

JRC Scientific and Technical Reports



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

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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 - i2010² - 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-government³ and e-health.⁴ Public services have also been included as application fields for ICT in the 7th Framework Programme for Research and Development⁵ and in the ICT policy support programme of the Competitiveness and Innovation Programme (CIP).⁶

Research context

IPTS⁷ has been researching IS developments in acceding countries⁸ 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 States¹⁰ 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.

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

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

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

eGovernment and eHealth in Slovakia

This report was produced by the consortium member from Slovakia, the Slovak Governance Institution. It presents the results of the research on eGovernment and eHealth in Slovakia.

First, it describes government and health system in Slovakia 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

CSO	Civil Service Office
DISAM	eGovernment project for local administrations
DSL	digital subscriber line
ECDL	European computer driving licence
eGEP	eGovernment Economics Project
ESA'95	version of the European System of Accounts
EU10	10 member states of the European Union that joined in May 2004
EU15	15 member states of the European Union prior to the 2004 enlargement
EU25	25 member states of the European Union prior to the 2007 enlargement
EUR	euro currency unit
EUROSTAT	the Statistical Office of the European Communities
FDI	foreign direct investment
GDP	gross domestic product
GP	general practitioner
HCSA	Health Care Surveillance Authority
HIC	Health Insurance Company
HMIS	health management information systems
ICT	information and communication technology
IHIS	Institute of Health Information and Statistics
IPTS	Institute for Prospective Technological Studies Commission's Joint Research Centre
ISDN	integrated services digital network
ISDN	integrated services digital network
ISP	internet services provider
ISPA	information systems of public administration
IST	information society technologies
JASPI	Joint Automated System of Legal Information
LAN	local area network
MF	Ministry of Finance
MH	Ministry of Health
MVK	a Slovak public opinion research agency
MTPT	Ministry of Transport
NCHI	National Centre for Health Information
NGO	non-governmental organisation
NMS	new member states of the European Union
NUTS	Nomenclature of Territorial Units for Statistics used by Eurostat
OECD	Organisation for Economic Cooperation and Development
OP	Operating Programme
PC	personal computer
PDA	personal digital assistant
PHARE	Poland and Hungary: Assistance for Restructuring their Economies programme
PHRD	Japan Policy and Human Resources Development Fund
PIAP	public Internet access points
PPP	public-private partnership
PPS	purchasing power standards
R&D	research and development
SANET	Slovak Academic Network
SIA	Social Insurance Agency
SKK	Slovak crown (the currency)
TNS SK	a Slovak public opinion research agency

UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USD	United States dollar currency unit
VAT	value-added tax
VsZP	Vseobecna zdravotna poistovna
WHO	World Health Organisation

