integration tool and system are still under development this part was not yet active in 2006. The portal remains an aggregating site, providing links to other national sites providing easy and more efficient access to a whole range of information.

In Latvia different ministries and agencies hold responsibility for the implementation of their own ICT projects. During the writing of this report in 2006 many new activities were initiated and new policies and systems have been implemented. With the need to integrate the core national databases there is a new need for more coordination of ICT development. With development in 2006 of IVIS (Integrated State IS) state institutions are becoming more engaged in the centralised coordination processes. The government has delegated to the eSecretariat more responsibility for controlling the financing of ICT development for the next Regional Fund planning period through to 2013.

On the local level state institutions have their office network across the country providing eServices locally. Some municipalities have started to introduce eServices in town portals. Most of the municipalities have their own websites based on a standard format, developed centrally. The first pilot project for developing eServices and a customer service centre was launched in early 2005 in the southeast town Jēkabpils. Its One Stop Agency[16] has been active since April 2005 and appears to be achieving its objectives. The Regional Ministry has established 10 ICT support centres in regional municipalities to help them participate in the National Municipal Network, which is the eDocument circulation and run out of Ventspils town. During 2006 there have been some new developments as more institutions are looking in to restructure their front office function. The situation is crystallising at the operational level although at the political level there is no centralised policy discussion about front and back office reform as such.

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[16]   http://www.jekabpils.lv/JKP/lv/home/pilseta/default.aspx

In December 2004 the Latvian parliament approved a new Ministerial post, the Minister for Special Assignments for eGovernment Affairs. The Minister has political responsibility for the development and implementation of state policy in the field of electronic government and Information Society. The Ministry also supervises the implementation of information technologies in the state administration.

On 1 January 2005, the Government established the eSecretariat as a working body for electronic government. It facilitates and coordinates the development of central and local government electronic services and represents Latvia's interests in relevant international organisations and EU institutions. The eSecretariat took over the functions of the previous Information Society Bureau (ISB) and became responsible for eGovernment policy development, implementation and coordination. The Secretariat supports the work of the Information Society National Council, chaired by the Prime Minister, monitoring the implementation of the Council's decisions and preparing reports to the Prime Minister and the Cabinet of Ministers. The eSecretariat is a supervisory unit headed by the aforementioned Minister and responsible for defining Latvia's eGovernment policy and for coordinating and monitoring the implementation of approved policies. Thus the formal structure of responsibility for eGovernment in Latvia is quite new. This means that the exact structure of responsibility below the level of the eSecretariat is not fully defined and is still evolving. Other Ministries and institutions are slowly accepting the eSecretariat's role of coordinating IT development however the Ministries are not yet fully aware of the significance of the IS integration task nor are they fully supportive in fulfilling their part of the task.

Below and parallel with the Secretariat are a number of other units with associated functions. The Information Society National Council was established to provide high-level leadership on eGovernment and information society issues and to coordinate and promote all related development processes. The National Council is composed of the Cabinet of Ministers and representatives of Latvia's Local Governments Association and other institutions or councils. The Council is a consultative institution, which aims to facilitate the development of the information society in Latvia and to promote the inclusion of Latvia in the global and European knowledge economy.

There is also the eGovernment Coordination Council, which facilitates the implementation of eGovernment strategic guidelines and the realisation of eGovernment projects. The Coordination Council, chaired by the Minister for Special Assignments for Electronic Government Affairs, comprises representatives of all ministries, Latvia's Local Governments Association, the State Revenue Service and Latvia's Large Cities Association.

The exact structure of public institutions involved in the provision of eGovernment and eHealth services in Latvia is difficult to describe in an ordered or hierarchical way. The constituent institutions and organisations include: banks, the State Social Insurance agency, ministries, the Vehicle Registration Office, the State Land Registry, the Enterprise Registry, insurance companies, court prosecutors, etc. There are several systems included that have some related functions however the systems currently are not linked or integrated, a weakness which is being addressed by the development of an integration tool and system.

Even before the concepts of eGovernment or eHealth existed, a number of database registers had been created in the early 1990s in Latvia in order to automate basic data processing tasks. These were for internal departmental use rather than for the public and so were not eServices in that sense. For example, in 1992 the Latvian Enterprise Register was created to record details of companies registered in Latvia. Then in 1993 a register respectively of Residents, Real Estate Cadastral Numbers and Vehicles was created. The register of the State Revenue Service, dealing with tax revenue, was created in 1995 and used some data feeds from the other registers. In 1998 the concept of a mega system was developed with the goal of creating a network of all the database registers and through which data could be shared among the various departments and ministries. However the Government at the time did not proceed with the mega system project, claiming it was too complicated and too costly. By 2000, and with Latvia by that time an EU accession candidate, the remaining core national database registers had been created.

The Enterprise Register was created in 1992 and the technical work was outsourced to the private company Lursoft (www.lursoft.lv), which manages the enterprise register and other databases where company information is available to the public. Using Lursoft's paid services it is possible to obtain information from the register of Movable Pledges, the data base of Foreign Companies established in Latvia, the Digital Library of Periodicals in Latvia, the Latvian Court Claims data base and others.

The Department of Citizenship and Immigration was established in 1991. In 1992 it started the residents' register and reported to the Cabinet of Ministers. Later the department was subordinated to the Ministry of Justice and then in 1993 it became a structural unit of the Ministry of Interior. In 1996 it was reorganised into the Office of Immigration and Citizenship and provides immigration and emigration services, the Residents' Register, Latvian passport services, repatriation services (from 1995) and refugee support.

State Land Book under the Ministry of Justice was created in 1998 on the base of the cadastral register. The Land Book is linked to the State Address Registry. From 2003 it has been linked to the State Protected Land Areas Registry and from 2005 to the Agricultural Land Purchase registry for privatization.

State Revenue Service was established in 1993 and monitors tax collection via several state institution databases. The tax system uses data from a variety of systems to be able to record, report and monitor taxes, including corporate, income tax, VAT, excises tax, various custom duties, social insurance, real estate tax, vehicle tax, natural resources tax, gambling and lottery tax, and taxes in Free Ports and Special Economic Zones. From 2003 it has provided 3rd level sophistication eServices, but from March 2006 it offers full sophistication eServices using their own e-signature system, well before the state introduced its "safe e-signature" in October 2006.

The State Compulsory Health Insurance Agency has databases from 2003, apart from a payment reimbursement IS it has a register of healthcare providers, a register of reimbursable medicines, a waiting list database, and a database for healthcare statistics.

State Pharmaceuticals Registry keeps databases of approved drugs and their prices.

A state level Data Transmission Network was set up in 1997 under the Ministry of Transport. Since 2004 it has been operated by the State Information Network Agency VITA (Valsts Informācijas Tīkla Aģentūra) that has integrated various state communication infrastructures such as those of Latvian Railways, Latvenergo, which is the electricity utility and Air Traffic Navigation Control. VITA also rents cable lines from others, including Lattelecom. The idea and intentions were good, but the actual implementation has been slow and was only partially competitive on a commercial basis. Presently VITA is just one of the several infrastructure providers in the market. Its customers are state institutions, municipalities and some private customers in Latvia.

Most of the institutions that provide eServices are state or municipal institutions. The main institutions are listed in Table 20 in alphabetical order according to their acronym in Latvian.

Table 20: State institutions involved in eService delivery

www.atd.lv	Road Transport Administration
www.bank.lv	Central Bank of Latvia
www.caa.lv/	Civil Aviation Administration
www.cfca.gov.lv	Central Finance and Agreement Agency
www.competition.lv	Competition Council
www.csb.gov.lv	Central Statistics Bureau
www.csdd.lv	Road Traffic Safety Directorate
www.fktk.lv	Financial and Capital Market Commission
www.iaui.gov.lv	Lottery and Gambling Supervision Office
www.iub.gov.lv	Office of Public Procurement Supervision
www.izm.gov.lv	Ministry of Education
www.jurasadministracija.lv	Maritime Administration
www.kis.gov.lv	Culture Information System
www.knab.gov.lv	Corruption Prevention and Combating Bureau
www.lad.lv	Latvian State Roads Company
www.ma.gov.lv	State Agency for Housing
www.mk.gov.lv	Cabinet of Ministers
www.nva.lv	State Employment Agency
www.pmlp.gov.lv	Office of Citizenship and Migration
www.ptac.lv	Centre for Consumer Protection
www.ur.gov.lv	Enterprise Register
www.vaad.lv	State Plant Protection Service
www.vas.gov.lv	State Management Training Centre
www.vcp.gov.lv	State Civil Service Administration
www.vid.gov.lv	State Revenue Service.
www.vidm.gov.lv	Ministry of Environment
www.vm.gov.lv	Ministry of Health
www.voava.lv	State Compulsory Health Insurance Agency
www.vp.gov.lv	State Police
www.vpui.gov.lv	State Precious Metals Standards Inspectorate
www.vsaa.gov.lv	State Social Insurance Agency
www.vvd.gov.lv	Environmental State Inspectorate
www.vzd.gov.lv	State Land Service
www.vza.gov.lv	Medicine registry
www.zca.gov.lv	Medicine Price Registry

Source: Compiled by the authors 2007

The VNDPT (Important State Data Transmission Network), a multifunctional, vertically integrated voice and data transmission network, is based on 32 network nodes located in each of the country's territorial districts as well as in the capital city Riga and the nearby towns of Jūrmala and Sigulda. The network provides good connection speed, dedicated lines and adjustable bandwidth customised to serve different networks in government institutions. The part of VNDPT available for public use provides government institutions and municipal organisations with a means to display public information.

Lattelecom is a state controlled telecommunications company with TeliaSonera as a significant minority owner. Lattelecom is a major provider of electronic communications services, offering voice telephony (fixed line and mobile), data and Internet services, integrated electronic communications

and information technology solutions, and outsourced business processes. Lattelecom provides services to more than 500,000 clients in Latvia, the Baltic States and Scandinavia

At the local level, state institutions have their office network that provides eServices across the country. Some municipalities have started to introduce eServices in town or region Internet portals. Most of the municipalities have their own websites based on a standard format, developed centrally. Some examples are listed below in Table 21.

Table 21: Portals of local municipalities in Latvia

Rīga	www.riga.lv	Daugavpils	www.daugavpils.lv/	Zilupe	www.zilupe.junik.lv/
Jūrmala	http://old.jurmala.lv/	Zilupe	www.zilupe.junik.lv/	Balvi	www.balvi.lv/
Liepaja	www.liepaja.lv/	Balvi	www.balvi.lv/	Valmiera	www.valmiera.lv/
Ventspils	www.ventspils.lv	Valmiera	www.valmiera.lv/	Bauska	www.bauska.lv
Kuldīga	www.kuldiga.lv/	Bauska	www.bauska.lv	Preiļi	www.preili.lv/
Tukums	www.tukums.lv/	Preiļi	www.preili.lv/	Smiltene	www.smiltene.lv
Dobele	www.dobele.lv/	Smiltene	www.smiltene.lv	Cēsis	www.cesis.lv
Auce	www.auce.lv	Cēsis	www.cesis.lv	Valka	www.valka.lv/
Jelgava	www.jelgava.lv	Valka	www.valka.lv/	Sigulda	www.sigulda.lv/
Ludza	www.ludza.lv/	Saldus	www.saldus.lv/	Gulbene	www.gulbene.lv/
Ogre	www.ogre.lv/	Salaspils	www.salaspils.lv/	Rēzekne	http://rezekne.risc.lv/
Limbaži	www.limbazi.lv/	Jēkabpils	www.jekabpils.lv/	Jēkabpils	www.jekabpils-rp.lv/
Talsi	www.talsi.lv/	Aizkraukle	www.aizkraukle.lv	Daugavpils	www.daugavpils.lv/

Source: compiled by the authors 2007

Since January 2001 the State Data Inspectorate has supervised personal data protection in Latvia. It controls personal data processing security and maintains a register of ICT systems that process personal data. The Inspectorate reports to the Ministry of Justice.

At the time of writing the Ministry of Health was responsible for the eHealth service architecture. The Ministry uses the State Health and Medical Statistics Agency and the Compulsory Health Insurance Agency in the planning and implementation process. Incorporating international best practice, the Ministry has subcontracted Ernst Young to advise on the creation of an effective eHealth system architecture.

Part of the control function over eServices lies with the State Audit Office because it is the Supreme Audit Institution of the Republic of Latvia and its mandate is wide and covers all public bodies at national and local level. The State Audit Office is required by law to submit a report on the execution of the state and local government budgets and provides an annual opinion about the correctness of the financial statements of the ministries, central state institutions and local governments.

Currently there are no centralised requirements for medical institutions in ICT usage or Internet portals however it is the Ministry of Health's intention to create such as regulatory function.

II.1.2.   eHealth services institutions

eHealth services are primarily the responsibility of the Ministry of Health, Ministry of Welfare, and associated structural units, for example public hospitals, policlinics, the social benefits agency, and the State Agency for Compulsory Health Insurance. See section I.2.3 for further details. The Ministry of Health's annual report of 2004 states that the institutional system under its responsibility includes three types of structure of healthcare institutions: 25 state agencies, institutions and centres; 16 limited liability companies; and 31 state joint stock companies.

Several of the listed institutions have started important IS creation (e.g. VADC, SVA, VZA), that provides essential specific data accumulation for their functions and service support. The new IS will be usable for data integration with other systems. The Pharmaceuticals Agency runs a medicine registry and is providing information and analyses to Institutions and to the public.

eHealth in Latvia is at an early stage of development. Institutional healthcare activities are supervised by the Ministry of Health and Ministry of Welfare. eHealth services in Latvia are in the form of internal and separate databases and IS of several healthcare state agencies. Public services are available mainly as on-line information through a number of medical portals. There is no coordinating and controlling body at present (2006) for medical portals. Consequently various hospitals, policlinics, specialised medical organizations and private healthcare providers have created and maintain their own databases and portals. In 2005 a private healthcare association launched an informative website for eHealth (www.eveseliba.lv) which aims to raise awareness and inform on eHealth developments. However, the portal does not appear to be active in the monitoring of the detailed implementation of relevant action plans, but nevertheless, is the only portal of its kind in Latvia.

The core information systems of eHealth in Latvia consist of a fairly large number of different registers The registers are maintained by a number of agencies subordinated to the Ministry of Health (see Table17). The key agencies are the State Agency of Compulsory Health Insurance (VOAVA), the Agency for Health Statistics and Medical Technology and the State Agency for Pharmaceuticals and Drugs. State agencies have the role of providing basic information on health statistics, medical staff and institutions and legal regulations relevant to healthcare. Other portals are provided by healthcare institutions and a number of specific illnesses and disease portals run by either state agencies or institutions reporting to the Ministry of Health or by private enterprises active in the medical sector. There are 28 healthcare providers with their own website.

The Latvian State Agency for Compulsory Health Insurance (VOAVA) was created in 2002 as a new type of agency for healthcare providers. VOAVA provides an electronic link from the healthcare providers to the state agency. The system provides one-way information transmission from doctors to VOAVA, but does not require on-line data exchange. This makes it easy to use for healthcare providers, especially in more remote areas. Healthcare providers need only access VOAVA's reporting interface via the Internet and submit requested information on healthcare services provided to patients. Based on input data and embedded algorithms, the system provides billing and account settlement between healthcare providers and the State.

The Ministry of Welfare informs on issues relating to social inclusion on its homepage www.lm.gov.lv. Examples of e-inclusion in Latvia are the Association of Spinal Injuries www.rehab.lv/msbrc/ and the popular social networking portal www.draugiem.lv/.

Social service e-information in Riga city is available through the Riga City Municipality Department of Welfare web page www.ld.riga.lv. Riga City has the most developed social services e-information in Latvia. With fewer resources, other cities and towns are less advanced.

II.1.3. Financing structure of eGovernment and eHealth institutions and projects

Financing of the institutions responsible for providing eGovernment and eHealth services is primarily from the state budget and municipal budgets, but many new initiatives rely on EU structural funds. The process of allocating financing to institutions that provide eGovernment services is based on national programmes approved by the Cabinet of Ministers. Budget financing is allocated to approved programmes with commitments made from the relevant ministerial budget. Since the eSecretariat has been active for only one year, data are not yet publicly available that state the actual amounts of financing allocated from national or local budgets.

The process of allocating financing for eHealth projects is at an early stage. The concept has been approved by the Cabinet of Ministers and the eHealth Action Plan was published in early 2007.

The second largest source of financing is EU funds, which are provided on a project-by-project basis. See Chapter I for the proportional allocation of state budget by government functions. However, since the centralised functions of eGovernment in Latvia are still in their early stages, as of the end of 2005 aggregate financing structures for eGovernment or eHealth for Latvia as a whole were not reported separately from the main state or municipal budgets.

Municipal development objectives are being pursued through the National Development Plan (2007-2013), the Spatial Development Plan, Sector Development Programmes, and regional spatial and development programmes. Financial and other support for regional development comes from a Regional Fund, a programme for Specially Assisted Regions, from sector development funds and from the support given to the regional development agencies. In particular the programme for Specially Assisted Regions provides financial support for the promotion of entrepreneurship and tax allowances for enterprises, which support policy objectives, including the development of eServices.

During the period 2004-2006, Latvia had grant financing for all sectors and activities available through several EU funds in total EUR 625 million, of which the European Regional Development Fund (ERDF) was the main source. Latvia's own funding for 2004-2006 was EUR 370 million (LVL 259 million), representing 52% of the total EU funding to Latvia during the period. The amount available for eGovernment related projects were a relatively small EUR 12 million or 3.3% of ERDF funding.

Figure 7 illustrates the development of Latvian State Budget and ERDF co-financing of IT infrastructure and eGovernment over 2002 to 2006. Expenditure from 2002 to 2004 was for IT infrastructure, while expenditure after 2004 is forecast for additional IT infrastructure and for the implementation of specific eGovernment policies.

ERDF funding has supported a variety of ICT development activities for the period 2004-2006. Guiding this development, the government approved and is implementing a total of 43 different national programmes and within those are several IT and eService related projects. Each Ministry is responsible for their own ICT development; therefore it is somewhat complicated to determine precisely the breakdown of funds used for ICT.

Figure 6: Latvian State Budget and ERDF co-financing of IT infrastructure and eGovernment, 2002–2006
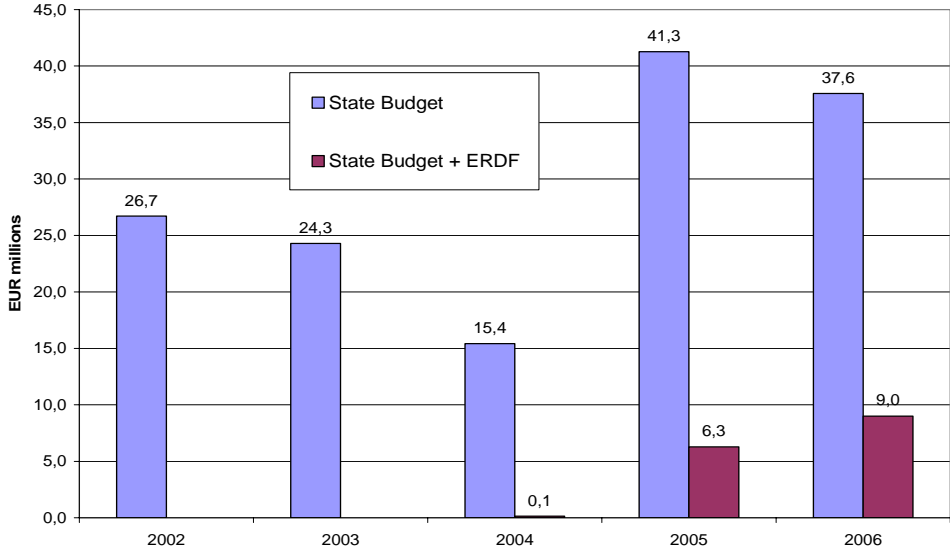
Source: Anatolijs Zabašta Kaspars Bērziņš presentation 16.06.2005

More broadly regarding ERDF-funded activities in Latvia, Table 22 shows the ERDF funds allocation by sector or ministry and in particular shows the share of explicit planned eService funding relative to other ministries, i.e. 3.3%.