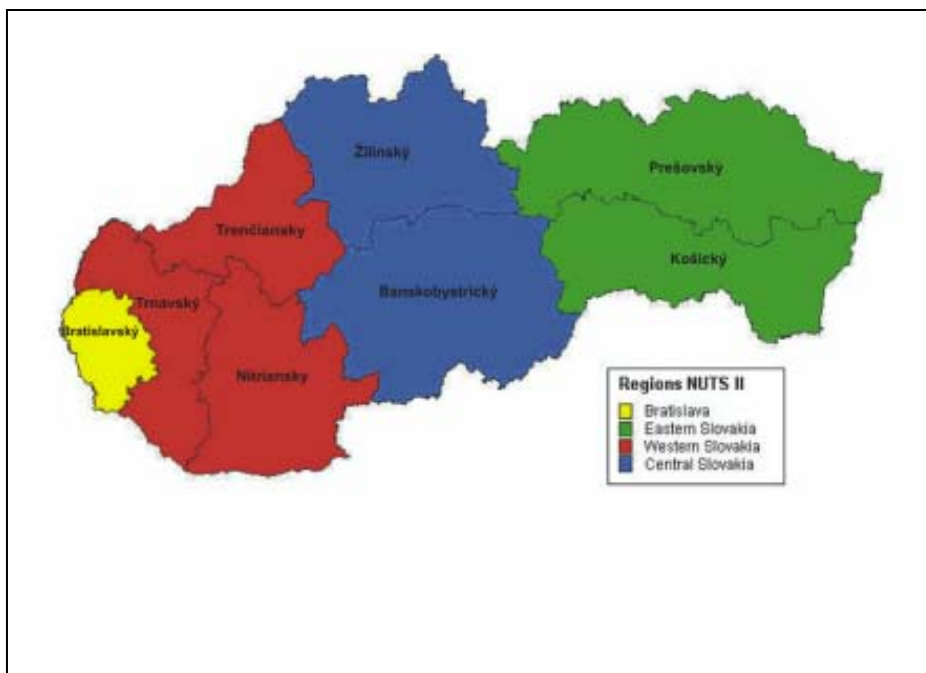
INTRODUCTION: COUNTRY FEATURES

Country Profile: Facts and figures

Table 1: Country profile

General data	
Population	5 389 180 (2005)
Area (sq. km)	49 035
Population density	109.9/sq. km
Urban population	55.9% (2003)
Major ethnic nationalities	Slovaks (86%), Hungarians (10%), Roma (est. 5 – 10%)
Currency Unit	Slovak koruna (1 € = 37.248 SKK, 2006)
Economic data	
GDP per capita PPS	12 900 € (2005)
Real GDP growth rate	6.1 % (2005), 5.4% (2004), 4.2% (2003)
General government deficit/GDP (ESA'95)	2.9% (2005), 3.8% (2004), 3.7% (2003)
Consumer price index	2.7% (2005), 7.5% (2004), 8.5% (2003)
Unemployment rate (Labour Force Survey)	16.2% (2005), 13.5% (H1 2006)
Composition of GDP	Agriculture: 3.5% Industry: 29.4% Services: 67.2% (2005 estimate)
Percentage of households who have internet access at home	23% (2005), 23% (2004)
Broadband penetration rate	1.5% (2005), 0.4% (2004)
Administration structure	
Self-governing regions	8
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Figure 1: NUTS-II¹¹ regions and self-governing regions



Geography, Economy and Demography

Geography

Slovakia is a landlocked country in central Europe with some 5.4 million inhabitants, covering an area of 49,035 sq. km. The topography is dominated by the Carpathian Mountains across most of the northern half, with fertile lowlands in the South. Slovakia borders the EU member states Austria, Czech Republic, Hungary and Poland, as well as the Ukraine in the east.

Economy

Slovakia's gross domestic product has been growing the fastest among the neighbouring new member states over the past few years. GDP growth reached 8.3% in 2006, accelerating from 6.1% in 2005, 5.4% in the previous year and rates over 4% in the two years before. GDP per capita in 2005 reached about EUR 12 900 at PPS exchange rates. In 2005 Slovakia's per capita GDP stood at about 53% of the EU25 average and was projected by Eurostat to converge to the 60% level by 2007.

Slovak economy is highly open with exports driving growth in recent years. Major exports are vehicles, iron and steel, machinery and energy equipment, with EU member states as main trading partners (over 85% of exports in 2005).

Unemployment stubbornly remains the country's major macroeconomic problem. Unemployment fell to 13.3% from 16.3% in 2005,¹² one of the highest rates of joblessness among EU member states. Nonetheless, it has been declining somewhat over the past several years from a high of 19.3% in 2001 on the back of radical structural reforms. Unemployment is spread unevenly geographically with extremely low rates in the Western Slovak region around the capital Bratislava.

¹¹ The administrative division of the country to NUTS- regions: Bratislava, Western Slovakia, Central Slovakia, Eastern Slovakia

¹² Seasonally adjusted, based on Labour Force Survey.

The state budget deficit in 2005 reached 2.9% of GDP, for the first time in recent years meeting the EU's Maastricht Criteria for entry into the Eurozone, which Slovakia aims to accomplish by 2009. In 2003 and 2004 the deficit reached 3.7% and 3.8%. The decline in deficit was mainly a result of strong growth, as well as the better than expected performance of tax collection following the introduction of a 19% flat tax in 2005.

Along with changes in the tax code, the centre-right coalition government led by Prime Minister Mikulas Dzurinda in 2002-2006 enacted broad reforms in a number of key sectors increasing competitiveness. The labour code has been liberalised, the pay-as-you-go pension system has been replaced with a capitalised system, education financing has become formula-based, extensive privatisations have taken place and foreign investment inflows have increased, although still falling short of levels in the neighbouring countries. The centre-left cabinet of Prime Minister Robert Fico, which came to power in the June 2006 general election, has promised to partly reverse some of the reforms to reduce their social impact but most of the major measures have remained intact so far.

The stock of FDI at the end of 2005 stood at USD 13.05 billion with Netherlands, Germany, Austria, Hungary and Italy as the largest investors. Major foreign investment projects have come in the area of automobiles, with a Korean Kia plant in Zilina and a French PSA Peugeot car plant in Trnava opened in 2006, joining the large German automaker Volkswagen plant operating in Bratislava since the early 1990s and making Slovakia the world's largest per capita car producing country.

Demography

The average population of Slovakia is currently around 5.4 million. The population was 5,378,951 in May 2001, when the last Census took place, thereof 2,611,921 men (48.6% share) and 2,767,030 women (51.4% share).

In terms of overall population size, Slovakia recorded moderate increases in 2004 and 2005 after three years of declines and demographers expect these moderate growth rates to be sustainable over the next several years. The share of children in the population has been declining.

Natural increments keep decreasing as the overall mortality remains almost constant (being around 10 deaths per 1,000), while birth rates decrease. The numbers of live births reached historically the lowest level in 2002: 9.45 children per 1 000. After three years of declines, Slovakia recorded moderate increases in natural population growth in 2004 and 2005 and demographers expect these moderate growth rates to be sustainable.

Since the numerous population groups born during the post-war period and during the 1970 – 1980s have now reached productive age, the largest groups of population are 20–34 year old and 45–54 year old persons. Due to the reduction of the population of children and to the growth of the numbers of productive and post-productive age individuals, also the average age of the population and the aging index increase.

Average age of population has risen steadily in the second half of the 20th century to about 36 years in 2000 from just over 30 in the 1950s. Nonetheless, Slovakia remains one of Europe's youngest populations with one of the lowest shares of seniors. Demographic forecasts based on present fertility trends, however, predict the Slovak society will become one of the oldest by the middle of this century.¹³ This is well demonstrated by the aging index. The aging index defined as the ratio of post-productive population (men over 60 and women over 55 years of age¹⁴) to pre-production age

¹³ Potančoková, M., Starnutie populácie Slovenska. In: Populačný vývoj v Slovenskej republike. InfoStat – Inštitút informatiky a štatistiky, Výzkumné demografické centrum, Bratislava 2002.

¹⁴ The *Law on Social Insurance*, in force since 1 January 2004, specifies equal retirement age for both genders at 62 years. There was a 2-year transitional period for men who reach age 60 in 2004-2005. For women, who reach age 53-57 during 2004 – 2009 (2014) there is a 6 to 11-years transitional period - depending on the number of children raised - during

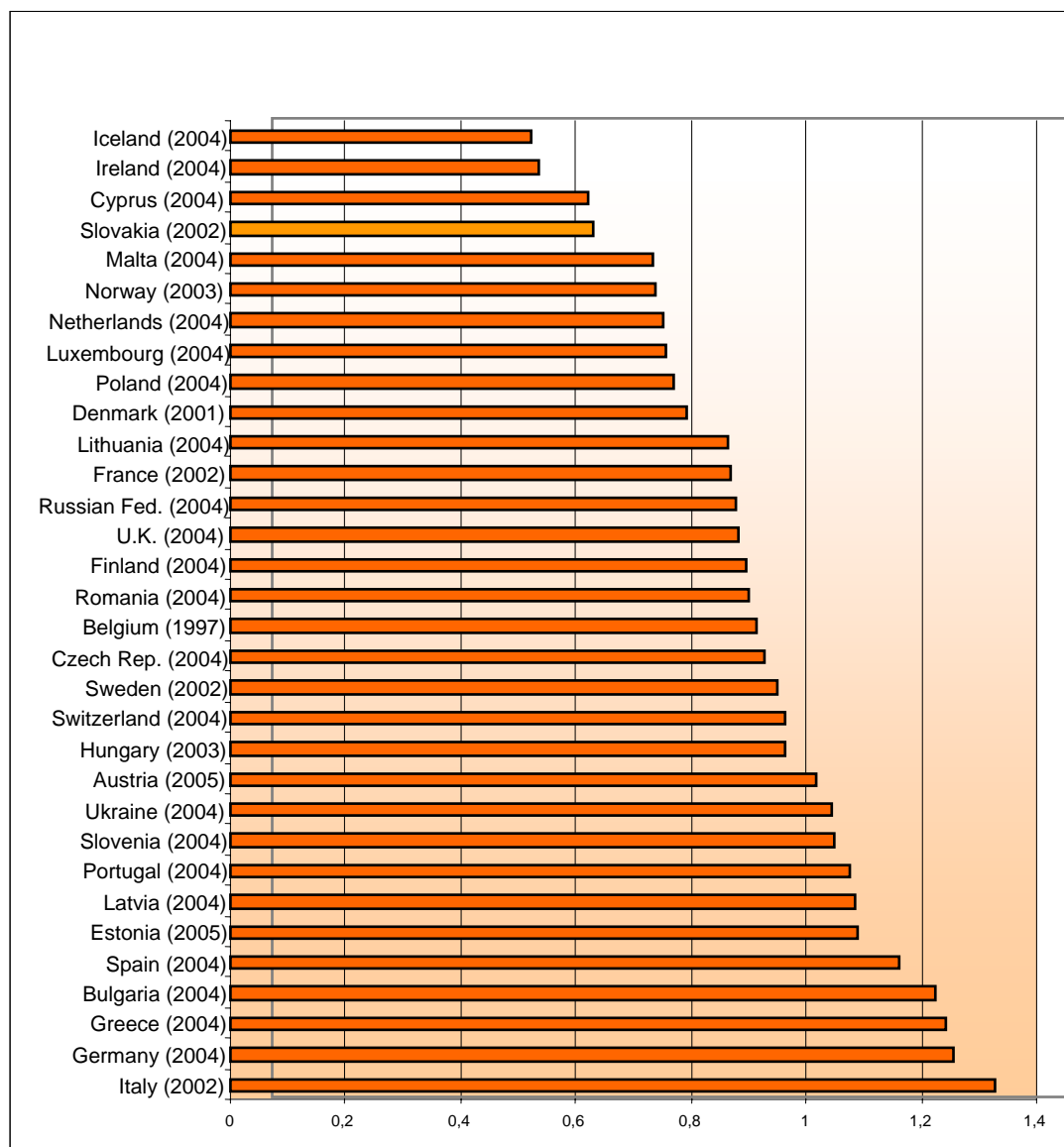
population (ages 0-14 years) keeps dramatically increasing in Slovakia, and showed an increase from 74.0 to 111.2 in 1993-2004. A similar trend can be observed in other European countries (see Figure 2). The ageing index differs significantly by gender. While the males' value was 72.0 in 2004, females exceed the value of 152.0. The reasons include the different legal retirement age in males and females and the substantially higher number of women in senior age groups caused by higher mortality of men in these groups. Sociologists speak about feminisation of the old age.