Table 22: European Regional Development Fund allocations 2004-2006

Ministry	Funding (mn euro)	Share(%)
Ministry of Economy	156.4	42.2%
Ministry of Transport	99.6	26.9%
Ministry of Environment	33.5	9.0%
Ministry of Education and Science	29.1	7.8%
Ministry of Finance	15.0	4.0%
eGovernment Secretariat	12.3	3.3%
Ministry of Welfare	10.2	2.8%
Ministry of Health	10.2	2.8%
Ministry of Regional development and local municipalities	4.2	1.1%
Total	370.4	100%

Source: www.cfca.gov.lv/doc_upl/ERAF_ieviesana_2005.doc, 2007

Total Regional Fund financing for the eGovernment portfolio national programme has been EUR 11.6 million to 2006 and together with national financing it sums up to 15.5 million EUR.

eGovernment portfolio projects in 2005 were managed by the newly created eSecretariat institution, and addressed issues such as: ICT development in several towns, including the e-Vidzeme project, creation of the State Finance Information System, improvements of several national registers and data bases to prepare for the integration. However, according to the government's national programmes covering various development plans and priorities, a number of other projects could be considered as relating to eGovernment or eHealth but in 2006 the eSecretariat did not have centralised data on these other projects. For example, funds have been allocated to the Ministry of Health to improve healthcare infrastructure, including renovating hospitals and providing more equipment for the emergency services, creating a national blood bank database, a handicapped patient database, a database of medical aid equipment for disabled people and others. The Ministry of Transport is implementing a national programme to improve broadband availability. The Ministry of Welfare is creating a database of disabled persons and of medical technical aids. The Ministry of Science and Education is upgrading the IT infrastructure of universities. The precise share of eServices or ICT in these projects is not possible to calculate.

In 2005 with Regional Fund financing the Emergency Centre created a database of accident statistics. It was supported by the 30 largest hospitals, which continue data input and this will allow much better analysis and planning of the emergency services.

II.1.4.   Involvement of the private sector

There are about 4 000 ICT companies which produce about 12% of GDP with annual turnover above 700 million lats. Most are specialized in providing with various information technology services but the largest turnover concerns telecommunications enterprises.

Lursoft Ltd. is a well-known privately owned business information firm in Riga. It started in 1992 and in 2006 is the largest private on-line information provider (resource point) in Latvia: www.lursoft.lv. The company has developed and implemented more than 40 different software systems. Amongst those are the State Enterprise Register, several systems for sensitive data processing for the Ministry of Interior, software for the National Guard headquarters and the Latvian State Academic Library.

From 1992 Lursoft has developed and maintained the State Enterprise Register. In 1996 Register information became available on-line via Internet. Information includes more than 90 parameters on approximately 150,000 companies and associations in Latvia, about 350 000 shareholders, managers, equities and business activities. It provides information on more than 7 000 Latvian joint ventures with partners from more than 80 countries. Information is updated daily. Lursoft manages databases for the courts, which provide an account of more than 20 000 court cases starting from 1993, which is updated weekly.

Microlink Latvia, www.microlink.lv/ is a systems integration business, which started in Latvia in 1991. It has provided system and database design services to state institutions such as Latvia's Central Statistical Bureau and the State Revenue Service.

The Latvian Information Technology and Telecommunications Association – LIKTA plays a vital role in the ICT industry in Latvia. It promotes ICT development and helps to form relevant policy issues with constructive comments. It is a professional association, founded in 1998, that has as its members over 60 important product and service providers and educational institutions, as well as over 150 individual professional members of the information technology industry sector in Latvia. LIKTA member organisations employ over 15 000 people. The principal objective of LIKTA is to promote development of information society in Latvia, so that all citizens may be given the opportunity to benefit from ICT and contribute to the knowledge based economy. LIKTA works toward increasing e-awareness in society by organizing conferences and educational endeavours and takes an active part in preparing professional study programmes. LIKTA has organised the European Computer Driving Licence (ECDL) certification process in Latvia to allow non-specialists to confirm their computer skills within the project Latvia@World. By early 2006 it had established 26 ECDL examination centres, which offered training starting from the 4th grade with no upper age limit. LIKTA actively participates and provides expert advice to government institutions on legislative and other matters related to information technology, and maintains close links with other industry associations. It is an active spokesman on behalf of the information technology industry in Latvia. LIKTA is actively involved in discussing legislation and in monitoring public procurement procedures for information technology products and services.

DEAC Ltd. (Digital Economy Advancement Centre), established in August 1999, is the first company in Latvia to provide ASP (Application Service Provider) solutions. DEAC has created a modern underground Data Centre and a professional team. It offers hosting applications at the Data Centre, corporate Microsoft Exchange e-mail services (ASP), data transmission (Internet - ISP), co-location of the customer's equipment at the underground Data Centre, partial or complete maintenance of customer's hosted equipment or software (outsourcing), backup services, on-site or remotely from Data Centre, rent of Microsoft software at the underground Data Centre (ASP), as well as consulting on development and maintenance.

The Latvia State Radio and Television Centre is a state joint-stock company, which provides terrestrial broadcasting of radio and television programmes covering whole territory of Latvia. The services include signal transmitting service, planning, design and maintenance of transmission systems and telecommunication services.

There are many Internet providers in Latvia, the main ones are: www.latnet.lv; www.apollo.lv; www.delfi.lv; www.one.lv; and www.telia.lv/.

There are several portals offering health information and the central ones are listed in chapter I. The popular private general medical portals are www.medicine.lv and www.dr.lv, which provide databases of doctors, service providers, and pharmaceuticals. The portals are also a medium for health service providers to advertise on their page and promote new pharmaceuticals, equipment and technologies. Because the portals are private initiatives, they do not contain complete information, and mostly the parties who are advertising and providing information about their services are not the big and

specialised institutions. However, for industry as a whole it represents an important and democratic element.

A successful example of a private and advanced healthcare service is the "E.Gulbis Analysis Laboratory", the leading private pathology laboratory in Latvia. The laboratory was established in 1993 by the Belgian-Latvian Mr.Egils Gulbis. Today it is the biggest of its kind in the Baltic States and serves 1700 patients a day (on average with 5 tests per patient) and has staff of about 100. The laboratory has a network across the country and uses courier services to receive samples. 45% of its turnover is from the state sector and the rest comes from services that are paid by insurance, private doctors and patients. Every day about 300 responses to doctors and patients are sent by e-mail. The laboratory uses the secured database data processing programme "Cache". The processing speed of the computer analyses is 200 tests per hour. There are some competitors, providing analysis services both in state and private hospitals, but having to compete with the Gulbis laboratory drives others to keep up service quality. The healthcare system is in the process of reorganisation and therefore is not fully predictable and this has a negative impact on private providers of services such as testing.

A list of registered public and private healthcare institutions is available at the portal of the State Agency for Health Statistics and Medical Technology.

The Latvian Maritime Medical Centre (www.ljmc.lv/) was established in 1944, was transformed in 1996 into a state enterprise and was then privatised in 1997 as a private clinic. Due to its history it has a strong brand name in Latvia and with its more recent private ownership and investment it is considered to be one of the best equipped and customer oriented medical service providers in Riga. The LMMC has two hospitals and two medical clinics in Riga and provides a full range of diagnostic, therapeutic, family health, surgical, rehabilitation and other treatments.

The design and development of ICT systems in the public sector has involved a major involvement of the private sector because state institutions out-sourced system design, development and implementation to private companies. In many cases appropriate off-the-shelf systems or software were not available and local ICT skills in the private sector were of good quality so customised systems were developed. While public sector employees in general provide the front office function of public services, the ICT back office functions in many cases are provided by contracted ICT firms. In the context of eServices on-line, the front office disappears and the back-office expertise of systems administration, database maintenance and software and hardware upgrades can be provided cost-effectively by the private sector. The key factor is quality control by the responsible government agency to ensure that the contracted service satisfies the required quality standards and does not conflict with the policy objectives.

A recent example of such private sector involvement is the work on current government strategies in eService development. Ernst Young, the business services firm, has been contracted by the eSecretariat to produce a strategy for an integrated state IS, and by the Ministry of Health to produce an eHealth development strategy. Consequently much work in these areas has been achieved and is being produced at a high professional standard by experts in IT and public sector strategy formulation and implementation. The policy development work is based on international best practice.

A pilot project with IVIS ("Who is the registered resident on my property?" which involves 4 databases and 25 eServices) has been developed and will be launched in 2007 by two private companies.

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

Only relatively recently have eGovernment and eHealth been high priorities on the government's agenda. Initiatives were started in 2005 and much progress has been made in 2006, including during the period of writing this report. A key step was the appointment at the end of 2004 of the Special

Minister and the subsequent creation of a special unit responsible for coordinating public sector eServices in Latvia. In eHealth it was the adoption of the first complete eHealth strategy document, which led to work on an Action Plan and the adoption of three other Health Reform documents relating to in-patient and out-patient providers administrative plan, medical staff resource planning and ambulance services modernising, also to compensate for closed rural hospitals as part of the healthcare reform process.

II.2.1. Key government policies relating to eGovernment

The eGovernment concept in Latvia has evolved and developed in a rather ad hoc manner since 1998 when the parliament approved a new freedom of information law providing for public access to information held by central and local government institutions.

Since then, key policy developments have included the implementation in 1999 of a six-year National Programme to develop Latvia as an information society and the introduction in 2000 of a new law on personal data protection. In 2001 the Cabinet of Ministers adopted a new five-year Public Administration Reform Strategy to improve the quality and cost-efficiency of providing public services, including moving to an electronic platform. It determines unified forward-looking state governance system and facilitates integration into EU.

In 2002 the Cabinet adopted a Concept of eGovernment, which set the strategic principles for implementing eGovernment in Latvia. The core objective was to create a system that was citizen and service-oriented. It remained as theoretical concept, though in practice work on registries and database development took place.

In 2003 the Cabinet established an Information Society Bureau (IS Bureau) with responsibility for developing information society policy and for coordination of its implementation. The Head of the IS Bureau reported directly to the Prime Minister and to the Director of the State Chancellery. The idea of such an institution was good and subsequently evolved into the concept and eventual establishment of the eSecretariat.

In 2004 Latvia joined the EU and, among other activities, adopted the 2010 Lisbon Strategy for Europe as a knowledge economy and connected its government data network to the pan-European administrative network. The National Programme on Development and Improvement of eGovernment Infrastructure 2004-2006 was adopted, which, with the support of EU structural funds, aiming to fill the gaps in the State and municipal eGovernment infrastructure and to provide the basis for eGovernment systems in rural areas. With increasing complexity and with the purpose of coordinating the implementation of Latvia's various eGovernment programmes, the eGovernment Coordination Council was established, chaired by the Director of the State Chancellery. At the same time, the Information Society National Council was established, chaired by the Prime Minister with the purpose of developing Latvia as a knowledge-oriented society. In December 2004 the Parliament approved the appointment of a Minister for Special Assignments for eGovernment Affairs.

The National Lisbon Programme of Latvia for 2005-2008, approved by the Cabinet 2005, has the aims of promoting national growth and employment so as to reach the Lisbon strategy goals on the basis of the new set of Integrated Guidelines.

Recently approved by the Cabinet of Ministers (July 2006), is the Information Society Development strategy for 2006-2013. The short term goals are ICT infrastructure access development and broadband coverage improvement; improvement of financial accessibility of ICT by households and small and medium sized enterprises; to provide IT training and promote ICT usage; to introduce the e-signature and develop e-document and e-signature usage infrastructure, to develop on-line services, and innovative, knowledge intensive environmentally friendly products.

Table 24 presents a chronology of Latvia's eGovernment policies, strategies and laws from 1998 to the present.

Table 23: eGovernment policies in Latvia

Date	Policy document	Key Objectives	Unit Responsible	Comment
1998	Integrated State Information System project (mega system)	Determine principles of integration of prime registers and information systems	Various Ministries	See www.mega.lv
29 Oct 1998	Law on Freedom of Information	Ensure public access to data held by central and local govt.		Law determines uniform procedures for data access.
30 Mar 1999	National Programme on Informatics for 1999-2005	To develop the information society in Latvia.	Ministry of Transport, Dept of Informatics (to Dec 2003)	Programme cost of EUR 349 million.
23 Mar 2000	Law on Personal Data Protection	To protect the rights and freedoms of private persons with respect to the processing of personal data.		Based on standard fair practices and is fully compliant with the EU Data Protection Directive.
16 May 2000	Concept of ID Cards	To define the parameters of an electronic ID system in Latvia, including ID cards and passports.	Ministry of the Interior, Ministry of Foreign Affairs.	Concept amended in Sep 2001 and again in 2005.
July 2000	Updated National Programme on Informatics	Amended to take into account priorities under eEurope Action Plan (June 2000).	Ministry of Transport, Dept of Informatics (to Dec 2003)	Emphasising ICT as a significant branch of the national economy.
12 Dec 2000	Strategic Guidelines of Social Economic Programme eLatvia	To improve Latvia's competitiveness in the global economy.	Various Ministries	To be implemented through to Dec 2004.
10 July 2001	Public Administration Reform Strategy 2001-2006	To provide high quality public services to citizens and to ensure efficient financial management.	Various Ministries	
06 Nov 2001	Concept of Unified Libraries Information System	To develop a coordinated public libraries information system, including search and delivery of books, publications and documents.	Ministry of Culture	Included also links to international library networks.

02 May 2002	Law on State Information Systems	To ensure the availability and quality of services provided by state and local government institutions in the state information systems.		Provides a legal framework for the operation of state information systems.
23 May 2002	Law on Personal ID Documents	A personal ID card or passport is mandatory for all residents aged 15 and over.		
20 Aug 2002	eGovernment Concept	To create a citizen-orientated, democratic and effective state administration based on an electronic platform.	All Ministries	Sets the strategic principles and model for implementing eGovernment in Latvia.
31 Oct 2002	Law on Electronic Documents	Set an obligation for state and local government institutions to be able to accept no later than 1 January 2004 electronic documents from private individuals and legal entities.	All Ministries	Transposed the EU Directive on the EC framework for electronic signatures (1999/93/EC) and documents.
2002	www.LVonline.lv	To provide a single access portal for public sector information and services.	All Ministries	Replaced in 2004 by www.gov.lv
20 May 2003	Information Society Bureau (IS Bureau)	With responsibility for the development of information society policy in Latvia and coordination of its implementation.	State Chancellery	Head of IS Bureau reports directly to the Prime Minister and to the Director of the State Chancellery.
01 Jan 2004	Information Society Bureau (IS Bureau)	All functions of the Ministry of Transport and Communications related to development of e-Government and Information Society are taken over by the IS Bureau.	State Chancellery	The IS Bureau becomes the sole entity responsible for development of e-Government policy, and for coordination and monitoring of its implementation.
27 Jan 2004	Use of IT in the Public Procurement System	To develop a public procurement portal, e-catalogues and e-auctions and to establish a central procurement body.	All Ministries	The target: to realise 33% of all public procurement electronically by 2008, and to save EUR 1m per year after 2008.

01 May 2004	Latvia joined the EU.	Latvia adopted the 2010 Lisbon Strategy and connected its government data network to the pan-European network TESTA.	All Ministries	
22 Sep 2004	eGovernment Coordination Council is established.	To coordinate the implementation of Latvia's e-Government programmes.	State Chancellery	The Council is chaired by the director of the State Chancellery.
28 Sep 2004	Information Society National Council is established.	To facilitate the development of a knowledge-oriented society.		The Council is chaired by the Prime Minister.
Sep 2004	National Programme on Development of eGovernment Infrastructure for 2004-2006.	To fill the gaps in the State and municipal e-Government infrastructure and to provide the basis for e-Government systems in rural areas.	All Ministries	EU structural funds as one source of financing for the Programme.
04 Nov 2004	Law on Information Society Services.	To provide the legal framework for providing information services electronically.	All Ministries	The law transposes EU Directive 2000/31/EC.
02 Dec 2004	Parliament approved a new Ministerial post for Special Assignments for eGovernment Affairs.	To coordinate the development and implementation of policies relating to eGovernment.		
01 Jan 2005	Secretariat for eGovernment Affairs (ePārvalde) is established.	Takes over the functions of the IS Bureau and becomes responsible for e-Government policy development, implementation and coordination.		See www.eps.gov.lv
15 Jun 2005	Government agreement signed with Latvijas Pasts and Lattelecom regarding introduction of digital signatures.	To develop the infrastructure for the use of digital signatures, the implementation of digital signatures and of a set of eServices requiring the use of digital signatures.	Ministry of Transport and the Secretariat for eGovernment Affairs	
13 Sep 2005	New guidelines for the development of the Information Society in Latvia.	To achieve compliance with the EU Lisbon Strategy objectives and the European initiative i2010.		

29 Sep 2005	eGovernment Action Programme 2005-2009.	Sets the priorities and direction for the future development of State and municipal information systems and eServices.		
05 Oct 2005	Concept on eProcurement	To implement an electronic public procurement system, streamlining public purchases and reducing bureaucracy, administrative costs and the risk of corruption.	All Ministries	
19 Oct 2005	National Lisbon programme for Latvia	Lists directions and objectives for Information Society development in Latvia	All Ministries	
27 Dec 2005	Broadband Development Strategy for 2006-12 Concept	Ministry of Transport as responsible institution plots actions to improve the broadband penetration in Latvia.	Ministry of Transport	Monitoring and coordinating market development
2006	National Development Plan	Addresses development issues for whole country, addressing regional issues	Ministry of Regional Development	Is on the base of all other policies.
2006	Draft of National Strategic Guideline Document			
2006	State Culture Policy Guidelines, Draft			
4 July 2006	Concept of Centralized IS Management	eSecretariat takes on responsibility of managing various state level IS	eSecretariat	State level IS (IVIS; IVIS IM; DAUKS; VISR; VPILS)

Source: compiled by the authors 2007

Generally, Latvian eGovernment policies have been developed to reflect standard EU policies and wherever possible, international best practice has been incorporated. Particular influences include: the WISI Geneva and Tunis Declarations, the EU Lisbon Strategy and the i2010 initiative, as well as the EU programmes e-Inclusion and e-Accessibility.

Local government: As already mentioned in Chapter I the structure of local government in Latvia is fragmented with may small rural municipalities – 70% if them have a population of less than 2000. The principles of eGovernment support the government's consolidation policy and will be particularly significant in the more remote regions of Latvia where local services infrastructure currently is limited.

The Ministry of Regional Development has started the process of introducing eServices in local municipalities. With co financing from ERDF the Ministry has started implementation of an eService system. The plan is to create modern municipal infrastructure, which will allow e-document circulation, eService standard. The first action was the creation of a centralized eService portal for municipalities, which would set the standards and, with help of one stop agencies, would then offer a set of services. The main conclusion of the seminar of municipal representatives in early 2006 was that

the effective use of IT requires a complete reorganization of local administration to deal with this issue as well as a dedicated unit in the Ministry to ensure implementation. Compared with the current situation, the aims and principles have to be formulated very clearly. Municipalities need to comply fully and consistently with policies and procedures specified by the Ministry and to provide for mechanisms that would enable effective public-private partnership projects. To support that, with help from Regional Fund, the Ministry is developing a network of 10 Support Competence centres for rural municipalities. The first one opened in the city of Bauska in 2006.