Forecasts of the Slovak Ministry of Labour for the years 2003 - 2010 predict a significant increase (approx. by 1/3) of the population in age group 55- 64 years. On the other hand, only a minor increase is expected in the age group 25-54 years (approx. by 3 thousand persons).

Although exact data on migration are not available, according to estimates of the Statistical Office of the SR, more than 140 000 Slovak citizens worked abroad in 1Q2006.

which their retirement age will be gradually increased. Until 2004, the retirement age was 60 years for men, while it was 53-57 years for women, depending on the number of children raised.

Figure 2: Aging index in Europe/Country/Ratio of population 65+ to 0-14



Note: The aging index depicted in the figure is calculated as the ratio of population aged 65+ years to population aged 0-14 years. The actual average retirement age in Slovakia was approx. 57 years in 2002, which explains the difference in data quoted in the text and figure.

Source: WHO European Health for All Database, 2005

Government expenditure

The process of decentralisation of public administration began in the early 1990s but major impetus came only with the 1999 Strategy of Decentralisation and Modernisation of Public Administration. This has led to the formation of a second level of sub-national government in the form of right self-governing regions parallel to municipal self-government.

A new system of competencies has been implemented along with fiscal decentralisation, which was approved in September 2004. At present local governments are financed by a share on personal income taxes collected by the state, their own tax collection (real estate tax, pet tax, public area usage tax, accommodation tax, slot machine use tax, slot machine sale tax, nuclear facility tax, and driving and parking in historical areas tax) and local fees (communal and small construction waste).

Table 2: Share of municipalities, regions and the state budget on tax revenues

	2005 est.	2006 forecast
State Budget	82.4%	81.2%
Municipal Budgets	13.3%	14.4%
Regional Budgets	4.2%	4.4%

Source: Author's calculations based on Ministry of Finance, 2006

In terms of departmental structure, the largest expenditure items in the 2006 budget are Ministry of Labour, Social Affairs and Family and Ministry of Education with over SKK 48 billion (about EUR 1.29 billion), General Treasury with SKK 47 billion, followed by Defence at SKK 28 billion, Transport, Posts and telecoms at SKK 27 billion, Healthcare at SKK 26 billion, Interior with SKK 22 billion and Agriculture with SKK 21 billion (see Annex 2 for more detailed information on the budget).

In terms of total size of the public sector, Slovakia reaches a fairly low overall share of taxes on GDP. According to 2004 Eurostat data, the ratio of total state revenues to GDP reached 30.6%, third lowest in the EU, compared to the EU25 average of 40.7%.¹⁵

Health sector indicators

The differences in average life expectancy between Slovakia and Western Europe developed gradually. Two years after the occupation of Czechoslovakia by Warsaw Pact troops, in 1970, the difference between Slovakia and EU was not substantial. Further developments were however entirely different. The gradual improvement of the quality of life and of medical care in EU countries resulted in continuous growth whereas in Slovakia (similarly as in the Czech Republic and other countries of the communist block) there was stagnation.