The Internet portals of the new planning regions and the general portal of the municipalities are presented below:

          Rīga region development agency www.rigaregion.lv

          Rīga region development council www.innovation.lv/Riga_region

          Kurzeme planning district www.kurzeme.lv

          Vidzeme planning district www.vidzemes-regions.lv

          Zemgale planning district www.zemgale.jrp.lv

          Latgale planning district www.latgale.lv

          Local municipalities in Latvia www.lps.lv

In 2005, the Government adopted the eGovernment Action Programme for 2005-2009, setting the priorities for future development of state and municipal information systems and eServices. The Government also adopted a Concept on eProcurement whose aim is to reduce the risk of corruption and make public sector procurement more cost-efficient.
In January 2006 the Agency for eProcurement was established. It reports to the Minister for Special Assignment of eGovernment and has a mandate to provide state and municipal institutions an opportunity to use eProcurement for commonly used goods and services, to reach agreements and monitor the delivery.

eGovernment is a relatively new policy concept in Latvia and the eSecretariat responsible for coordination of eServices in general has existed only since January 2005. As a result there is not yet a publicly available formal assessment or evaluation of the development or implementation of eServices.

II.2.2. Key government strategies and policies for eHealth

eLatvija was the first national strategy document where eHealth planning was mentioned. The eLatvija strategy document was approved by the Cabinet of Ministers in 2000 to define the strategy for ICT and information society development in Latvia. This document was updated in 2005 by setting new targets for the planning period up to 2008. The section on eHealth lists the main development targets, but detailed strategy development is assigned to Ministry of Health.

In 2005 the Latvian Government and Ministry of Health set eHealth development as a priority. The Ministry of Health established an IT Advisory Council for supervising and coordinating IT development in the healthcare sector.

The most recent and very important healthcare strategies that have been developed since 2005 have been described in section I.4 and those that represent the next development phase are:

- Human resource development in healthcare;
- Development programme for ambulatory and in-patient healthcare providers;
- Development of ambulance and emergency services;
- eHealth Strategy.
- eHealth Action Plan

The **eHealth Strategy** was developed in 2005 and approved by the Cabinet in July 2006. The strategy document identifies the need for more data and access to that data by both users of and providers to the healthcare system

The eHealth strategy includes the need for the following types of information systems (IS):

a)   for healthcare specialists: patient data; laboratory data; radiology; pharmaceuticals; clinical research; management information systems, decision support systems for diagnosis (e.g. OrphaNet: http://orphanet.infobiogen.fr); telemedicine; training; library resources;

b)   eHealth for patients: informative sources about healthcare institutions, services and portals; public information points (e.g. as in the UK); crisis portal (e.g. as in APHA in Finland); medical services portals (e.g. for renewing prescriptions electronically (e.g. www.sundhed.dk), nurse consulting via Internet or telephone (e.g. www.nhs.uk), doctors' own websites for their patients, homecare tele-consultations (e.g. for diabetes, asthma and other patient monitoring systems));

c)   for institutional management and administration: making work schedules; for registration and personnel management; logistics; management information systems (MIS); hospital internal bookkeeping, stock control and payroll; patient administration system.

eHealth Action Plan

The eHealth Action promised for June 2006 was eventually delivered in February 2007. The seven main priorities or tasks are listed below:

- the establishment and implementation an electronic health card and an electronic European health insurance card
- the computerisation of healthcare institutions and the introduction electronic healthcare records, including the development of an integrates IS for healthcare providers
- creation of a unified emergency and disaster service supported by a modern operational information system
- development of online diagnosis and telemedicine
- development of e-prescriptions, e-referral and e-booking
- promotion of e-awareness among the public
- development of an eHealth administration

This summary does not do justice to the detail of the Action Plan – thus under the first priority there are more than 20 individual measures, and a similar story is true for the other six directions. Many of the measures are marked as being implemented by 2013, e.g. the development and implementation of the electronic health card information system, and this means that in practice full implementation is likely to be later. An interesting feature of the plan is that a number of measures are pilot projects e.g. under the second priority on the introduction of computerisation and electronic healthcare records there is a 4.3 million LVL (nearly 7 million euros) pilot project envisaged at one of the major state hospitals (also to be implemented by 2013). This suggests rather a rather sensible 'learning-by-doing' approach. However, the plan comes with a warning – full implementation is contingent on the availability of funding and this is by no means assured.

Other healthcare strategy documents:

- The first Public Health Strategy was drafted in 1996, which defined the framework for further reforms in the healthcare system in Latvia.
- Public health strategy action plan for 2004 – 2010;
- Mother and child healthcare strategy from 2001;
- Concept of healthcare financing (2002; original approved in 1996).

The remaining tasks for completing effective healthcare reform are large and challenging, mainly because of the large cost of implementation. For example, consolidating seven hospitals in Riga from the current 20 is estimated to cost up to EUR 300 million, while the total cost of implementing the healthcare reform master plan for Latvia is estimated at EUR 640 million. eServices in healthcare would contribute greatly to the effectiveness of the new structure and to making health services and information accessible and would eventually save costs.

II.2.3. Use of best practice models in policy development and the influence of i2010

Driven primarily by Latvia's accession to the EU in 2004, recent governments sought to base policy development on EU norms and best practice examples from EU member states. EU best practice has always formally been the norm adopted though in reality implementation has normally followed funding. Thus, in the context of electronic data use, in 2000 Latvia adopted a Law on Personal Data Protection, which was fully compliant with the EU Data Protection Directive and Latvia updated its National Programme on Informatics to reflect the eEurope Action Plan adopted by the EU in June 2000.

In 2002 Latvia adopted a Law on Electronic Documents, which transposed EU Directive 1999/93/EC on electronic signatures and documents to take into account the local environment and needs in Latvia. In 2004 Latvia adopted a Law on Information Society Services that was based on the EU Directive 2000/31/EC on the provision of electronic information services.

Latvia's eGovernment Action Programme 2005-2009, adopted by the government on September 2005, is based on Latvia's eGovernment Policy and on the Public Administration Reform Strategy 2001-2006.

- The programme is closely aligned with the eEurope 2005 Action Plan and the new EU strategy "i2010: a European Information Society for growth and employment" adopted by the European Commission on 01 June 2005.

- The basic action lines of the programme are: to improve state and municipal information technology infrastructure and collaboration between state registers, to create new channels for government services based on the one-stop agency principle, to develop new eServices – primarily those most required by citizens and business, to improve the quality of public services using ICT solutions.

- To create new state information systems and to develop the information systems in municipalities. Financing for the eGovernment Action Programme comes from the state budget and co-funding from EU funds.

- The programme emphasise modernisation of public administration by making use of the opportunities offered by information and communication technologies (ICT) and e-business methods, to improve the quality and effectiveness of public services, as well as to increase civic participation in public affairs. What is envisaged is better government (improvement in the quality of public services), cheaper government (improvement in the effectiveness of administration and reduction of costs) and more democratic government (increased societal participation in government)

The specific goals of the 2005-2009 eGovernment Action Programme are:
- Gradual enabling of public eService provision.
- Implementation of e-democracy mechanisms (elections, referendums, polls and political communication on the Internet).
- Integration of services according to people's life events, using one-stop agencies, and call centres, as well as electronic means of communication.
- Transformation of state administration institutions into customer-oriented organisations, substantially improving their work efficiency.

- Alignment of Latvia's administration institutions with European Union structures and cooperation with other countries.

eService development in Latvia is broadly based on the examples of Estonia, UK and Austria For telemedicine Latvia has benefited from international cooperation with regional experts in Nordic countries.

No formal assessment or evaluation whose results have been made public of the international best practice adoption in Latvian government policies has been conducted.

II.2.4. Major projects accomplished since 2004 and others currently under preparation

2000 saw the start of a major development project for municipalities called the "Creation of Municipal IS". The state investment programme provided EUR 3.0 million with municipal co-financing of EUR 1.6 million. The project provides Internet access to 550 municipalities and includes a centralised municipal IS.

It is difficult to identify specific projects that have had a special impact on e-developments in Latvia. One umbrella is the National Programme for ICT Development the aim of which is to improve and develop existing state information systems by integrating their individual operations into a unified state system, to ensure online availability of public services and to further develop and optimize eGovernment effectiveness. Currently many databases of government institutions are not compatible with one another. With an integrated system of government databases, work efficiency will significantly improve, the administrative burden will decrease and service quality will also improve.

Creating an Integrated State IS (IVIS) marks what could be defined as "Back Office reform". State IS law states that state IS should be integrated and data of the same person should be entered and registered in only one place. This creates the need for databases content to be tidied up, to improve data quality and to improve technological solutions.

Other projects that have been undertaken and are in stage of implementation are:
- IVIS IM – Income declaration registers integration module;
- DAUKS – Electronic Document Circulation management and monitoring System;
- VISR – State IS Register System;
- VPILS – State and Municipal Office Administration

Integrated data system and task manager usage will reform the service approach in the direction of more user friendliness. Several customer service centres have been created across state institutions with the aim of saving people from waiting in long queues in several government offices and going from one office to another. The document or application should be received once and then circulated internally. This could be classified as "Front Office Reform".

ERDF activities for 2005 include a variety of projects, and some of them are in the ICT area. All sectors need to improve their ICT infrastructure and systems, therefore within many non-ICT projects there is an ICT component. The National programme for ICT Development was approved by the Cabinet of Ministers in September 2005. It includes the "eGovernment portfolio" project, which aims to improve information exchange capability within and between 11 state level databases. Total project cost is EUR 2.1 million and the eSecretariat is responsible for implementation. There are projects for further computerization of schools, providing Internet access (EUR 1.5 million), centralized library information system improvement by increasing ICT access for residents, training staff and developing library portals. The project size is EUR 1.2 million. There are other smaller projects which by themselves are significant, because they raise the profile of eServices outside of the capital in rural areas. An example is the e-Vidzeme project aimed at improving eServices in the Vidzeme region and costing EUR 831 000.

The first pilot project for eServices and customer service outside Riga was launched in April 2005 in the southeast town Jēkabpils, in the Zemgale region. The project includes a One Stop Agency and according to local public opinion has been a success. (See http://www.jekabpils.lv)The Jēkabpils Council has been the most advanced town in the project. It started in 2005 with an Internet portal and has continued in 2006 by implementing a range of eServices. The aim is to develop a new system as part of the state system, to allow access to public services, and to optimize local regional and town governance. The project costs EUR 170 000 and has been financed 75% by the ERDF, 15% from the municipal budget and a 10% state contribution.

eVidzeme is the largest regional eGovernment project to date. It started in 2005 and will continue through 2006. The purpose of the project is to provide broadband access in 109 schools and 97 local public libraries and to upgrade the existing 206 Internet connections in Vidzeme. The project includes installation and upkeep of the Internet access network among the region's six main towns and their respective surroundings, provision of wireless access to remote areas. Training has been provided for IT staff and users in schools and libraries. The total cost of the eVidzeme project is EUR 1.2 million.

In 2006 the Regional Ministry launched a special web server for electronic information exchange between municipalities. The server is has its own eDocument circulation and authorisation system and access codes. The activity is based on the pilot project of 10 support centres, which have been created in the more active and ICT able municipalities. The advantage of this initiative is that it provides everyone with a common standard and includes functionality for on-line document tracking. eDocument circulation will later be compatible with DAUKS, the state Electronic Document Circulation Management and Monitoring System. The launch of the first 10 support centres is expected in the first half of 2007. Support centres are evenly spread across the country and will provide on-site ICT assistance and training. Other regional municipalities, that were more passive at the beginning of the pilot project and did not enrol, are now eager and queuing for the next project round to get their own support centres. Financing comes mainly from the municipality but also from the Ministry.

In the area of eHealth the State Blood Donor centre has undergone a major reorganization with the creation in 2005 of a nationwide database of blood stocks and donor database. The project cost was EUR 300 000 and provides centralized testing facilities and improves quality assurance.

In process is the development of the National Emergency Response Centre, which is expected to improve emergency service infrastructure.

The 2005 National Programme provided financing of EUR 133 000 to create a Database of Handicapped Persons and information system of handicapped and state money was allocated to support the creation of database of Medical Technical Aids.

There have been some new private initiatives amongst the major state hospitals in Latvia relating to electronic patient records (EPR). Good examples of current developments in EPR in Latvia are:
- The Pauls Stradiņš Clinical University Hospital has created and submitted to the Latvian Ministry of Health a request for financing a project on an electronic information system. The system will create electronic patient health history records, accumulating visual and clinical diagnoses records and producing electronic statements and summaries.
- The Children's Clinical University Hospital has an electronic patient health record system and an information system that is used to support the hospital's healthcare services. The hospital is developing the system further to include a visual file database.
- The Hospital of Traumatology and Orthopaedics has started the implementation of an electronic information system to support healthcare and functionality and in the medium term to introduce electronic patient records.

In the field of telemedicine, BITNET, the Baltic International Telemedicine Network (1999-2002) was launched in 2000 in Latvia with the arrival of equipment from Uppsala University Hospital (Sweden). Among a network of partners in Sweden, Estonia, Latvia and Lithuania, the project included 23 hospitals, 7 industrial partners, and 4 clinical entities in Clinical Neurophysiology, Diagnostic Radiology, Radio physics/oncology and Videoconferences. Initially the Swedish partner was sponsoring the project. In 2002 according to an agreement the Latvian side should have contribute some money, but this did not happen. Therefore the international part died. Presently the network still operates and Stradiņš University Hospital offers free support to Ventspils and Liepāja town hospitals. The business part of this project is still not settled. In 2006 Preiļi town hospital initiated a similar smaller scale project using support from Stradiņš University Hospital in translating x-ray diagnosis for the Latvian hospitals at Ludza and Preiļi and the Lithuanian hospitals at Kaunas and Zarasai. There was also an initiative to create a series of telemedicine centres and the last one was approved in 2005 but it did not actually start because of a lack of financing.

In the eHealth development programme for 2005 to 2008, the programme includes a statement on the importance of developing telemedicine services and the next phase will consider how to roll out a system that would cover all the main population centres in Latvia.[17] However, electronic image processing from digital equipment in ambulances, hospitals and policlinics across the country needs networks and servers that can and receive and handle the data, and presently availability is limited. The Emergency and Ambulance service centre have been developing a network project (with Nordic country assistance) based the national diagnostic database at Stradinš University Hospital in Riga. A network for transmitting data will be created involving all the regional hospitals that provide emergency treatment.

II.3   Legal framework supporting eGovernment and eHealth applications

II.3.1   eGovernment legislation

The Law on State Information Systems, adopted in May 2002, provides a legal framework for the operation of state information systems and for the cooperation of involved organisational units. The aim of the Law is to ensure the availability and quality of the information services provided by state and local government institutions through the state information systems. The implementation of the Law on State Information Systems is supported by the following: Regulations of the Registration of State Information Systems (2 August 2005), Technical Requirements for State Information Systems (11 October, 2005), General Security Requirements for State Information Systems (11 October, 2005).

II.3.2   Freedom of information legislation

The Law on Freedom of Information (1998) was adopted by the Latvian Parliament on 29 October 1998 and ratified by the President in November 1998. It guarantees public access to all information held by state and local government institutions in "any technically feasible form" not specifically restricted by law. Public bodies must respond to requests for information within 15 days. Information can only be restricted if there is a specific law doing so; the information is for internal use of an institution; it is a trade secret not relating to public procurement or is information about the private life of an individual; or if it concerns certification, examination, project, tender and similar evaluation procedures. Appeals can be made internally to a higher body or directly to a court. The law was amended in 2003 to give the State Data Inspectorate oversight authority starting in January 2004.

II.3.3   Data protection/privacy legislation

The Law on Personal Data Protection (2000) was adopted by the Latvian Parliament on 23 March 2000 and came into force on 1 January 2001. The law is based on standard fair information practices and is fully compliant with the EU Data Protection Directive (95/46/EC). The aim of this Law is to protect the fundamental human rights and freedoms of individuals, in particular the inviolability of

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[17]   http://www.telemed.lv/eng/main-frame.html

private life, with respect to the processing of personal data. Application of the Law is overseen by the State Data Inspectorate.

II.3.4   eCommerce legislation

The Law on Information Society Services (2004), transposing EU Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, was passed by the Latvian Parliament on 4 November 2004. This Law governs the provision of electronic services and the conditions to be observed by eService providers, requirements regarding the protection of consumer rights, and responsibilities of eService providers.

II.3.5   eCommunications legislation

The Law on Electronic Communications (2004) was adopted by the Latvian Parliament on 28 October 2004 and entered into force on 1 December 2004. The aim of this Law is to promote and regulate the provision of electronic communications services, transposing the EU's new regulatory framework for electronic communications. The law provides for forms of various electronic networks, including both public and private electronic networks. The law also provides for duties and rights of providers, subscribers, and users of electronic networks.

II.3.6   eSignature/eIdentity legislation

The Law on Electronic Documents (2002) was adopted by the Latvian Parliament on 31 October 2002 and came into force on 1 January 2003. It transposes the EU Directive for electronic signatures (1999/93/EC) and defines the legal status of electronic documents and digital signatures. The Law sets an obligation for state and local government institutions to accept electronic documents from individuals and legal entities no later than 1 January 2004. This was not met because of the lack of certification service providers. However, on 15 June 2005 the Latvian Government signed an agreement Latvian Post and Lattelecom on the introduction of qualified digital signatures, which should pave the way for the development of eServices requiring the use of digital signatures.

II.3.7   eProcurement legislation

Public procurement is currently regulated by the Law on Procurement for State or Local Government Needs (July 2001, amended in June 2004) and the Law on Procurement for Public Services Providers Needs (October 2004). The latter implements Directive 2004/17/EC and thus regulates the use of electronic communication means in the public procurement process for the utility sector

II.3.8   eDocument legislation

eDocument legislation was approved in November 2002, with several amendments in 2004. eDocument law regulates the use, acceptance, storage etc. of e-documents and has to adjust to the context of the new eService approach in state services and document circulation within an integrated state IS system.

The introduction of eServices bring significant changes to service provision and generates new risks of information misuse, because much more personal information is concentrated in databases with more parties having access. The government is reviewing the new risks involved with the intention to address the issue with legislation.

II.3.9   eHealth legislation

The <u>Law on Local Governments</u> (1993) stated that local authorities (districts and municipalities) are responsible for the organization of healthcare in their area and are to provide at least a portion of the financing required for healthcare.

The <u>Law on Basic Care</u> defined a variety of primary and secondary healthcare services that are to be offered to all residents of Latvia. Originally such care was financed from local budgets and local

sickness funds, which were consolidated in 1997 into regional sickness funds. From 2005 the sickness funds formally became regional branches of VOAVA.

The <u>Law on Medical Care</u> (1997) regulates the supervision and provision of healthcare. In 1998 the law was amended to include patient rights as well as defining the responsibilities of healthcare providers. Subsequently, the Patients Rights Office was established in 2001.

The <u>Law on Pharmaceuticals</u> (1993, 1998 and 2000) regulates activities in the pharmaceutical sector to ensure that the pharmaceutical products manufactured, distributed and sold in Latvia are safe, effective and of high quality. .

The <u>Law on Physician Practices</u> (1997) regulates the responsibilities and rights of medical practitioners and recognises that medical practice is a specific legal form of enterprise and an independent profession allowing for the establishment of independent practices. The law also states that family doctors form the basis of the healthcare system in Latvia.

<u>Financial reform</u> began in 1993 with the establishment of the Central Account Fund within the Ministry of Welfare, which was renamed in 1995 as the State Sickness Fund and then in 1998 as the State Compulsory Health Insurance Agency (VOAVA). In addition to managing healthcare payments, VOAVA was assigned the task of promoting and managing the reform of healthcare financing in Latvia.

Cabinet of Ministers Regulations on Healthcare include:
- Regulation on healthcare organisation and financing (1999) which defines the rules specifying the source and management of healthcare financing.
- Regulation on the payment system for medical and social care personnel
- Regulation on the system for reimbursement of pharmaceuticals and medical equipment
- Regulation on pharmaceuticals pricing principles

The first detailed eHealth development strategy document (followed by an Action Plan in early 2007) was approved by the Cabinet of Ministers in July 2006.

II.4.   ICT infrastructure

As already mentioned in chapter II.1.1 the State Information Network Agency (VITA) operates the 'State-Significant Data Transmission Network' (VNDPT), a nationwide network serving government institutions throughout Latvia, although not on an exclusive basis, but in competition with other providers, e.g. Lattelecom.

At another level, the Latvian state currently has 157 significant databases in various departments, ministries and institutions.

By the end of 2005 the main tasks of national data collection in various registers, IS and databases and their maintenance had been implemented, including assurance of data quality, security and timely updating..

The strategic target (set already in the late 1990s) to connect together various existing state databases has not, however, yet been achieved and remains a key goal. Database integration has been part of most government IT strategies, like the national programme "Informatics" in 1998, updated in 2000; "Megaproject" of state IS from 1998; the programme "e-Latvia" from 2000; and the eGovernment Concept from 2002. Data integration is a priority and has become a pre-condition for providing a range of good quality eServices.

Presently several software systems are used for database architecture and management At the time of their design and implementation there was no unified approach across the different user groups and consequently their interoperability has been weak. However with recent ICT progress, user training and hardware and software upgrades, all of the main data centres now have sufficient infrastructure, capacity and communications access. The eSecretariat is currently working on the creation of a Service Oriented Architecture (SOA) to manage effective user data exchange and availability among databases. An advantage of Latvia's situation is its small scale, and major sector data are captured centrally in one sector database, and technologies and systems applied are relatively new and advanced, which makes it easier to adapt them for further integration.

In 2005 the eSecretariat formulated the base structure and principles of a new State Integrated IS (IVIS), which, will be the new eService infrastructure solution. IVIS is based on the following principles:

1   Service oriented architecture (SOA);

     The main components of SOA are:

Components	Users	eService processes	Infrastructure	IS services
Main Standards	HTML	BPEL, BPMN	WS-Security UDDI	WSDL; WSIF; SOAP; JCA; XML

2   Many eService providers (decentralised solution);

3   Three centralised catalogues (eService catalogue, IS service catalogue, XML data exchange catalogue);

4   Centralised standards (eService standard, IS service standard, SOA standard)

5   Many eService access points (state and municipal portals, institution web pages, direct customer service in municipalities, etc)

The purpose of the Integrated State IS (IVIS) is to provide the infrastructure for effective eServices development by enabling the integration of the currently separate institution databases. Documents that regulate the development of the new State Integrated IS produced by the eSecretariat are:

- State Information System Infrastructure Development Strategy;
- eService Development Guidelines;
- eService standards;
- IS service standards;
- Metadata and eService identification standards

In early 2006 the eSecretariat also produced XML framework guidelines for IVIS development, the guideline document is based on:

1. Standards LVS 68:1996, software requirements guide.

2. Metadata and eService identification standard.

3. eGMS v3.0 Application Profile and Binding. XML framework

4. eGovernment framework Guidelines for XML

IVIS is proposed as an integration platform for institutions that have created and maintained their own registers and databases. Institutional databases have been set up, developed and optimized with the purpose to meet the needs of a particular institution and therefore data was not originally intended to

be shared with other institutions. The concept of IVIS will enable each data-holding institution to create their own service IS for integration in IVIS. The integration platform is illustrated below.

The document that formulates and regulates the IVIS infrastructure system presented in Figure 8 was produced by the eSecretariat in March 2006. The main guidelines for the IVIS concept are based on a number of international best practices, the main ones of which are from the sources listed in Box 1

The IVIS project started in 2006. The steps that the IVIS project provides are: formulation and creation of the system architecture, defining standards, creating the necessary software and creating a unified users' interface in the national eService portal (www.latvija.lv). The portal has been launched but at the time of writing, it was not yet fully operational. In November to December 2006 a pilot project was launched: "Who is registered as living on my property" which involves four national data bases – the National Address Register, the National Land Book, the Cadastral Register and the Citizens Register. After a public tender a private company has been contracted to design and create the system and to provide hosting and maintenance.

Figure 7   IVIS infrastructure layout
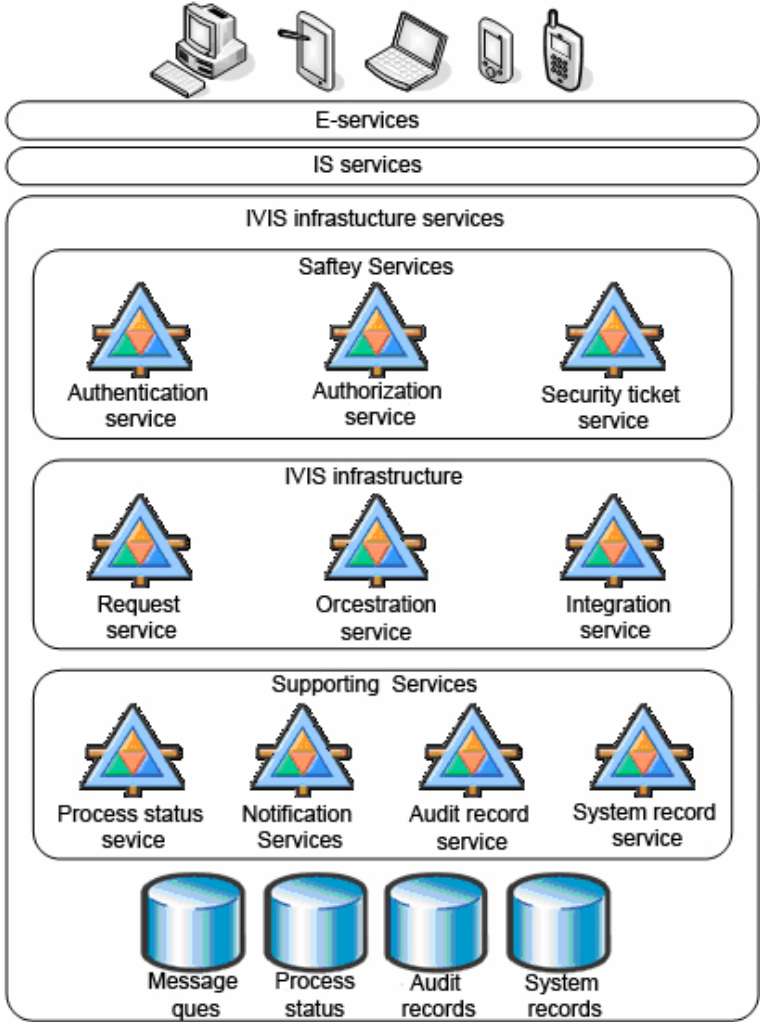
Source: http://www.eps.gov.lv 2006

In July 2006 Cabinet of Ministers assigned the eSecretariat to manage the following:

- IVIS – Integrated State IS, providing database integration tool and unified interface;
- IVIS IM – Income declaration integration module;
- DAUKS – Electronic Document Circulation Management and Monitoring System;
- VISR – State IS Register System;
- VPILS – State and Municipal Office Administration (under construction)

Box 1: International practices that have been used when creating Integrated State IS

1. E.Tambouris, E.Spanos, G. Kavadias „Platform and Network Architecture Functional Specifications." - IST PROJECT 2000-28471, An Integrated Platform for Realising Online One-Stop Government, 2002. (http://www.egov-project.org/deliverables.htm).

2. E. Tambouris, E.Spanos, G. Kavadias "Services and Process models functional specifications." - IST PROJECT 2000-28471, An Integrated Platform for Realising Online One-Stop Government, 2002. (http://www.egov-project.org/deliverables.htm).

3. Danish XML Committee. "Handbook for Standardization" 2003. (http://www.oio.dk/dataudveksling/OIOXML/publikationer/CookBooks).

4. Udgivet af den faelles offentlige XML komite'. "Vejledning i implementering af integrationsprojekter.", 2003.

5. (http://www.oio.dk/dataudveksling/OIOXML/publikationer/CookBooks).

6. Connected Government Framework. Architecture and Design Blueprint." Microsoft Corporation., 2003.

Since 2005 eService development has been addressed with a much clearer strategy and now, with the attempt to integrate various registers and a greater emphasis put on the front office as a customer service point, the state administration system is approaching deeper change and state institutions will have to change their approach in other areas too. Possibly, also because the English terms "front office" and "back office" do not translate directly in to Latvian, there has not been an explicit discussion about reforming such aspects; nevertheless, eService development within the framework suggested by EU experience is bringing a new customer-centred service approach along with eGovernment.

Another important aspect of eService infrastructure is broadband access. The Ministry of Transport in 2005 produced a "Broadband Development Strategy 2006-2012", which considered the possibility of using different technologies for providing broadband: xDSL (Digital Subscriber Line) with all the modifications since 2002 (such as ADSL, SDSL, HDSL with 1-2Mb/s, cable modems, plugged into cable TV network, wireless access via radio channels (R-LAN, W-LAN, WiFi), Fast Ethernet, 3G mobile technologies UMTS, Satellite technologies, power line communication. Technologies are developing in parallel and complementing each other:, optical cable is optimal for providing quality broadband signal; the fastest to set up are wireless radio access networks; mobility of users is ensured by 3G mobile networks; but digital TV covers wide areas and numbers of people.

A major issue in broadband development in Latvia is limited access in rural areas, where the economic return on investment is lower.[18]

With financial support it is planed to achieve 85-95% territorial broadband access by 2012.
Several large state institutions have their own electronic service networks: Latvian Railways, Latvenergo, the LV Radio Transmission Centre, VITA and Lattelecom.

To address the various challenges of broadband development, the Ministry of Transport is planning to:

- Identify and plot problem areas for broadband penetration;
- To support new technologies (e.g. WLAN; Satellite TV; electricity supply network; mobile 3G; digital CTV; TV over ADSL; Voice over IP)
- To support multi channel and public access point development;
- To support national "backbone"; regional and municipal, academic network development;
- To coordinate and support local initiatives for infrastructure development;
- To continue providing broadband access to state institutions, schools, healthcare providers, archives, museums, libraries and academic networks;
- To provide eSignature infrastructure development;
- To support state intervention and Structural Funds usage for infrastructure development.

ICT Infrastructure in Healthcare

Practically all hospitals in Latvia, either state or municipal owned, have Internet access and can log in to the VOAVA DPS data network. A key driver in achieving this is that Internet access is a pre-condition for receiving state financing in the form of reimbursing services provided to patients. It speeds up the process so it is in everyone's interests to have efficient eReporting. The DPS system has its own fibre optic infrastructure covering all of Latvia and consists of a core system and 14 modules.

Some hospitals have their own website and 90% have at least an e-mail address. The share of all healthcare providers that have e-mail is 13.9 % and 47.2% of the total are located in Riga. The Healthcare Registry within the Agency of Health Statistics and Medical Technology has 3647 registered healthcare providers (as of August 2006) and 508 providers have an e-mail address of which 240 are in Riga. No data is available on broadband Internet access for healthcare providers.

Some bigger hospitals have had their own initiatives for introducing IS. For example the Hospital for Traumatology and Orthopaedics has a sophisticated EPR system and is developing a system that will accumulate visual and clinical diagnosis records and produce electronic statements and summaries. Similarly, on their own initiative both the Children's Clinical University Hospital and the Pauls Stradiņš Clinical University Hospital have a proprietary EPR system. Also the Pauls Stradiņš Clinical University Hospital is a member of the BITNET telemedicine system.

All of the pharmacies in Riga, 60% of rural pharmacies and one third of medical practices use computers in their daily activities. However outside of Riga general IT usage level is lower because there are fewer computers, less broadband connections and a lack of user training. In terms of electronic systems, pharmacies mainly use product-selling systems, while medical practices use simple

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[18] According to the EC "the implementation of broadband technologies in the rural areas in Latvia is facing two principal problems … (i) households are geographically scattered rendering the necessary initial investments in rural areas much higher than in the territories with dense population (cities), and (ii) the inhabitants of rural areas have generally a lower income and thus are unable to pay for the actual costs of the service. As a result, broadband access operators ar not interested in investing" http://ec.europa.eu/comm/competition/state_aid/register/ii/doc/N-118-2006%20WLWL-en-07.06.2006.pdf

stand-alone patient registries and accounting systems. These systems are simple and are not standardized and are not designed to interface with other eHealth registers.

However, along with the national eHealth development strategy there is a plan within the next two years to launch an e-prescription system. That requires the creation of a number of new registers to be and the integration of existing pharmaceutical databases. It is planned that a PPP approach will be used and this will based on the Association of Pharmacists which represents the private sector and will provide the information flow for medicine related registers.

The largest hospitals have introduced their own resource and administrative management systems but mostly only as enterprise software solutions rather than fully functioning eHealth solutions. The most common computer use in hospitals is to register patients or to prepare hospital statements at the end of each period of hospitalization as well as to support the cost settlement process with VOAVA.

A pilot project in 2006 in the small town of Jekabpils (population 26,000) has indicated that the implementation of a new IS within a hospital soon identifies the need for the reorganisation of the whole hospital, affecting staffing, equipment, buildings, services and financing. This significantly broadens the scope and costs of eHealth implementation projects.

As mentioned in section II.2.4, in the area of telemedicine there is the BITNET project where some hospitals are linked to the Pauls Stradiņš University Hospital. An active user is Ventspils City Hospital, however activities are not formalised commercially because consultations are provided free of charge.

However as a general conclusion, other than a small number of Internet-based portals providing healthcare counselling using VOIP applications such as Skype,[19] currently in Latvia real-time electronic interaction services offered within the context of eHealth are very limited.

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[19] http://attiecibas.lv/

II.5. Detailed eGovernment service description

eServices are new for most of the population in Latvia. Early in 2006 the eSecretariat conducted an awareness survey of available services. A summary of the findings is presented below in Figure 9.

Figure 8   *Awareness and usage of eServices in Latvia*
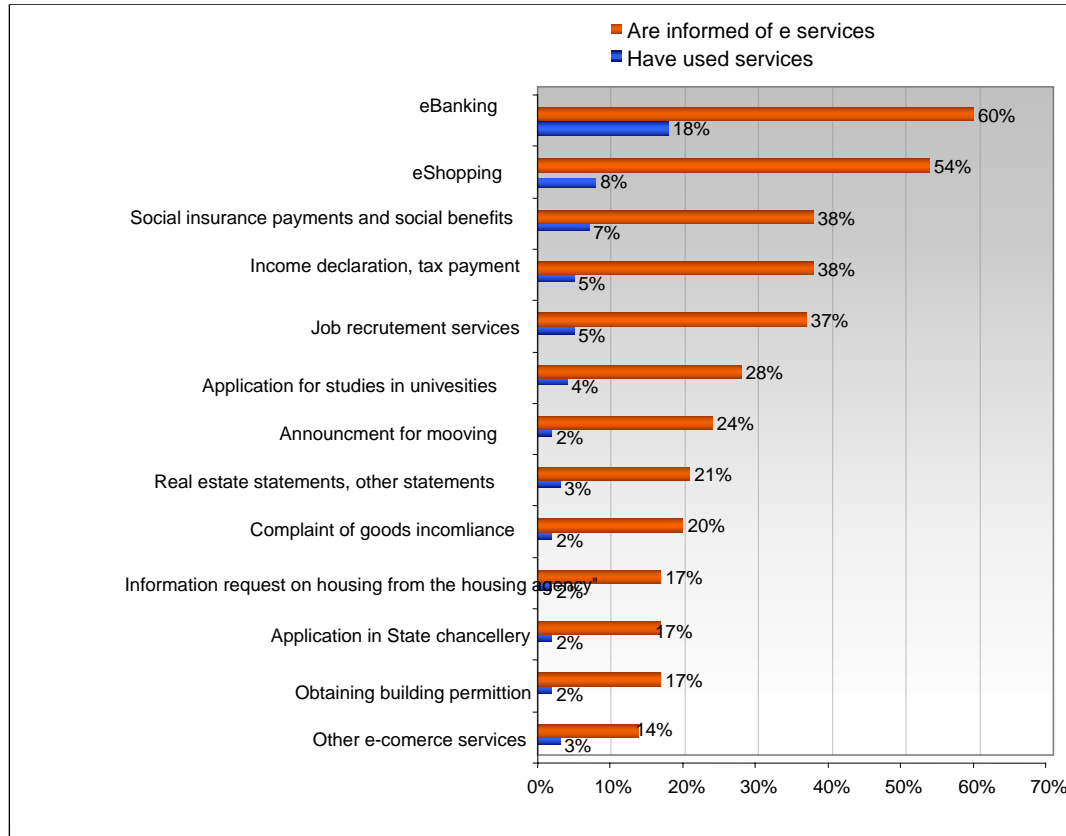
During 2005 the eSecretariat conducted an analysis of the level of technical and operational sophistication of all the systems required for providing eServices in Latvia. While the ministries and agencies responsible for the various systems are working towards effective central data integration required for providing a comprehensive range of eServices, the results of the performance analysis from 2005 are shown below in Table **24**. For example, in 2005 the State Revenue Service (VID) was assessed as operating at the third level of sophistication (i.e. two-way interaction: processing of forms, including authentication), and in 2006 the VID has already advanced to the fourth level (i.e. Transaction: full case handling, decision and delivery (payment). eService sophistication levels are defined by the following descriptions:

        Stage 1 - Online information about public services
        Stage 2 - Interaction - downloading of forms[20]
        Stage 3 - Two-way interaction: processing of forms, including authentication
        Stage 4 - Transaction: full case handling, decision and delivery (payment)

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[20]   In some cases the same eService is provided by more than one institution and the e-level differes therefor particular service can have 2nd and 3rd sufistication levlel at the same time.