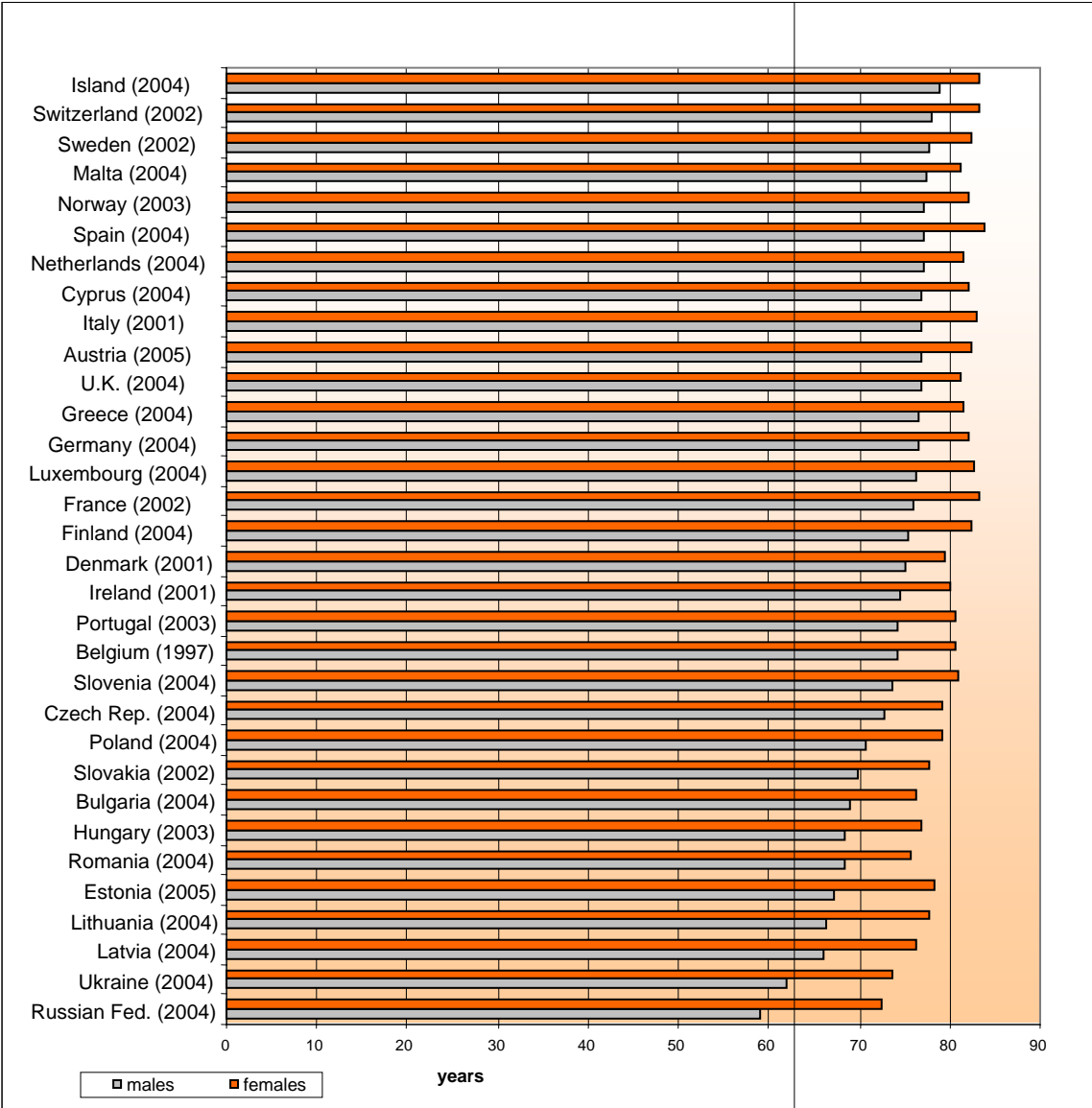
After the democratic changes in 1989, there was hope for improvement, and the average life expectancy actually increased. Subsequently, the growth rate reduced in recent years, so the life expectancy only slightly increased for both men and women. In 2004, the mean age of males and females was 35.2 and 38.4 years, respectively. Compared to 1990, this represents an increase of 3.1 and 2.0 years for males and females, respectively.