Table 24   *eGovernment service sophistication evaluation in 2005*

Nr.	eService	Web address of provider	Sophistication Level				
			0.	1.	2.	3.	4.
Public services for citizens							
1.	Income taxes: (declaration and notification of assessment)	www.vid.lv www.vid.gov.lv				▓	
2.	Job Search services offered by the State Employment Agency	www.nva.lv				▓	
3.	Social security benefits:				▓	▓	
	a. Unemployment Benefits	www.vsaa.gov.lv			▓	▓	
	b. Family allowances	www.vsaa.gov.lv .			▓	▓	
	c. Medical costs (reimbursement or direct settlement)	www.voava.gov.lv			▓	▓	
	d. Student grants	University portals			▓	▓	
4.	Personal Documents (passport and driving licence):			▓			
	a. Passport	www.pmlp.gov.lv		▓			
	b. Driving License	www.csdd.lv		▓			
5.	Car registration (new, used and imported cars)	www.csdd.lv		▓			
6.	Application for building or planning permission	Municipality portal		▓	▓		
7.	Declaration to the police (e.g. in case of theft)	www.vp.gov.lv		▓			
8.	Public libraries (availability of catalogues and search tools)	www.izm.gov.lv www.kis.gov.lv		▓			
9.	Certificates (birth, marriage, death): request and delivery	Municipality portal	▓				
10.	Enrolment in higher education institution or university	Universities' portals			▓		
11.	Announcement of change of address	www.pmlp.gov.lv			▓	▓	
12.	Health related services (interactive advice on the availability of services in different hospitals; appointments for hospitals)	www.voava.lv www.vm.gov.lv		▓			
13.	Other services						
13.1.	Complaints and suggestions for corruption conflict of interest cases	www.knab.gov.lv		▓			
13.2.	Application for delivered service or goods not compliance with signed agreement	www.ptac.lv			▓		
13.3	Resident application in State Chancellery	www.mk.gov.lv				▓	

Nr.	eService	Provider's web address	0.	1.	2.	3.	4.
13.4.	State public services: *Application for certifying statements (izziņas) *Procurement application *Sate service officers job candidacy confirmation	www.vcp.gov.lv				X	
13.5.	Information request for housing	www.ma.gov.lv			X		
13.6.	Housing monitoring data	www.ma.gov.lv			X		
13.7.	Request of data for registration purposes	www.vzd.gov.lv		X			
13.8.	Real estate valuation statements and applications	www.vzd.gov.lv		X			
13.9.	Real estate inventory statements and applications	www.vzd.gov.lv			X		
13.10.	Real estate state cadastral statement, inquiries and other registries statements	www.vzd.gov.lv			X		
eServices for Businesses							
1.	Social contributions for employees	www.vid.gov.lv				X	
2.	Corporation tax: declaration, notification	www.vid.lv www.vid.gov.lv				X	
3.	VAT: declaration, notification	www.vid.gov.lv				X	
4.	Registration of a new company	www.ur.gov.lv			X		
5.	Submission of data to statistical offices	www.csb.lv			X		
6.	Customs declarations	www.vid.gov.lv www.fm.gov.lv		X	X		
7.	Environmental-related permits (incl. reporting)	www.vidm.gov.lv www.vvd.gov.lv Regional offices' websites			X		
8.	Public procurement	www.iub.gov.lv			X	X	
9.	Other services						
9.1.	Applications and complaints for not complying withy the Competition Law	www.competition.lv	X				
9.2.	State institution staff application for training	www.vas.gov.lv	X				
9.3.	Statistical data submission by banks	www.bank.lv	X				
9.4.	Foreign currency trading permit	www.bank.lv	X				

Nr.	eService	Provider's web address	Sophistication Level				
			0.	1.	2.	3.	4.
9.5.	Applications and complaints for corruption or conflict of interest cases	www.knab.gov.lv		X			
9.6.	State procurement rules misconduct	www.knab.gov.lv	X				
9.7.	Financial institution statistical statement submission	www.fktk.lv					X
9.8.	Legal entity applications	www.mk.gov.lv				X	

9.10.	Air space usage applications and permissions; Certificates, permits, extensions or cancelling	www.caa.lv	■				
9.11.	Overweight and oversize cargo transporting permits	www.lad.lv		■			
9.12.	Applications and data reports in Sailors and Ship Registry,	www.jurasadministracija.lv	■				
9.13.	ES structural funds project documentation	www.cfca.gov.lv			■		
9.14.	Application forms for registering or changing precious metal and stones business location	www.vpui.gov.lv	■				
9.15.	Lottery applications and permits	www.iaui.gov.lv	■				
9.16.	Applications associated with plant protection, selection and quarantine permits	www.vaad.lv			■		
9.17.	Road Transport service licensing and permits	www.atd.lv		■			

Source: http://ec.europa.eu/idabc 2006 and compilation by authors

1. Income taxes: The Electronic Declaration System is designed to enable Latvian taxpayers to submit tax returns, declarations and other documents via the Internet by filling in appropriate web forms or by transferring XML files containing the relevant data. PIN codes and passwords are used to authenticate users, and information exchange is secured by SSL protocol. All the necessary checks of declaration data are performed and users are informed of the results of these checks online and by e-mail. 50 different types of declarations can technically be submitted via the Internet, but while regulations concerning the procedure of elaboration, processing, storage and circulation of electronic documents have not yet been fully adopted, these documents still have to be submitted also in paper form. However, according to the State Revenue Service website 95% of the required materials can now be submitted on-line

2. Job Search services: The State Employment Agency's Online Job Market enables job seekers to put their CVs in database, as well as to view the vacancies placed by employers. Employers can access the CV database, as well as register their vacancy.

    a. Unemployment Benefits: Information and application forms available for download.

    b. Family allowances: Family allowances applications can be submitted and processed online.

    c. Medical costs (reimbursement or direct settlement). If the health service provider has a contract with the Agency, all costs incurred are directly reimbursed by the Agency. The patient should pay only their own contribution – the patient fee.

    d. Student grants. Information and forms can be downloaded.

3. Personal Documents (passport and driving licence) Information only.

    a. Passport: Information only.

    b. Driving License: Information only.

4. Car registration (new, used and imported cars) Information only.

5. Application for building/planning permission: The website of the Ministry of Economics provides information related to planning and construction permits. Applications are handled by local authorities.

6. Declaration to the police (e.g. in case of theft): Information only.

7. Public libraries (availability of catalogues and search tools): The Ministry of Culture website provides information about public libraries and links to the websites of the different libraries, many of which have their own electronic catalogues. A National Unified Library Information System is currently being implemented, which will link 2 000 public libraries through a single network and produce a unified library catalogue. Users will be able to search the catalogue and order what they need. The order will be delivered through the library that is closest to their place of residence. The unified system is already in place in eight libraries that are deemed to be of national importance.

8. Certificates (birth, marriage): request and delivery: Information only. General Registry Offices are institutions that belong to the judicial system and register civil status – marriage, birth and death. Establishment of a General Registry Office is within the competence of local authorities.

9. Enrolment in higher education/university: There is no centralised enrolment in higher education institutions or universities. The regulations of each university vary and information about the admission procedures is available on the websites of each university. Some universities have application forms for download and offer electronic registration for individual courses. Some universities also offer an electronic registration form for taking part in admission tests that can be submitted electronically.

10. Announcement of moving (change of address): Declaration forms are available for download on the website of the Office of Citizenship and Migration Affairs. In case of change of place of residence, the person has to declare it at the local authority where the new place of residence is located within a month. Legislation is currently being considered to enable residents to declare their change of address by post or electronically directly with the Office of Citizenship and Migration Affairs.

11. Health related services (advice on the availability of services in different hospitals; appointments for hospitals – information only. In 2005 the Government adopted an eHealth strategy, which foresees the implementation of healthcare information systems and of electronic health records, the development of telemedicine and the development of a centralised healthcare portal.

The status of eServices for businesses is discussed below:

1. Social contribution for employees: The Electronic Declaration System enables Latvian taxpayers, including businesses, to submit tax returns and social contributions declarations online. It is technically possible to submit 50 different declarations and statements electronically, but as the regulations concerning the procedure of elaboration, processing, storage and circulation of electronic documents have not yet been adopted, these documents still have to be submitted also in paper form.

2. Corporation tax: declaration, notification: The Electronic Declaration System enables Latvian taxpayers to submit tax returns and social contributions declarations online. It is technically possible to submit 50 different declarations and statements electronically, but as the regulations concerning the procedure of elaboration, processing, storage and circulation of electronic documents have not yet been adopted, these documents still have to be submitted also in paper form.

3. VAT: declaration, notification. The Electronic Declaration System enables Latvian taxpayers to submit tax returns and social contributions declarations online. It is technically possible to submit 50 different declarations and statements electronically, but as the regulations concerning the procedure of elaboration, processing, storage and circulation of electronic documents have not yet been adopted, these documents still have to be submitted also in paper.

4. Registration of a new company. Information and forms to download.

5. Submission of data to statistical offices: Forms for statistical reports are available, and companies can complete and submit statistical questionnaires electronically through the eQuestionnaire system.

6. Customs declarations. Customs declaration forms are available for download. Entrepreneurs have to use the Computerised Transit Control System (NCTS) to submit their customs declarations. The Entrepreneurs Module of the NCTS system can be used after a contract has been signed with the Customs Board of State Revenue Service.

7. Environment-related permits (incl. reporting). Information only. Some Regional Environmental Boards have forms to download on their website. The functions of the Regional Environmental Boards include the issue and coordination of permits (licences) for the use of natural resources and for emissions.

8. Public procurement. The Procurement Supervisory Bureau, an agency of the Ministry of Finance, is the administrative authority in charge of monitoring the conformity of procurement procedures with legal and regulatory requirements. It also provides methodological assistance and consultations and organises training for institutions (contracting authorities), for suppliers of goods, providers of services and providers of construction work. Its website provides access to calls for tenders, supports online notification of tenders and has limited interaction (online filling of forms).

II.6.   Systems and solutions in place and remaining challenges

As already noted, since the early 1990s Latvia has developed a number of national databases and information systems. In 2004 the Latvian State launched an eGovernment Portfolio Programme which included National Programmes and which was co-financed by the European Regional Development Fund. This eGovernment Programme formed the foundation of the current policy environment on eServices. With improving public Internet access, demand is increasing for eServices. By 2006, some of the data systems had achieved bilateral integration between ministries or government agencies however there is the remaining challenge to launch the systematic and multilateral integration for all national databases. By end of 2006 11 State Information Systems had been updated and developed.

The integration tool for national databases IVIS (Integrated State Information System) is one of the new ones. By the end of 2006 the first pilot project of using this IVIS system was completed, linking the first 9 data bases. It is expected that during 2007 most of the main state registers will be developed to the state that they could be integrated with IVIS and will serve as a base for a range of government eServices.

Another essential new IS is the Electronic Document Circulation Management and Monitoring System called DAUKS (the same name abbreviated from the Latvian) and its development is supervised by the State Chancellery. A centralised eDocument circulation system is urgently needed to unify the document flow and to provide institutions with an integrated eServices and eSignature environment for increasing document flow within state and government institutions. Initially, it was developed by the State Chancellery, which faced the challenge to collect, process, store and disseminate all its documents and to ensure fast communication between the relevant parties. They concluded that e-mail messaging would not solve their timeliness and data security requirements. DAUKS has been designed as a Chancellery's web-based document circulation and task manager information system. Work on adjusting the State Chancellery e-document circulation system to a universal government institution system is in progress.

Among other IS are IVIS IM – Income declaration registers integration module; VISR – State IS Register System; VPILS – State and Municipal Office Administration (in creation)

As mentioned earlier, there is a pilot project to create ICT support centres in 10 selected municipalities. In the field of eHealth, the core is the State Compulsory Health Insurance agency's IS which contains several sets of patient data and is used electronically within the VOAVA system. The network used by this agency serves the purpose of linking healthcare providers. There are also electronic files capturing and storing information on subsidised medicines prescribed for specific

patients or specific conditions. A private medical lab test company has its files stored digitally and because it has very large market segment in Latvia, it could be a core register for that information. In addition, there are some clinics, which collect and store visual diagnostics files in electronic format, apart from Riga's Stradinš University Hospital, Trauma Surgery and Orthopaedics, Larger town hospitals and several private clinics, like in Riga "Jūras medicīnas centrs" have settings usable for a visual diagnostics database. Many hospitals have digital diagnostics equipment, but their capacity is not used optimally in the absence of telemedicine.

As mentioned earlier, the main Trauma Surgery and Orthopaedics Hospital in Riga has a high level of electronic systems usage and consequently is a model in Latvia as an electronic hospital. The initial IT system was implemented in 1999 and been developed regularly since then. In 2005 the hospital received ISO 9000 certification regarding its standards in documentation and procedures, and this has formed the basis for further IT system usage. This has enabled the hospital to run primarily on the basis electronic file storage and communication as opposed to paper documents. Up until now, senior nurses have been responsible for entering data. The next step is to make the doctors and surgeons responsible for entering their patient data on the spot to ensure timely and relevant data entry and subsequent analysis and usage.

The integration of the existing national databases is the key remaining challenge and is a prerequisite for many other things. While the integration system architecture and integration tool have been defined, data quality among the various national databases remains to be achieved. Experience of the first pilot project using the central integration tool of one eService involving 4 databases (launched at the end 2006) will reveal the extent of the challenge. The second pilot project of the next 25 services involving 58 national and local databases will be a serious test. This project has been contracted to RIX Technologies Ltd, a local private IT company based in Riga.

In February 2006 the eSecretariat and the World Bank discussed potential cooperation in four key areas: (a) developing a public procurement information system; (b) developing a unified state eService portal; (c) development of strategic eGovernment targets; and (d) how to increase awareness of eServices in society. For promoting eServices in remoter regions, the Regional Development Ministry has also started to focus specifically on the eServices agenda. The Ministry intends to set centralised information standards and requirements, and to create support centres for local municipalities.

A major challenge is that local government and healthcare reforms outlined in sections I.1.3 and I.4 need to be completed before data flow, access and decision authority are known and can be fully implemented with respect to the provision of eServices.

Secondly, once the systems integration project has been defined and budgeted, the next challenge concerns technical implementation. It is forecast that there will not be enough IT professionals, including from the private sector, to ensure an effective implementation of the systems integration project.

The third remaining challenge is the time, effort and financing required to train users, in the ministries, government departments, agencies, hospitals and clinics, to work the systems and to provide the intended eServices.

II.7. Acceptance and usage of eServices by different actors

The Internet penetration rate in Riga is much higher than in towns and rural areas. Particularly in rural areas, Internet access is limited because of a lack of system and network infrastructure and so there is limited motivation to learn ICT skills or to use eServices. With a lack of Internet access points, rural users in general have not been very active because of a lack of IT confidence, traditional ways and reluctance to adopt new habits or skills. Financial incentives may help change their behaviour, for example by charging more to pay a bill over the counter in a post office rather than if paying on-line.

There have been several projects implemented to improve the e-environment. From 2006 all schools in Latvia have IT classes with Internet access and public libraries are connected too.

Younger people are more willing and confident in using eServices as compared with older people so the need to encourage younger people with financial or other incentives to use eServices may not be as great. According to a survey conducted by the eSecretariat in early 2005 in which 2 539 people in Latvia were polled, 81% of respondents aged 15 to 45 felt confident in using eServices as compared with 58% of respondents aged 45 to 69 who were not confident with eServices (www.eps.gov.lv/files/petijumi.html). Among the respondents who use the Internet, 58% of young people use eServices compared with only 18% in the 55-64 age range and 11% in the 65-69 age range.

Box 2: eHealth development involving the private sector

The 10th International Conference "Information Technologies and Telecommunications in the Baltic Sea and CEE Region" in April 2006 in Riga raised awareness and identified the current issues relating to eHealth development in Latvia.[21] The first short-term task of national healthcare governing institutions is to create an appropriate legal framework and to define IS standards and guidelines for the collection, storage and use of healthcare data. This foundation will be essential for defining the legal and technical environment for effective eHealth development, including enabling private sector specialists to provide their technical expertise and business solutions. At this stage the State's mission is to define, regulate and supervise eHealth development, but the State will not be able to provide all the needed financing. As Health Minister Mr Muciņš noted at the conference, "the message for health service providers is – be active, don't expect a "free lunch" from the government". The State's role of setting policy, providing IT support, defining framework and system standards, infrastructure (like for EPR and other systems) will ensure information confidentiality and compatibility during the integration of various information systems and to optimize the potential for complementary development in the future."

However, in addition to the barrier of a lack of system infrastructure in rural areas, the institutions that could provide eServices are generally process-driven rather than customer-oriented and so are not attempting to deliver their services quickly and easily for the benefit of customers. In most cases, any document that is submitted needs to be followed by the hard-copy signed version. This is due primarily to the lack of eSignature capability and the lack of the legal acceptance of e-documents in Latvia, but due also to a bureaucratic attitude among the civil servants.

II.8.   Impact of eGovernment and eHealth developments on society

While it is too early to confirm the actual impact of eServices on the public sector, the healthcare sector or the information society, government policies and plans have been developed with the intention of achieving positive impact in a variety of areas. Expected benefits are described below.

II.8.1   Impact on the public sector

eServices will decrease the administrative burden on people. As national databases achieve integration, information will be fast and good quality, reducing time wasted with bureaucracy both for individuals and businesses. Data duplication will be reduced and it will be easier to analyse the underlying processes.

More information with easier and faster access will enable faster and better decision making at various levels. Public sector processes and procedures will have greater transparency, thereby reducing the risk of corruption and increasing the efficiency of public administration. All of this will strengthen the people trust in the public sector. By creating a need to examine the efficiency of the service procedures, e-services will trigger back office reform.

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[21]   www.ebaltics.com

II.8.2 Expected impact on the healthcare sector

eHealth will encourage hospitals and other healthcare providers to implement ICT systems and procedures. According to VOAVA, this leads to better management of resources, increased staff competence, inclusion in the eHealth community and cost savings as a result of identifying actual costs and revenues.

eHealth methods will free staff from spending time on extensive paper work, and would improve administrative procedures, creating simpler structures and requirements. That will help to address staff shortages.

eHealth will stimulate health sector reform because a current obstacle is the lack of data and information and a lack of systems for data capture, storage and access by healthcare professionals and researchers This will improve the quality of the service provided.

On-line healthcare information availability will improve access to relevant information, which will reduce the need for actual visits to places of primary and secondary care, making these scarce resources available for those who really do need them.

Developing an eHealth integrated database system, were several data bases still need to be created will provide quick access to patient data and access to diagnostic databases, lab results, case studies, visual diagnosis files.

Development of telemedicine will enable medical staff to prepare for emergency patient treatment prior to arrival at the hospital. This will improve usage of digital equipment scattered across the country, by providing interpretation services from larger hospitals and would provide doctors the opportunity to consult quickly and efficiently with colleagues in other locations.

II.8.3 Impact on the information society

Greater availability of eServices will lead to greater usage, which will increase acceptance of and participation in the information society. The concept of the information society envisages the development of a well-informed, integrated society that feels included in the local, national and international community that has a wide range of means of traditional and electronic communication, has access to a variety of sources of information and the ability and willingness to learn throughout the life-cycle.

III. ASSESSMENT OF CURRENT DEVELOPMENTS AND TRENDS

III.1 Main achievements and shortcomings of eServices development in Latvia

The development of eGovernment and eHealth in Latvia is presented in this section in both the EU context and where appropriate in the context of the three Baltic states. Their recent similar history makes them useful as comparable benchmarks.

III.1.1 eGovernment

Assessment in Latvia can be separated into pre- and post-EU accession. During the pre-accession period, the development of eServices has been relatively passive although there were some achievements in creating the base for eServices with some good initiatives from the IT industry. However a combination of insufficient funding and a lack of political will in the earlier years resulted in Latvia finding itself at the bottom of the EU's eGovernment league table.

The achievements of the pre-accession period as described in chapter II include the development of core state information systems, such as a Population Register, Enterprise Register, State Land Service Cadastral Register, Transport vehicle and driver Register, State Land book Register, Forest Register, Tax management, customs, social insurance and care support IS, medical service payment system, statistics IS and others. Most of the main registers now exchange information on-line and on a regular basis (e.g. Ministry of Finance /State Revenue Service; Ministry of Economy/ Central Statistics Bureau; Ministry of Interior/Population Register; Cadastral IS). The weakness of existing IS is that they are based on system administration functions and needs, without considering interests of other institutional users and rarely with actual end-users in mind.

A major turning point that improved the pace of developments in the post-EU accession era was the creation in December 2004 of a new Ministerial post with responsibility for eGovernment affairs, followed in January 2005 by the establishment of the eSecretariat. This replaced a hitherto fragmented framework of responsibility for the development of government eServices. The start of the development of an integrated state information system, (a key infrastructure project funded by 2004-2006 ERDF resources), began only at the beginning of 2006 and currently is planned to run to the end of 2007. For the ERDF planning period 2007-2013 the eSecretariat have been given the responsibility to coordinate ICT project development work in all of the state system in Latvia. This means that other ministries will have to coordinate their plans with the eSecretariat and the process will be more structured and organised than in the past.

The post-accession period has been marked by much more targeted activities and a significant increase of funding because of access to the ERDF. As a result, 2006 statistics indicate that Latvia is no longer always at the bottom of the EU eService indicators.

Online availability in Latvia of services remains low compared with other EU member states. Although improving from 5% in 2004 to 10% in April 2006, Latvia remains in last place (Figure 10). The State Register integration tool is not yet available for use, there is restricted access to other state institutions' data and a secure e-signature which was launched only in October 2006 is not yet widely adopted, thereby significant barriers to efficient eDocument circulation remain.