An infant born in 2002 would live 73.91 years (life expectancy at birth), if prevailing patterns of mortality at the time of birth were to stay the same throughout the child's life. The latest official data

¹⁵ In addition, however, significant separate revenues are collected in the form of tax-like mandatory contributions to social insurance and health insurance systems.

from 2002 show the values of 69.9 and 77.8 years for the whole male and female population of the Slovak Republic, respectively. The life expectancy figures are relatively low in particular for the male population of Slovakia. Compared to the “healthiest” European countries, Iceland and Sweden, Slovak males live eight years less. For women, the difference in longevity is not as dramatic; still the life expectancy of Slovak women is six years less than for French women. Slovak women and men live longer than do populations in Hungary, Romania, Bulgaria, the Baltic States, as well as than in the Ukraine, Belarus and Russia (see Figure 3).

Figure 3: Life expectancy in Europe (country/years for males, females)



Source: WHO European Health for All Database, 2005

In spite of small territory, considerable regional disparities in life expectancy can be observed. Life expectancy tends to be higher in urban areas (Bratislava, Trnava, Trencin), while it is shortest in the southern agricultural districts. Regional disparities in life expectancy could range from 4 years (females) to 6 years (males).

Mortality

There have been no substantial changes in the structure of causes of death in Slovakia during the recent years. The substantial part of mortality refers to five most frequent causes of death as follows: cardiovascular diseases, cancer, respiratory diseases, digestive diseases and external causes of death. These causes of death account for 94% of all deaths in Slovakia. Significant alterations in death reasons by sex could be observed.

Table 3: Causes of death by gender in percent

	Men	Women
Cardiovascular diseases	47.9	61.3
Cancer	24.9	19.8
Injuries and poisoning	8.8	2.8
Respiratory diseases	6.4	5.1
Digestive diseases	5.8	4.4

Source: Health Statistics Yearbook of the Slovak Republic 2004

Data in the table show that more than three quarters of the deaths are due to problems of the cardiovascular system and malignant tumours. It is striking that these two types of diseases threaten already relatively young parts of the population. Premature mortality is a parameter more significant than total mortality as it is crucial for overall life expectancy as well as for the economy.

The overall mortality from cardiovascular diseases in Slovakia for both men and women is twice that compared with neighbouring Austria and almost four times higher than France. Mortality from coronary heart disease (myocardial infarction) is four times higher for men and seven times higher for women as compared to France. In comparison with neighbouring countries, reduction in early cardiovascular mortality is slower in Slovakia; though the latest trends in this area are quite promising.

Unfavourable development of premature mortality of men from all types of tumours has been observed. Slovak men aged 25-64 take a leading position in Europe's cancer mortality, the situation is worse only in Hungary, the Russian Federation, and Ukraine. Compared to Greece, England, and Switzerland, Slovak men die of cancer diseases almost twice as frequently. Slovak women show lower death rates of cancer than women in the neighbouring countries. Premature mortality of women from breast cancer has been lower in Slovakia over long periods of time than in the Czech Republic and even lower than the average for the European Union; however, there has been a sudden growth of this indicator in recent years.

Morbidity

The structure of morbidity has shown no significant changes. Chronic non-infectious diseases, mainly cardiovascular diseases and malignant tumours, usually take the top positions. This is followed by injuries, diseases of the respiratory and digestive system and diabetes which incidence has rapidly increased. In addition, there is an increasing trend of psychiatric diseases, ranking third among the causes of disability. The number of drug addicts and cases of syphilis are on the rise. So far, AIDS has shown substantially lower occurrence in Slovakia than elsewhere in the European Union. In addition, thanks to immunisation incidences of viral hepatitis A and B have decreased. The values are virtually identical with those for the EU.

Table 4: Selected morbidity indicators

	SK – 1990	EU – 1990	SK – 2004	EU – 2004
Hospital discharges, cardiovascular disease per 100 000	2168.79 (1991)	1992.4	2555.97	2427.16
Cancer incidence per 100,000	340.31	394.68	423.13 (2002)	464.4 (2002)
Tuberculosis incidence per 100 000	27.33	18.62	11.89	11.89
Syphilis incidence per 100 000	0.6	2.25	3.7	2.84
Clinically diagnosed AIDS incidence per 100 000	0.0189	3.6	0.037	1.58
Diabetes prevalence in %	3.7		5.32	
Absenteeism from work due to illness, days per employee	18	10.89	18	-

Source: WHO European Health for All Database, 2004

Health care resources and utilisation

There are 312.31 physicians per 100,000 inhabitants (2004), which is slightly higher than in 1990, when the ratio was 294.08 physicians per 100 000 inhabitants. These ratios are, however, in line with most EU countries. What is noteworthy is that there are only 42.92 general practitioners per 100,000 inhabitants in Slovakia (2004), which is very low compared to other countries in EU (EU average in 2003 was 102.6). The number of GPs has even decreased during transition period; in 1990 there were 44.58 general practitioners per 100 000 inhabitants. Even though the GPs act as gate keepers, there is a general tendency to bypass the primary care level. Primary care includes first contact ambulatory care by internists, paediatricians, gynaecologists-obstetricians and dentists. In some cases patients may self-refer to specialists (ophthalmologists, psychiatrists, etc.). Also chronically ill patients registered at a specialist can access the appropriate physicians directly without using the primary care.

Table 5: Selected indicators on network and activity of health establishments

Country	Year	Number of physicians (per 100 000 population)	Number of GPs (per 100 000 population)	Number of physicians – specialists (per 100 000 population)	Number of nurses (per 100 000 population)	Number of hospital beds (per 100 000 population)	Outpatient contacts per person per year
Slovakia	2004	312.31	42.92	150.81	661.84	698.74	13
Czech Rep.	2004	347.57	71.88	126	853.17	847.44	15.2
Hungary	2004	333.69	65.53	191.39	862.21	782.75	12.56
Austria	2004	345.25	143.82	134.65	601.41 (2003)	834.07 (2003)	.
Germany	2004	339.05	102.35	172.43	768.47	857.93	.
EU	2003	348.03	98.93 (2003)	120.98 (2003)	718.51	591.47	6.75 (2003)
EU15	2003	361.67	102.6 (2003)	107.17 (2003)	727.99 (2003)	583.58 (2003)	.

Source: European Health for all Database, <http://data.euro.who.int/hfad/>

Note: Number of physicians and nurses are in FTE (Full time equivalent), 2004

Like other countries in the region, Slovakia also has a large number of specialists. In 2004 there were 150.81 specialists per 100,000 inhabitants, while EU average was lower (120.78 as for 2003). High number of specialists could be explained by the emphasis on hospital care.

Slovaks utilise health care services frequently. In 2003 they saw a physician on average 13 times, while the average EU citizen did so only 6.75 times.

Health care resources

The level of health care expenditure in Slovakia is mainly determined by wage levels, which form the basis for public health insurance. The second biggest portion of health insurance resources is determined by political decision and comes from State budget as an insurance premium paid for state premium holders (children, unemployed, pensioners).

Public expenditures, as a percentage of total health expenditures, have significantly decreased in last few years, but still count for more than 80%. Compared to other countries, Slovakia is spending a similar share of its GDP on the health care sector (5.9% in 2003¹⁶).

Table 6: Health care resources (in SKK billions)

Source	2002	2003	2004	2005	2006 (p)
A: Health insurance resources	57.0	58.6	62.6	72.3	78.8
from economically active population	38.8	40.8	43.8	48.9	52.5
from State	15.5	16.0	17.9	21.2	23.4
from other payers	2.7	1.8	0.9	2.2	2.9
B: Ministry of Health of SR (minus insurance paid by State)	4.2	4.3	4.3	3.6	2.8
C: Other budgetary chapters	0.5	0.5	0.5	0.5	0.5
D: Debt refund of providers and insurance agencies through Veritel	0.0	8.6	11.5	0.0	0.0
Disposable public resources in health care (A+B+C+D)	61.7	72.0	78.9	76.4	82.1
E: Private expenditures	8.4	10.2	14.9	17.6	19.4
TOTAL RESOURCES (A+B+C+D+E)	70.1	82.2	93.8	94.0	101.5
GDP in SKK billion	1 098.7	1 201.2	1 325.5	1 440.3	1 557.5
TOTAL RESOURCES (as % of GDP)	6.4	6.8	7.1	6.5	6.5

Source: Health Policy Institute, 2005

¹⁶ European Health for All Database, <http://data.euro.who.int/hfad/>

Table 7: Economic performance and the health finance mix

Country	GDP per capita in PPS			Total health expenditure as % of GDP (2003)	Sources of finance		
	1995 (est)	2000	2005 (p)		Public expenditure as % of GDP	Private expenditure as % of GDP	Public / private ratio
Slovenia	68.0	73.0	79.6	8.3	6.2	2.1	75:25
Czech Rep.	69.6	64.6	72.3	7.5	7.0	0.5	93:07
Hungary	49.2	53.0	61.9	6.7	4.6	2.1	69:31
Slovakia	44.3	47.7	55.4	6.5	5.3	1.2	81:19
Poland	40.5	46.1	48.4	6.1	4.5	1.6	73:27
Latvia	33.9	38.4	50.1	5.6	4.3	1.3	77:23
Lithuania	29.7	35.3	45.9	5.9	3.6	2.3	61:39
Estonia	35.3	43.3	52.4	5.4	4.1	1.3	76:24
EU 8	46.3	50.2	58.3	6.5	5.0	1.5	77:23
EU 15	110.8	109.9	108.7	8.1	6.3	1.8	74:26
OECD 30				8.4	6.0	2.4	72:28