Figure 9: Online availability of public services (%)
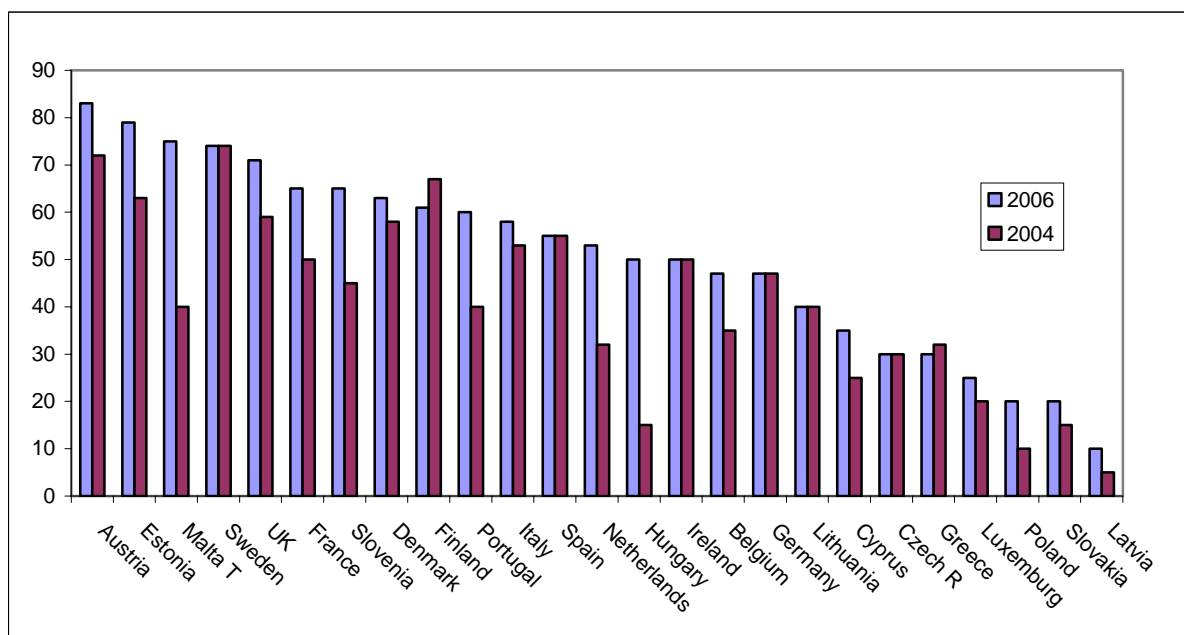
Source: Cap Gemini report on 'Online availability of public services' June 2006

In 2006 in Latvia only 7 from 20 standard government eServices demonstrated the full sophistication level 4. By the end of 2006 the government started to use the IVIS integration tool initially on a pilot basis with a few IS. The other 25 state registers will be integrated by the end of 2007. By October 2007 the number of full on-line government eServices should be significant.

Indicators of the usage (for example Figure 11) of the eServices are not quite so bleak with Latvia's performance much the same as in most other new member states with the inevitable exception of Estonia. Much the same story applies for the individual categories of interaction:

- % of individuals using Internet for downloading forms (Latvia 4.9%; EU 25 10.5%);

- % of individuals using Internet for obtaining information from public authorities (Latvia 12.2%; EU 25 20.7%);

- % of individuals using Internet to send filled forms (Latvia 5%; EU 25 6.1%).

Overall the willingness of individuals in Latvia to use government eServices is higher than is the relative supply of such services. The figures on general Internet usage confirm this.

In practice the usage of eServices has been uneven because of the urban/rural divide. According to the eSecretariat Work programme for 2007-2009 the share of regular Internet users in urban areas is four times higher than in rural ones. A combination of low income and low population density in rural areas has led to uneconomic conditions for broadband Internet supply.

There is no doubt that EU accession marked a turning point in terms of real action, mostly due to EU development requirements and availability of substantial new resources. It has also changed political attitudes with Latvia as a new member state seeking to actively embrace the EU vision of knowledge based society.

Figure 10: eGovernment usage in 2005
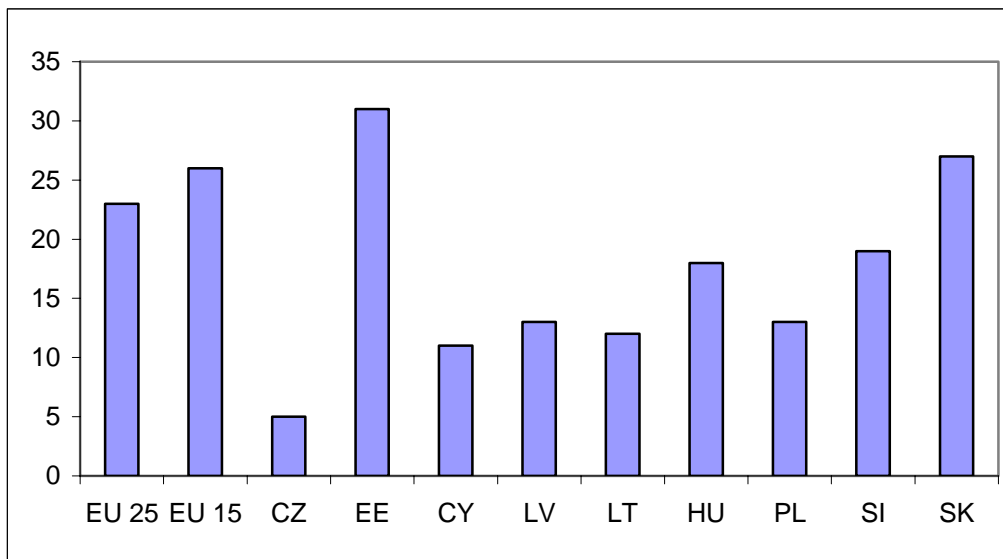
Source: Eurostat 2006

In short, Latvia can be regarded as a late starter in terms of the supply of eGovernment and the resulting supply constraint has had the effect of limiting opportunities for users. However, EU accession has brought a sea change in the supply environment and various demand indicators suggest that in principle the climate is good for real progress.[22]

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[22] Apart from direct indicators of e-usage and general Internet usage Latvia has enthusiastically embraced eBanking where high quality e-services are provided by all commercial banks. The 2005 indicator for use of Internet for financial services was 16% as against an EU 25 average of 19%. This is quite high given that the overall use of banking and other financial services remains low. This indicator shows that when good services are available the public will use them.

Summary of main achievements and shortcomings in eGovernment

Achievements	Shortcomings
Creation and development of main state registers and IS from 1990s. Senior IT experts designed the Mega system plan, which served as the core IS concept.	After an active start in the late 1990s and work on developing the IS registers, eGovernment was not considered as a priority.
Creating and developing the legal environment to regulate eService, ICT infrastructure and eHealth development.	Short term governments and lack of political will, led to inadequate ICT funding up to EU accession in 2004. Without ERDF support there were insufficient local resources to achieve eGovernment .
Establishment of eSecretariat in 2005 headed by a Govt Minister enabled the govt to address eGovernment development in an intensive and constructive way compared with before when responsibility was travelling from one institution to another.	Latvia has low ICT indicators compared with other new member states. Though some indicators have improved, it continues to have a low level of government services with full on-line availability in 2006.
Setting main policies and strategies and producing action plans with funding and achieving first real outcomes.	eSecretariat's ICT development strategy overlaps with other Ministries' competence and there is not enough willingness for coordination among Ministries. eSecretariat is still thinking of the mechanism for achieving better cooperation from various institutions in ICT development
Creation of national standards for state IS and ICT communication. This will ensure well-organised further development and data integration in the future.	Regional reform is slow and uncertain
Development and improvement of 11 state IS (based on more than 80 state IS) and the launch in 2006 of municipal IS as an eService execution tool available for the integration. Successful Regional ICT activities, initiated by the Regional Ministry.	Regional divide – Internet users in rural areas are one third to one quarter of those in the urban areas.
Launch in 2006 of the state eService portal www.Latvia.lv	Insufficient computer literacy, especially for less socially active and older people.
Various encouragement and support activities, in Latgale, the poorest region of Latvia, have led to relatively good Internet and eService use indicators.	The disproportionately large presence of Microsoft software in state institutions will require large budget amounts in the future for software upgrades and purchasing new Microsoft products

III.1.2 eHealth

Although concrete achievements in eHealth are hard to identify in Latvia, the general benefits are well understood within the context of healthcare reform. These include: more efficient processing of an increasing volume of healthcare data and information and the development of an effective management information systems. An important achievement of the first phase of healthcare reform has been the development of the 13 module data management system created in 2003 by the State

Agency for Compulsory health Insurance (VOAVA) and this system forms the core of the current eHealth IT system in Latvia. Much of the concrete work in developing eHealth is yet to be done and a major step forward in this is the eHealth Action Plan for 2007-2013. As has been outlined earlier the Action Plan contains a comprehensive set of measures aimed transforming the healthcare system. However, as also pointed out, realisation is contingent on the necessary funding being forthcoming.

The introduction of policies promoting eHealth was driven initially by compliance with EU accession requirements. However other benefits were soon identified within the context of healthcare reform. These included the more efficient processing of an increasing volume of healthcare data and information, the definition of an effective management information system to optimise the allocation of the limited resources available and addressing the future forecast decrease in the number of medical staff that will be produced by the universities.

At this point in time there are practically no sophisticated eHealth services available for public use in Latvia. Indeed, compared with the list of 20 public eServices in the eGovernment domain, in eHealth there is not even a standardised set of development indicators. Online healthcare delivery currently is marginal. Comparative indicator of public interest in eHealth is shown in Figure12. Although the Latvian figures are rather low in terms of absolute numbers they are not the lowest in the EU. Moreover, even in the EU-15 use of the Internet for health information is still relatively low.

Figure 11: % of individuals in 2005 using the Internet for health information
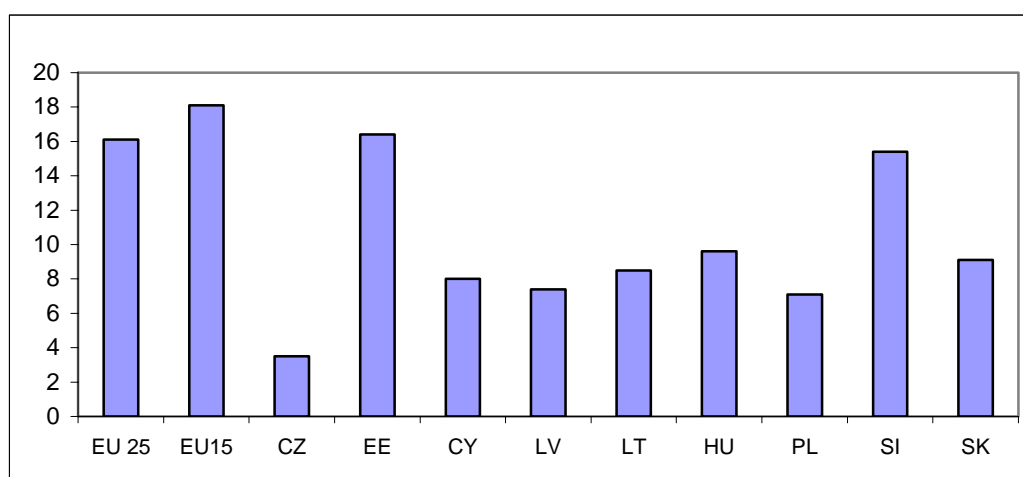
Source: Eurostat 2006

Eurostat also reports direct online interaction with healthcare providers:

- the percentage of people seeking online advice from a practitioner in Latvia is 0.5%;
- the percentage of people making an online appointment with a practitioner is 0.1%.

From the indicators for the EU-15 it is clear that this is an area that remains undeveloped in the EU in general.
A significant achievement is that several key policy and system components are in place. However, in practice, centralised eHealth development in Latvia has remained low because of the lack of an eHealth action plan and consequently – no financing.

From 2003 when World Bank sponsored reform created the State Agency for Compulsory Health Insurance, up until 2005 there were practically no other centralised eHealth development activities on a national level. Since 2005 there have been relevant policy documents and during 2006 the core eHealth architecture was created and there was intensive work on the eHealth action plan, which eventually was published in early 2007. With sufficient political will after elections in October of 2006 and with the broader momentum of EU healthcare policy development, it is likely that Latvia will begin the development of effective healthcare IS and the realisation of an eHealth programme.

Achievements	Shortcomings
eHealth Strategy and Policy are in place, and a detailed action plan on the way.	State healthcare budget among smallest in Europe
Data management 14 module system of the compulsory state insurance agency (VOAVA)	Reform process is unfinished and many problems remain unresolved.
Existence of many medical and health related registers and IS.	Healthcare has many problems even before addressing eHealth matters.
Examples of healthcare providers, which have EPR, HER, and internal data sharing and practically paperless work.	No dedicated unit or group under Ministry of Health, which would have capacity to address eHealth development on daily bases.
Improving acceptance of ICT by doctors and medical staff.	Inadequate computerisation in hospitals
ePrescription preparation has made considerable progress but still it will take about 2 years to launch it.	Very limited availability of eServices in healthcare and low awareness of eHealth concept.
BITNET Telemedicine project, with plan to expand.	BITNET was started in 2000, but without a strategy and without state funding.
Emergency services reorganization is bringing in new IS that includes linking in to the data exchange network emergency rooms of hospitals that are in the emergency service system, digital country maps for shared logistics with other emergency services, access to some medical is like National Blood bank IS etc	Emergency service project was ready from 2003 but due to politics the financing was cut, and it is hoped to be resumed in 2007.

III.2 Major factors affecting the evolution of eGovernment and eHealth

The most important economic and political factors are common to both eService domains. Legal factors have played a role but legal shortcomings are largely a result of political ones.

III.2.1 Economic factors

The following factors are relevant to both domains:

- Latvia is the poorest country in the EU 25 in terms of GDP per capita and has been throughout the pre-accession period;

- Tax revenues at 30% (or just under) of GDP have been the lowest (or close to) in the EU 25 since 2000 (EU 25 average has been just over 40% of GDP);[23]

- Recent rapid annual GDP growth of around 8%;

- Falling prices in the communications sector;

- Availability of new resources from EU funds.

It is no surprise that in Figure 13 on the supply of eGovernment the last three places are occupied by three of the four poorest EU member states places – Latvia, Poland and Slovakia. The development of eServices requires *extra* public expenditure. With a tax revenue share in GDP that is the lowest in the EU on a GDP per capita base that is also the lowest and a budget deficit that until recently severely constrained large infrastructure development, such extra funding has proved difficult to secure in Latvia. Successive governments have intended to wait until resources are available from outside

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[23] Clearly, low GDP and low public revenues mean inadequate resources (both public and private) devoted to e-service development.

sources[24] or until EU pressures have made some action necessary.

The income and budgetary factors apply equally to eGovernment and eHealth. At 3.3% of GDP public expenditure on health in Latvia is the second lowest in the EU 25 (Cyprus spends marginally less) and as has been documented in earlier chapters the healthcare system is bedevilled by many problems – unresolved structural reforms, low salaries, under-the-counter payments etc.

EU accession has already shifted the government budget constraint. Thus over the 2004-2006 programming period ERDF funding brought at least 17 million euros of funding for eServices and in the 2007-2013 programming period the equivalent funding[25] is earmarked as a massive 240 million euros – nearly 14 times the 2004-2006 total and nearly 4 times as much each year. The envisaged infrastructure development is to be accompanied by 'soft measures' to educate and inform the public. According to the latest information, indicative figures[26] for new 'information society' financing from all sources for the period 2007 -20013 amount to just over 321 million euro.

Low incomes have also been a factor in constraining individual access to the Internet and hence to eServices. Thus at 26% of households, Latvia had the lowest EU rate of PC ownership in 2004 (the EU 25 rate was 54%) and only 15% of households had Internet at home (the EU 25 indicator was 43%). Low incomes are particularly a factor at the regional level with regional disparities in Latvia being some of the most acute in the EU.

On the other hand rapidly growing income – wages are currently (early 2007) growing at more than 30% a year[27], combined with falling prices for Internet equipment and services[28] means that the public's effective demand for all kinds of eServices is increasing and is likely to increase in the future. At the same time growth is generating more tax revenue,[29] which provides resources for both new direct public expenditures and for co-financing of structural fund projects.

Economic factors in eHealth include: a low state healthcare budget (the lowest in the EU as a % of GDP) combined with high supplementary payments by patients. Although healthcare providers have been transformed in to limited companies status there has been no indication, that healthcare system as a whole will move more towards a genuine market based system. Low state financing together with inefficient use of state funds has meant inadequate support for many developments e.g. the computerization of medical institutions. State payments to providers of healthcare services are low and are based on minimum scenarios. However, with minimal funds being available, development can be achieved only via compromises, in practice, often in service quality. At present the private insurance system is relatively small.

III.2.2 Legal factors

The key legal framework is in place. The base eGovernment laws are the law on eDocuments, the law on state IS and the law on information society services. Since 1994 legal framework has been developed to regulate information use including electronic use of information. They are laws on Personal Data Protection, Freedom of Information, eCommunication, Mass Media and others.

State IS are regulated by a special Law and Cabinet of Ministers regulations for system development

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[24] There is informal evidence from some spheres that public expenditures were actually reigned back in the pre-accession period so as to maximise the scope for the use of structural funds post accession.

[25] Operational Programme measure concerned with "ICT infrastructure and services"

[26] "Information Society Development Strategy for 2006. - 2013. gadam" 15.06.2006

[27] This refers to money wages. Hence real wages are growing at an annual rate of 20% or more.

[28] In 2005 the prices of 'communications' fell by 6% as against an increase in the general price level of nearly 7%. In other words the 'relative price' of communications fell by about 13%.

[29] The 2005 budget ended up in surplus because of buoyant revenues, compared with an originally forecast deficit of 1.5% of GDP.

projects and technical and security requirements.[30]

Historically each individual national register has managed its data in its own way. As a result, development work on the information systems for data integration for the IVIS integration tool for various eServices has been slow to start. This applies to both eGovernment and eHealth information systems, databases, user interfaces and operational functionality. For future development and integration, various metadata have been created, also uniform system structures, uniform interface and national standards, however not all of them are yet legalised.

The legal framework in Latvia for database integration is not fully developed because the main regulations and laws address the definitions and standards of the new system and the integration tool. Sometimes it is not that clear how much the new developments need to be reinforced by law, or just left to be used when necessary. If the use is artificially forced, the law might not work and then it would be unrealistic to follow the regulations.

The IS law stipulates that the institution which runs the registers is not allowed to maintain non-primary data bases and data are not to be entered more then once so as to avoid duplication of entries. Because data registers are older than this regulation of January 2007 compliance will take time and require funding. For example several institutions have their own address registers, (e.g. the Citizens Register, the Land Book, and the Enterprise Register). Information in he Land Book address register needs to be improved in order to form a reliable source to feed other registers. Similarly the Citizens Register has different name spelling in different places and some citizens have reported non-existent addresses when declaring their place of residence. The reality is that it takes synchronization of data in several IS to identify inconsistencies and amend manually which really takes considerable time and effort.

In the near future eService local standards, IS standards and XML communication standards will be legalised. More regulations will address cooperation between institutions and use of the integration tool. It will include a definition of the tool, its aims and its use by institutions.

Data security is regulated by the Data Protection Law. With the development of eServices the Data Protection Law needs updating because data from registers are being used more broadly. Consequently data security has changed. There will be other issues arising in the future. In general, for eGovernment services there minimal legal gaps and the eSecretariat is addressing them, but for eHealth services are in a much earlier stage of development.

Latvia has a progressive legal approach and often develops laws and regulations ahead the reality. As a consequence, sometimes it is difficult for institutions to achieve change fast enough.

III.2.3 Politics and policy factors

The development of long term projects that require substantial infrastructure investment requires strong governments with a long term vision, willingness and ability to commit resources over a period of years. Long-term political stability has not been the case in Latvia for many years. Also, it is widely accepted that several of the leading political parties represent particular business groups.

In contrast to previous elections the October 2006 parliamentary election effectively returned the incumbent government. This means that there are better prospects of policy and funding continuity than hitherto. The commitment to multi-period funding will also help.[31]

Local internal politics among various Ministries are factors that have created challenges from time by time. For example, in 2006 there was very little communication between the eSecretariat and the

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[30] Nr 71 – State IS development project supervision; Nr 572 – State IS registration regulation; Nr 764 - State IS main technical requirements; Nr 765 - State IS main security requirements; Nr 473 – Electronic document circulation regulations for state and municipal institutions.

[31] The new government is committed to introducing medium term budget planning

Ministry of Health, though both were working on the concept of integration tool. eHealth has a separate architecture draft from the eGovernment architecture draft.

III.2.4 Policy factors

Apart from strategies set in the 1990s, the EU policy framework in eGovernment has been very important in setting the goals for Latvian policy so that the form and style of many policy documents have been directly influenced by the EU example. Lisbon strategy has served as a base for need to produce strategies and policies and arriving to the establishment of the eSecretariat in January 2005. Since establishment eSecretariat is responsible for national ICT and eGovernment policy and strategy work.

The decision to concentrate ICT development responsibility in one institution has created a change of tone or attitude and there is much greater transparency and willingness to monitor policy in an active and self critical way. As described in earlier chapters, eSecretariat publishes all activities and documents in its portal www.eps.gov.lv.

Since the eGovernment strategy has been addressed intensively in 2005 and 2006 for 2007 the eSecretariat has capacity to address other related areas such as e-inclusion, e-accessibility and education. Security issues surrounding data access will be another future target and exploration of the broader involvement of the private sector may reveal solutions to some present shortages.

Nevertheless major policy hurdles remain before fully effective eGovernment can be assured. Although the 2006 election resulted in the effective return of the incumbent government policy makers are now (in 2007) facing serious macroeconomic overheating. This has resulted in an anti-inflation plan that will involve fiscal tightening with possible effects on infrastructure projects.

Also the new Structural Funds programming period will bring a massive increase in project activity not just in the IT sphere but across the board and there are serious questions about Latvia's administrative capacity to effectively implement and monitor all the projects, particularly relating to eHealth and projects in hospitals

A major factor in the implementation of eServices at the local level will be the pace of local government reform. Introduction of municipal IS in 2006 improves information conditions of local decision makers and gives access to the same resources regardless of the size of the municipality.

In eHealth there is not the same well-defined EU-based policy framework as in eGovernment, which may explain why the policy development in eHealth in Latvia is at an earlier stage as compared with eGovernment. Nevertheless, the European initiatives, local reform demand and the eSecretariat's active promotion of eServices have prompted the Ministry of Health to begin developments. In early 2005 an IT supervisory council was established that will advise on key policy goals relating to eHealth. The system architecture was defined in 2006 and a concrete action plan specifying both the kinds of service to be implemented and a timetable for their implementation was delivered in earl 2007.

A critical factor in the development of eHealth will be progress in the reform of the whole structure of the health sector. This represents both a potential barrier, which can slow eHealth development, but also an opportunity because the massive restructuring of services that is envisaged provides an opportunity to introduce state-of-the-art electronic solutions and to improve the cost-efficiency of the hospitals.

III.2.5 Technological factors

A major cross-domain barrier for the uptake of Internet in general and hence of eServices in particular has been the absence of broadband coverage in many rural areas. Low density of population together with low incomes has made this economically non-viable.

A project that commenced 2005 has supplied every school and library with computers and broadband Internet access and has provided initial user training, thereby removing a key constraint in terms of a lack of IT infrastructure in smaller cities and towns. Technical support or system and database administration are out-sourced locally to the private sector

A significant barrier for eHealth is that a national system of electronic patient records (EPR) does not exist. VOAVA has some medical service records and some healthcare centres have their own information systems, which include stand-alone patient records in an electronic format. In addition the healthcare providers are not linked in a network. The development of a comprehensive EPR system remains in the future. Thus in the Action Plan the development of a set of guidelines for such a system is scheduled only for 2008.

The next great challenge at the decision level will be the improvement of existing healthcare databases and development of IS for integration, as well as encouraging and supporting computerisation of hospitals. Presently there are some examples of hospitals that are practically paperless and many others that use computers for accounting and stock purposes. The Ministry of Health will have to address many future issues such as allocating development responsibilities, adjusting the legal framework to e-document circulation, defining formal requirements for hospital IS, data security issues and more customer oriented services.

For an effective EPR system, a great challenge will be capturing historic data, which are in a variety of hard copy formats and located at different addresses. Historical data are very fragmented because of the change from Soviet Union and change in the structure of the healthcare institutions. In the field of pharmaceuticals the e-prescription project is much closer to realization, as is telemedicine development, thanks to the Emergency Service Centre's efforts.

III.2.6 Socio-cultural factors

Among civil servants in Latvia, particularly older ones who have direct experience of Soviet times, there is a culture of bureaucratic process, which appears to take the place of initiative and taking responsibility for decisions. Arguably, this is why lengthy bureaucratic paper procedures, with many signatures, official stamps etc are needed in interactions between individuals and the state institutions. Interviews with key players identified that younger civil servants in general are much more customer-oriented and are better at solving problems rather than being obstructed by problems.

Though the Internet is popular and people are keen to use it for getting information, e-commerce is not popular in Latvia because consumers are concerned about security. Computer piracy is very prevalent and this certainly needs to be addressed with appropriate security measures to increase trust in online interactions. Banks have managed to overcome this lack of trust in security in the case of eBanking, and the eSecretariat is promoting the eSignature as 'safe and just as simple as Internet banking'.

Socio-cultural barriers also exist in remote regions, because people lack knowledge and experience with computers. This has led to a lack of cooperation in some small municipalities on initial data collection by state ministries and agencies, and also to a low level of implementation of new policies and procedures, including those relating to the provision of eServices. Even though the Regional Ministry has created special web based infrastructure that would be of help to municipalities, at present only the larger town municipalities are using it.

The training programme by LIKTA, as described in Chapter II.1.4., addresses lack of computer and Internet usage ability by offering courses also in Russian.

III.2.7 Regional factors

Regional income disparities have partially been the direct and indirect cause of low Internet usage in rural areas. Additionally eService availability at the local level depends very much on the level of sophistication of the local administrative unit. Local staff will need more technical training to be able to take responsibility and demonstrate initiative. To be customer-oriented will be easier in rural areas

because in smaller cities and towns there is usually a friendlier environment. Centralised planning and policy formation, but with local execution, requires an effective monitoring and feedback system complemented with an ability to modify the plan to accommodate local specificities. In Latvia this approach is not yet operational.

The administrative structure of local government is planned to change fundamentally by 2009, as outlined in chapter I. As a consequence many local government employees are not taking or implementing decisions because they claim that the whole local government system will change anyway, which would then require new decisions to be taken and implemented. eService infrastructure, electronic document circulation system, service process standards there need to be larger municipal units to undertake such a task. Municipalities will have to integrate their resources and to cooperate to be able to set up eServices. In such an environment where the new local government system is not yet clearly in place eServices are regarded as a relatively low priority. At this stage the main action will come from central regional and national levels. This issue applies mostly to rural areas.

Regional aspects of eServices have been taken up by the Regional Development Ministry (RAPLM). During 2006 in cooperation with the eSecretariat the main aims were set and a clear action plan defined.

An interesting regional factor is that the survey of regional usage of Internet and eServices indicates that the poorest region Latgale doesn't have the worst indicators in this sphere. It may be explained by the fact that higher development funding has been available for Latgale and by a psychological drive of local people to be more involved in outside activities being located "so far from the capital."

The healthcare reform process of reorganising the regional hospital network, closing some smaller rural hospitals and turning them into social care centres, reorganising and modernising emergency services that include usage of new electronic communications provides a great challenge. A pilot project in 2006 in the small town of Jekabpils (population 26 000) has indicated that the implementation of a new IS within a hospital soon identifies the need for the reorganisation of the whole hospital, affecting staffing, equipment, buildings, services and financing.

III.2.8   Demographic factors

Latvia is a country with both a declining and an aging population. There has been a natural decline in population in every year since independence and with EU accession has come a significant (though not precisely known) outflow of working age migrants. The aging population will definitely increase general demands for health services and an older population will require more intensive efforts in terms of education in the use of eServices. The increase in the share of older people in Latvia will create growing pressure on healthcare services. eHealth innovations such as telemedicine could provide effective and cost efficient solutions. While some telemedicine practices do exist in Latvia, for example at the P Stradins University Hospital in Riga (with links to some regional hospital) telemedicine in general is underdeveloped and is one of the priority areas of the Action Plan.

III.3 Analysis of drivers and barriers

III.3.1   Cross domain

Economic growth has been and will continue to be a major driver. Growth leads to two strong broad effects: i) increasing prosperity increases the demand for eServices, both directly and because people can afford the personal expenses associated with Internet usage; and ii) rising national prosperity increases government resources and hence makes governments more able and willing to spend on new areas such as eServices without reducing gross expenditure in other areas. These affects are certainly evident in Latvia.

Increasing demand for the convenience of eServices, including in healthcare is another major driver.

A third major driver is ***EU initiatives,*** which have provided both a political and a material impetus to the development of eServices in Latvia. The EU eServices framework has fed directly into Latvian policy-making. Also, the coming on-stream of the Structural funds has provided new resources for the development of both infrastructure and services and the financial input will be massive in the 2007-2013 programming period. On the other hand, sometimes guidelines are followed only formally when recommendations are difficult to follow and there are other competing priorities or political interests.

A major political barrier has been the ***short-termism*** of governments. This has resulted in a high rate of turnover among decision makers and thereby constraining long-term policy development. eGovernment has not been considered as a priority by the main political parties, which represent the interests of particular economic groups. eGovernment has been seen as a costly project and therefore unaffordable. Also ICT use is increasing anyway. A positive factor is the 2007 switch to a 3-year budget planning cycle (previous yearly) from 2008

A further major barrier arises because of Latvia's Soviet past, the public in general does not seriously complain about ***bureaucracy*** and does not openly demand or initiate solutions to problems. There may be resistance to radically new approaches in institutions and agencies because of some unsolved "bottle necks" in their system. Typical behaviour by civil servants is unwillingness to take the initiative or to seek to solve problems, and avoidance of extra work. This attitude of resistance leads to poor customer service, corruption, and much wasted time and effort for users of public services.

During interviews with eGovernment and eHealth professionals it was noticeable that younger civil servant**s** were more enthusiastic about changes and use of new ICT. They had a much better understanding of processes, and interest to analyse and optimize existing systems and to promote a customer-oriented attitude. It was also noticeable that lately more management positions had been assigned to younger people. Possibly, after some period of training and change in general culture towards ICT usage, the age factor will have less impact.

The successful implementation of eServices will require ***trained civil servants***, skilled in both technical issues and in being customer-oriented, to be willing and able to address problems and to find solutions. It is intended to address these issues with soft measures of the Structural Funds but there are questions about whether the training capacity is itself adequate to deliver the required scale of training in an appropriate time period.

Large ***international ICT players*** have had a presence in Latvia for some time and are constantly looking for project opportunities and are offering various solutions, which include ***best international practice***. However international companies such as HP, IBM, and Microsoft in the ICT sector and medical technology companies such as Siemens and Philips are usually much more expensive than local companies and are looking for really large projects. For example, the first eGovernment portal (www.e-parvalde.lv) was created by Microsoft Latvia in 2003, and then later given to a local NGO to run. Microsoft also has been organising various marketing events for eServices. The initial eDocument circulation platform is also based on Microsoft and the informatisation of schools is a key Microsoft project in Latvia.

The availability of ***the integration tool IVIS*** will change the whole scene of public data management. IVIS offers an alternative to other eService channels however no other approaches will be as effective, because of the specific modules, which the developers are incorporated into the system. IVIS has an authentication tool with a secure e-signature (apparently one of the highest security e-signatures in Europe, therefore the most forward looking), a payment settlement module, an e-service catalogue, etc. Once up and running, IVIS will open opportunities for hundreds of new services because of the data standardization that the system offers.

Other barriers to development include resistance to change, technical barriers of installing, adopting, linking, and reorganising while the day-to-day existing functions need to be performed anyway and there is no extra staff capacity or budget provided to support the extra new work.

As more eServices become available, useful and popular, more new services will be demanded and provided. However the provision of new e-services will require effective marketing to increase awareness and training to ensure wide user-adoption.

III.3.2   eGovernment

A major factor driving the improvements in eGovernment is the incentive created by *Latvia's reputation of low ICT indicators*. Latvia has a strong competitive incentive to improve its situation and subsequently its ranking. That approach is expected to drive the new coalition government in Latvia to coordinate rather than compete among its four constituent parties and so to implement the policies and action plans that have already been approved.

The creation of a *dedicated and active institution for eGovernment development* is proving to be a major positive force. The eSecretariat currently employs around 50 people and as a result most of the policies and strategies for eGovernment in Latvia are in place. Similarly, the eSecretariat identifies the need for evolution of the legal environment relating to eGovernment and is leading the decision making for strategic approaches of how its centralised role should be used for IS integration, presentation of e-services to public, and business models for achieving aims. We concluded that despite the need for a state central coordination role, actual eService development depends on the state institutions providing the services. Therefore Ministries are actually responsible for further development and implementation in detail. At present, often Ministries are not sufficiently responsive to the eSecretariat's coordination requests.

A major barrier continues to be *fragmented responsibility*. Centralised efforts at ministerial level in providing tools like eSignature, ICT standards and system integration tools are essential however the decision and implementation responsibility lies with the subordinate state institutions themselves. IVIS is only a tool to organise information flow and eSignature is only a tool to access the IVIS tool securely. It is the state institutions themselves that will provide the detailed service description in the IVIS service catalogue module. It is the institutions themselves which deal with the public and who are therefore responsible for providing the specific government service.

In some cases state institutions individually have solved the lack of centralised initiatives. For example, the State Revenue Service (SRS) in 2006 developed its own e-signature system for authorising and filing tax reports. The system is not as secure as the one launched in early October 2006 by the State and Latvian Post Office, but the State Revenue Service was not willing to wait. Based on feedback during interviews for this report, the SRS e-signature is sufficient and satisfactory. The State's formal e-signature system will be expensive for users and in the absence of many eServices requiring an eSignature, the State's e-signature solution is unlikely to have a big uptake. The largest user group is expected to be civil servants themselves for their own internal document administration.

Delay in local government reform will continue to have negative effects on the development of eServices at the local and regional level. This will also affect local healthcare delivery because the municipalities own the local state hospitals and they certainly need support for development.

III.3.3   eHealth

Health sector reform in Latvia is both a driver and a barrier for eHealth development. The current process of reform provides the opportunity to introduce electronic solutions, such as shared data networks, electronic health records and telemedicine, however a lack of clarity in the reform programme and delays in decision making may delay the implementation of effective eHealth initiatives.

EU policy has a powerful impact on Latvian policymaking. New initiatives in the *eHealth* domain are providing a real stimulus for healthcare development in Latvia. EU funding at last is enabling healthcare providers at least to begin planning for much-needed capital investment, training and development. Only with EU policy requirements have Latvian policy makers committed to eHealth developments. Previously there were some international attempts where local hospitals were willingly involved, but they did not have the Health Ministry's explicit support or funding and therefore the hospitals could not develop the various projects for example the telemedicine and emergency services. Now with significant EU funding, healthcare providers in Latvia at least will be able to access the required financing to undertake much-needed capital investment. Finding suitable sources of required sector-specific expertise remains a challenge.

The current *shortage of medical staff* creates a demand for efficient solutions to provide medical staff with needed ICT training.

Presently the Ministry of Health does not have a full-time dedicated *unit for coordinating eHealth* development, as with the eSecretariat for eGovernment. However the eHealth issues appear to be just as challenging as for eGovernment. There are several Ministry of Health agencies involved in eHealth planning however, based on interviews for this report, the scale of expected activity and staff capacity are underestimated. For example, hospital computerization is an acute issue but there have been no plans to assist hospitals centrally with offering some assistance in licensing potential ICT providers, support in designing or selecting ICT systems to ensure inter-operability, or other support or guidance in servicing implemented systems. A lack of hospital computerization is a problem in 70% of hospitals in Latvia. Presently the Ministry of Health's approach is to leave ICT development to individual hospitals. However the hospitals lack ICT expertise to determine what they actually need and they lack the initial relatively small budget amounts for private sector expert consultation on user requirements, system design and project preparation. Consequently, ICT development is highly fragmented and generally too slow.

IV. ANALYSIS OF POSSIBLE POLICY OPTIONS

As has been shown in earlier chapters, the last couple of years have seen a fairly dramatic improvement in Latvia's performance in providing eServices. For example, the creation of the eSecretariat has led to a welcome increase in activity in eGovernment and promises well for the future. The publication of the eHealth Action Plan in early 2007 may also herald the dawn of a new era of action in. eHealth. Nevertheless, development is, in many cases, still in the planning stages. From the analysis of drivers and barriers presented in chapter III, it is possible to identify four key areas where existing policies could be developed further, or new policies need to be articulated, in order to provide an environment conducive to further improvement in eGovernment, eHealth and, more broadly, the development of a comprehensive Information Society in Latvia. The four key policy issues are: (1) front-office and back-office reform; (2) business models; (3) establishment of an eHealth Secretariat; and (4) computerisation of hospitals and medical centres.

IV.1   Front-office and back-office reform

A major and highly complex issue in Latvia is how to deliver eServices in an efficient and effective manner. Real implementation that would provide citizens with the full benefits of the Information Society requires fundamental cultural changes in Ministries and other state institutions. Front-office and back-office reform represents the core principle of how, where and by whom eServices will be provided in Latvia. Call centres and one-stop agencies in the local community are a logical means by which customer service could be improved and trust in the value of eServices could be strengthened.

However, the Government has not yet fully recognised the need for such reform and so there is no policy document or action plan dealing with the implementation of eServices. Consequently no specific tasks or actions to address the issue have been assigned to any ministry. At the same time, the eSecretariat is clearly aware of the need for reforms in this area. Its challenge will be to convince the Cabinet of Ministers of a practical approach to planning and implementing these reforms.

Reform will not be easy. Civil servants will have to adopt a culture of customer-orientation, be willing to take initiatives and solve problems in order to improve service quality. This is particularly important during the early stages of new services when the average level of eService sophistication among service providers and users may be low. The following paragraphs address the key issues that comprise front-office and back-office reform.

Cultural change in public institutions – becoming more customer-oriented and ICT literate. In order to change attitudes, it is not enough to tell people that they should behave differently. People respond much better to incentives. Reform can be approached with the introduction of productivity measures combined with training and performance incentives. Currently, productivity measures are not common in Latvian state institutions. This has resulted in over-complicated administrative procedures. Performance incentives need to be introduced and, where they already exist, increased. This would attract and retain good staff and thus address the current challenges as regards staff quality in the public sector.

The successful implementation of eServices should mean that documents are dealt with by fewer departments. Thus the number of civil servants employed in providing services to the public in general could be reduced. The savings in personnel costs could then be used to provide performance incentives to those remaining. At the same time, the need for ICT maintenance is expected to increase and with it the involvement of private sector ICT specialists, since the private sector will probably provide ICT support more cost-effectively than the public sector.

Centralised planning and policy formation, but with local execution, requires an effective monitoring and a feedback system complemented with the ability to modify the centrally-developed plan to

accommodate local specificities. Local staff in the regions in Latvia will need more technical training to be able to take responsibility and demonstrate initiative based on competence. It will be easier to become more customer-oriented in rural areas because the volume of work tends to be smaller and the environment more friendly in smaller cities and towns. At the end of 2006, a pilot regional support network was introduced in 10 out of the 27 regional municipalities, which currently provides all levels of support in these regions, including ICT technical advice, system installation and staff training.

Simplifying procedures. eService development initiates a whole series of changes across the board. It leads to the need to revise a range of institutional administrative procedures and to the simplification of steps and legal requirements. For example, eSignatures could replace the notary-approved signatures required at the moment, which would dramatically simplify administrative procedures. Moreover the process of switching to electronic provision will, in and of itself, result in simplified procedure because, as each state institution provides a detailed description algorithm for their respective eService, unnecessary complexity in procedures will be identified and very likely reduced.

ICT requirements. The success of front-office reform will depend on the successful development of a new web-based system for secure eDocument circulation. Currently, many state institutions lack such a system. DAUKS was developed as a central electronic document circulation server in 2005, initially for the use of the Latvian State Chancellery. However, for technical reasons, DAUKS has not yet been made available to all state institutions. The eSignature for 50,000 civil servants will be available from early 2007 when those authorised will be able to access the DAUKS system. A short-term challenge is for each state institution to select an appropriate document circulation system that would be able to satisfy their specific needs and also be able to interface with the central DAUKS server. Generally, senior civil servants lack the ICT expertise necessary for selecting such a system Subcontracting private sector specialists therefore becomes a budget and procurement issue.

IV.2   Business models

As already indicated, in order to ensure the successful development and implementation of eServices in Latvia more effective interaction between the public sector and private sectors will be needed.

For example, the public sector in Latvia has the authority to develop specific eServices programmes and will have access to large amounts of EU and state budget funds to develop the necessary system infrastructure. However policy makers generally lack relevant ICT and technical skills in developing and implementing the infrastructure projects that will form the core of the eServices delivery system. Policy makers must face the reality of an increasing demand for such skills. For general project development and management, the government will need to consider new policies dealing with relevant skills training and increased salaries for selected public sector employees in order to recruit, retain and motivate suitably qualified staff able to support the management and further development of high quality eServices. In some specific technical areas, public sector salaries will not be sufficient to attract the needed ICT expertise. In standard cases public procurement will source the necessary skills on a contract basis. In larger, longer-term or more complicated projects, public-private partnership (PPP) methodologies may be appropriate to share the risk and benefits of the specified work. Therefore new policies on PPP methodologies will need to be formulated to balance the budget constraints with the skills and ICT systems needs. Buying ICT services from the private sector will be more expensive in the short-term but is likely to be a more cost-effective solution over the medium to long-term.

Data exchange and system maintenance costs. The exchange of data between state IS incurs costs, however currently the costs are not analysed or identified and who pays for what has not been discussed or agreed. For eServices to be sustainable the revenues and true costs of each process need to be identified and the financial management system needs to be transparent and effective. Similarly, ICT system maintenance is an on-going cost that needs to be addressed in terms of budgeting, service procurement and contractual arrangements with qualified ICT service providers.

Financial incentives for users. The current concept of eServices in Latvia provides on-line access to state institutions to a variety of data on individuals and enables eDocument circulation and processing. This model defines the state institution rather than the private individual as the "user". In order to encourage quicker uptake of eServices, a variety of financial incentives could be implemented. Incentives could apply both to the institutions that provide services. For providers examples include: additional budget allocations for achieving pre-defined levels of service, for processing a higher proportion of documents electronically rather than in paper form. To promote productivity improvements, the given state institution should be able to retain a certain share of the cost-savings generated. The administrative cost per transaction is relatively high when dealing with private individuals and so state institutions should have incentives to deal with companies through wholesale transactions.

Potential financial incentives for users as private individuals includes tax deductibility of ICT capital expenses and for actual ICT usage expenses; discounts for using eServices rather than regular services for the same task; and subsidies for selected higher-risk groups such as older people, residents located in remote or rural regions, and low-income citizens. However, currently in Latvia there are no financial incentives to promote private individual use of eServices. The concept of eServices users in Latvia as primarily state institutions rather than private individuals is discussed further in chapter V as an issue that needs further research before specific policy development is possible.

Hospitals in Latvia tend to lack understanding of how financial mechanisms could be used to generate income and reduce operating costs. For example by charging patients a lower rate for on-line initial consultations as compared with a face-to-face consultation or to achieve a short-cut as compared with a traditional consultation. Gains could also be achieved by using cost-efficient ePrescriptions in place of the more expensive and less information providing paper-based prescriptions. A broader financial principle that needs further development is to persuade individuals to preserve health rather than just treating illness. For example prophylactic check-ups could be encouraged and in this telemedicine and easy and cheap on-line check ups could play a role.

Private sector out-sourcing and PPP financing. During 2005 and 2006 the eSecretariat contracted a number of companies in various projects relating to the development and implementation of eServices. For example, RIX Technologies is developing the IVIS integration tool, Olimps is producing system standards and metadata, and Ernst & Young have assisted the eSecretariat with policy development. The RIX Technologies contract is expected to continue for several years to ensure the successful implementation and subsequent improvement of IVIS. Other small local companies also provide ICT support on a contract basis.

In Latvia the Law on PPPs was developed in 2003 and there is a PPP Association of main players, however the latter are interested primarily in waste management, city heating, and building services management. Currently state institutions in general are unclear how PPP financing could be applied to eServices and consequently PPP development in this sphere is limited. However, for example, a private company could own and be responsible for the ICT infrastructure (computers, networks, etc) supporting a particular IS and the state institution as customer would pay an agreed fee to use the infrastructure.

There are many policies, staffing, budgeting and IS system solutions needed to achieve effective eHealth services. Broad development is required from a low level, comprising data capture and data entry, where hospitals and GP offices need simply to be computerised and eDocument functionality needs to be developed. Larger healthcare providers already have some IS capability but the majority of the smaller hospitals and rural healthcare providers have very limited IS systems. Healthcare reform will need to take into account the wide disparities between Riga and rural regions.

The main causes of death in Latvia include heart disease, respiratory disease and cancer, and each requires expensive diagnostic and treatment facilities, and therefore the economics of managing these

diseases ensures they remain the responsibility of the public healthcare sector. However there are many other more minor medical conditions and treatments that could be managed by the private sector. As a policy issue the Ministry of Health needs to develop a plan for greater private sector involvement in these areas.

IV.3   Establishment of an eHealth Secretariat

The successful example of the eSecretariat in the development of Latvian eGovernment suggests that a similar coordinating institution could prove to be very effective in eHealth and indeed the seventh priority of the eHealth action is precisely to create an eHealth Programme Administration. However, this is the priority with much the least financing with most of it in any case being end-loaded. Presently there are several Ministry of Health agencies involved in eHealth planning but based on interviews for this report, the scale of expected activity and staff capacity are underprovided. For example, hospital computerization is an acute issue but there have been no plans to assist hospitals centrally with offering some assistance in licensing potential ICT providers, support in designing or selecting ICT systems to ensure inter-operability, or other support or guidance in servicing implemented systems. A lack of hospital computerization is a problem in 70% of hospitals in Latvia. Presently the approach of the Ministry of Health is to leave ICT development to the individual hospitals. However the hospitals lack ICT expertise to determine what they actually need and they lack the initial relatively small budget amounts for private sector expert consultation on user requirements, system design and project preparation. Consequently, ICT development is highly fragmented and generally too slow.

Computerisation of healthcare institutions is indeed one of the priorities of the Action Plan and indeed will have considerable resources allocated to it. However given that eHealth is well behind in its planning, development and implementation, a focussed and adequately resourced eHealth Secretariat is essential for realistic policy planning, coordination, development and evaluation and development of the many projects of the Action Plan and beyond..

IV.4   Computerization of hospitals and medical centres

The current approach of Ministry of Health on ICT development is that while the expectation is that hospitals should computerise, the Ministry has had no plans to support or advise to hospitals on how to do it, which ICT hardware or software to use, how to define user requirements, how to procure ICT assets and how to maintain them after installation. The ICT issue is left to individual hospitals and the market to solve. Consequently there are a wide variety of ICT systems currently implemented in the more proactive healthcare institutions that have been able to access at least some financing. The Action Plan will address some of these issues e.g. it is proposed to develop a single IS standard.

Nevertheless the Action Plan does not envisage a comprehensive programme of computerisation, rather some pilot projects. We propose that on the basis of such pilot projects the Ministry of Health (or the putative eHealth Secretariat) develops a system for evaluating and licensing potential ICT suppliers in Latvia, for defining performance standards and user requirements and system integration requirements. Once the healthcare IS are updated and developed according to those proposed under the eHealth IS architecture, the Ministry of Health will need an effective integration tool. To date however, there is no indication from the Ministry of Health that they have discussed this policy issue with the eSecretariat in order to gain the lessons learned from their experience with IVIS.

In conclusion, the Ministry of Health needs to play a much more active role in assisting state hospitals and medical institutions to achieve adequate IS development. The Ministry will benefit directly from this input because in due course the Ministry itself will need to integrate the ICT systems of the healthcare institutions.

V. FUTURE R&D CHALLENGES

V.1 Future challenges relating to eServices in general

The current concept of eGovernment Services is actually based on principles of 'eGovernance' rather than 'eServices'. Currently eServices enforce users' legal requirement to provide specific information and to submit documents according to a defined format and frequency to various state institutions. Whereas the usual 'services' concept implies that users as customers receive a certain service according to their demand and need, rather than according to the needs and requirements of state institutions. Therefore, eGovernment Services, with successfully integrated IS, actually becomes a tool for greater state control rather than improved 'customer service'.

As a conclusion, there are different drivers for eServices development with quite separate objectives, at times conflicting, for the needs of state institutions and for the needs of private individuals. eGovernment Services are driven by government policy, while real eServices for customers are driven by market forces which reward good service with repeat business. The presence of these potentially conflicting models needs thought on how they might be reconciled.

V.2 Technical challenges for eGovernment and eHealth

Data access across Member States. Different ICT systems have been and are being developed in Member States with the result that interoperability currently is very limited. In order to support the free movement of people within Europe, a variety of integration tools will be needed to enable effective data access by public institutions when dealing with EU citizens and visitors from one Member State living in or travelling through another Member State. In such cases a variety of personal data would need to be accessible from the home country in the new host country, for example, citizenship, residence address, insurance records, medical and pension payments, healthcare records and children's school records. The general challenge will be the process of providing data access between EU members states. A more immediate challenge is to decide the common language in which data is recorded and provided. English would be the logical choice but not everyone is likely to agree on English as the common language. Intra-EU data access relates also to the use of the eSignature. Latvia has a very secure eSignature, however other Members States do not have the hardware or software to read or accept the Latvian eSignature. How will eSignatures in general be used among Member States?

Defining the form and functionality of such integration tools would require significant research and development across the EU.

eGovernment ICT systems in Latvia are tied to Microsoft products as the result of strategic marketing by Microsoft. Microsoft has provided significant financial incentives to the government to install and use Microsoft products in the public sector. While the first range of Microsoft products were provided for free or at a deep discount, the challenge for the future will be to assess the costs and benefits of changing to alternative software that costs less, or continuing with Microsoft but with an increasing price. Further research is required to evaluate the Microsoft products alongside alternatives such as Linux, Oracle and Java.

V.3　Behavioural challenges for eGovernment and eHealth

Critical to the successful implementation of eGovernment and eHealth services in Latvia will be the development of effective marketing strategies to raise awareness of the benefits of eServices. Complementary training programmes will be needed to increase user uptake. Lessons should be taken from the successful Latvia@world training programme run by LIKTA to encourage people to use computers and the Internet. Older people in rural areas have been a key target audience of the programme. The ERDF could be a source of financing for such marketing and training activities, which would be delivered by combined teams of public sector and private sector experts. Research is required to create appropriate marketing materials and channels, and to develop suitable training packages.

V.4　Future challenges relating specifically to eHealth

As the relevant eHealth IS are integrated and the data become accessible, the Ministry of Health will create a powerful tool to identify and describe the current state of health of the Latvian population and of any demographic group it cares to define. More importantly, with appropriate statistical algorithms, the eHealth system will be able to forecast the future healthcare needs of the population or of any defined sub-group. Significant research and development, prototyping and testing would be required before such a predictive public health tool could be implemented. However it is likely to have a major impact on healthcare policy, budgeting and the provision of healthcare.

Healthy lifestyles should be encouraged and rewarded and costly treatment of preventative diseases should be discouraged. The eHealth platform in Latvia will create a very cost-efficient channel through which the Ministry of Health would be able to promote good health practices and encourage individuals to take primary responsibility for their own health, rather than relying on doctors to inform them of their state of health.

eHealth services list. It would be desirable to have a benchmark by which progress in the development eHealth could be assessed. Best would be a common European list so that progress could be internationally benchmarked, as is the case with the 20 services for eGovernment. Even a local list would be helpful for self-monitoring.

eHealth in Latvia will need new IS and several new databases to create the EPR national register. This is a challenging task requiring substantial research in technical functionality and process operations. The key challenge will be to achieve high information quality of EPR because past data are not complete and they are in various paper forms. In Latvia from 1 January 2007, all babies born will have their personal and health data input into a new pilot database system. However, for the current population, health records are mostly in hard copy form, in a variety of formats and probably stored in a number of hospitals, clinics and medical centres. The government is still to decide whether to input all historic patient health records into a central system, or to maintain the existing hard copy files and to use in parallel electronic formats and hard copy formats. This is both a huge technical challenge (and therefore a huge financial challenge) and a policy challenge. Further research is required in this area. The Latvian Ministry of Health has begun to research international examples with the objective of deriving best practice on data protection and confidential data management.

Financial and structural reform. While the supply of EU and state budget funds for infrastructure development in the coming planning period is assessed as adequate, the financial management of those monies in the hospitals and medical centres is considered an area for improvement. Hospitals and medical centres in Latvia tend to be run by doctors who have limited financial or business administration experience. Interviews with a number of key players in the healthcare sector indicated that financial savings could be made, thereby increasing the funds available for infrastructure development and training. However this requires further investigation in order to develop an accurate forecast of potential savings.

Social issues, for example relating to the elderly, low income housing, homeless people and the disabled, are dealt with in hospitals, which is relatively expensive, rather than in social care centres, which do not exist. In finalizing and implementing the healthcare reform, the government needs to include the creation of a variety of social care centres. One way of taking advantage of the hospital closure programme would be to transform existing hospitals, which are due for closure into social care or day care centres. Of course this only addresses the infrastructure needs.

CONCLUSIONS

This analysis of eServices in Latvia in the cases of eGovernment and eHealth is both backward and forward looking. The backward looking part of the exercise reveals Latvia as a slow starter even by the standards of former communist countries. The forward looking analysis suggests a much more promising future, but not without qualifications.

Our examination of the development of eServices in Latvia points to a very clear turning point at around the date of EU accession in 2004. Prior to that time, policy was fragmented and poorly funded, leading to a situation where, in terms of the EU standard of government eServices, Latvia was firmly located at the bottom of the EU table. Key post-accession developments were the creation in December 2004 of a new ministerial post with special responsibility for eGovernment affairs, followed in January 2005 by the creation of an eSecretariat which consolidated into a single unit the hitherto fragmented responsibility for the development of public eServices. The eSecretariat represents an important achievement in the development of the institutional framework for the delivery of government eServices. This is not just a historical comment or evaluation but also points to an important lesson for future policy – the provision of effective eServices is essentially a network activity involving issues of interconnection and interoperability. Hence, the fragmented responsibilities for individual parts of the network that characterised early developments in Latvia inevitably resulted in a less than optimal outcome.

This is something which should be borne in mind in the development of eHealth which currently lags behind eGovernment. The eHealth Action Plan does indeed make the establishment of an eHealth administration a priority, but funding for this appears to be limited. There is a fear that this initiative may be regarded as secondary in importance as compared with infrastructure development.

Funding has also been of critical importance. Until the accession of Romania and Bulgaria in 2007, Latvia was the poorest country in the EU. This, combined with a low share of government revenues in GDP, meant that the government itself was seriously constrained by a limited budget, especially for infrastructure projects. EU accession has meant that this budget constraint has been effectively removed with estimated public funding for the 'Information Society' amounting to over 321 million euro for 2007-2013. Nevertheless, even though the e Health Action Plan foresees nearly 73 million euro of expenditures on the seven priority areas, the architects of the plan warn that, if funding is not forthcoming, measures will not be implemented. A positive development with respect to financial planning is the commitment by the current government (and broadly supported by most parties) to introduce medium-term budget planning from 2008.

Low incomes in Latvia have also meant that the computerisation of households has been slow and that the availability of broadband has been limited in rural areas. Even so, usage indicators are not as low as supply indicators, suggesting a positive attitude to eServices where they are available. For example, the percentage of households which have Internet access at home was 31% in Latvia and 48% in the EU25 in 2005, whereas online availability of 20 basic public services rate was 10% in Latvia and 50% in the EU 25. Moreover, strongly rising real incomes in Latvia, combined with falling prices, have meant that availability of both computers and Internet in households has been growing rapidly. Latvia, with 31%, has lower Internet penetration than the EU-25 average of 48%. However this is up from 15% in 2004, representing a doubling in Internet penetration during 2005.

Another feature of the initial development of eServices that has policy implications for the future is the observation that the development of eServices has often been motivated by the convenience of new technology for the state institutions rather than the convenience of 'end-users', or for the overall effectiveness or efficiency of electronic solutions. These considerations lead directly to two recommendations: one concerns the need for front office reform in the delivery of eServices and the

other concerns the desirability of changing the 'business model' supporting their delivery. Moreover, these two potential reforms are linked.

Within the civil service in Latvia there remains a culture of bureaucratic process, possibly a legacy of the Soviet Union. This explains why lengthy bureaucratic procedures, with many signatures, official stamps, etc are needed in interactions between individuals or enterprises and state institutions. Fundamental changes are required in Ministries and other state institutions to ensure that the full benefits of the Information Society are passed on to end users (i.e. the public) in the form of simplified procedures implemented through units such as call centres and one-stop-shops. However, it is recognised that one cannot change attitudes simply by asking people to change. Hence we propose that much wider use of productivity measures and financial incentives be made, both for service providers in the public sector and for end-users, to encourage the use of eServices. Financial incentives should aim to support the overall optimisation of the portfolio of delivered services, and take into account the costs and the benefits to all stakeholders - i.e. both the supply side of eService provision and the demand side.

The large amounts of EU funding coming on-stream over 2007-2013 will stretch the in-house capacity of the public sector. We therefore believe that policy makers should already be thinking in terms of involving the private sector more closely on a Public Private Partnership basis and also in policy development on an outsourcing basis.

The EU policy framework has played an important role in guiding policy in many areas in Latvia, including the eServices area, and is likely to continue to do so in the future. Indeed, in the context of eHealth, the absence of a clear a set of objectives, like those for eGovernment, may have slowed down developments. Even a set of standard performance indicators could have a positive pay-off.

There are at least three risks that may still compromise what appears to be a promising future for the development of eGovernment and eHealth in Latvia. These include the failure to implement one or both of the two key institutional reforms that are running in parallel with the drive to develop eServices – namely health sector reform and territorial reform. Health sector reform essentially means the rationalisation (closing of small rural hospitals) of the healthcare system infrastructure and territorial reform means the amalgamation of Latvia's many small municipalities into more viable units. Both reforms are being resisted and both are prerequisites for a fully effective implementation of eServices in eGovernment and eHealth at a national level.

The third risk is that the overheated Latvian economy may collapse into recession. If this were to happen, budget revenues would shrink with predictable consequences for the key infrastructure expenditures needed to continue the positive developments now emerging in eGovernment and eHealth.

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Abstract

In 2005, IPTS launched a project which aimed to assess the developments in eGoverment, 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, 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, Latvia.

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 eGoverment, 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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