Source: Health Policy Institute (based on Eurostat data), 2005

Notes: est – estimation, p - projection

Data are from 2003 except Slovakia (2005), Slovenia (2002) and Poland (2002).

ICT Usage

In Slovakia, 47% of households had access to a personal computer in 2005 compared with 30% in the Czech Republic, 40% in Poland and 42% in Hungary but 58% in the EU15. The stock of personal computers reached 351 per 1 000 population in 2005, a fairly high level.

According to Eurostat data, 23% of Slovaks had internet access at home in 2005, unchanged from the previous year. This represents one of the lowest rates among the EU25 but slightly higher than comparable EU10 countries Hungary and the Czech Republic. However, the share of individuals regularly using the internet was 43%, matching the EU25 average and far above neighbouring countries.

Broadband penetration reached 1.5% in 2005 a very low level compared to the EU25 average but has been increasing over the past two years thanks to growing competition from cable TV providers and mobile operators. A more recent survey by the Statistical Office carried out in April and May 2006 showed that of all households with access to the Internet (26.6%) 43.8% used a modem over a phone line (dial-up or ISDN), 18.2% had DSL access, 25.2% had other forms of broadband access, while 29.2% used wireless access including mobile (see Table in Annex 2 for more detailed data).

Among central bodies of public administration, an Audit of ICT carried out in 2005 found 91% of computers were connected to the internet with 70% connected to LAN networks.

Table 8: ICT usage in state administration

	State administration		Regional Self-governments	Local Self-governments		Total Public Administration
	Central	Local		Cities	Municipalities	
Number of Public Servants (2005)	4 600	37 500	1 700	20 000	41 000	104 800
Number of PCs (2005)	4 000	29 475	1 400	13 000	15 000	62 875
Share of offices connected by internet (%)	100.0	100.0	100.0	100.00	55.00	47.15
Share of offices connected by broadband (%)	100.0	100.0	100.0	97.00	15.50	18.63
Share of offices with own webpage (%)	100.0	100.0	100.0	100.00	16.05	13.76

Source: PD Consulting 2006

The worst situation with ICT usage in state administration is at municipal level. For example only 15 000 public servants at municipalities out of 41 000 have computer and only 55% of those computers are connected to internet and 15.5% offices are connected by broadband. No more than 16% municipalities have their own webpage. The situation is less dramatic on the regional and central level where the biggest shortcoming is the number of PCs per public servant. It can be seen that quite substantial number of state administration employees both on central and regional level do not have computer.

According to National Centre for Health Information's survey, only one fourth of all outpatient departments have access to internet.¹⁷ The use of computers in everyday practice of health workers as well as by other citizens is improving and Slovakia is slowly reducing lagging behind in this field in comparison with the EU countries.

Health insurance companies started to give preferential treatment to the suppliers (employers/health care providers) who submit compulsory data in a form suitable for computerised billing. In the future there are plans to accept only electronic data.

¹⁷ EuroReport, Interview with Peter Ottinger, State Secretary of MH, February 2006.

I: GOVERNMENT AND HEALTH INSTITUTIONS AND SYSTEMS IN SLOVAKIA

I.1 Institutional structure of government

Slovak government consists of three levels – national government and two levels of local self-government (regional and municipal).

I.1.1 National government

The executive branch of the **Slovak Government** consists of 14 Ministries, as well as a number of cabinet-level “other central institutions” and “other public administration institutions” subordinated to individual cabinet Ministries. The Office of the Government provides support for the work of the cabinet, the Prime Minister and Deputy Prime Ministers.

The President of Slovakia has rather a symbolic and representative role. The President appoints new Government or its individual members and accepts the demission of the cabinet members or cabinet as such. He/she also appoints representatives of other central administration bodies, as well as judges of the Constitutional Court or rectors of universities or university professors. The president’s main power is signing or not signing the laws that have been passed by the Parliament.¹⁸

The legislative branch is constituted by a 150-seat **National Council of the Slovak Republic**.

The court system consists of the **Constitutional Court, Supreme Court** and a network of **Regional and District Courts**.

¹⁸ A presidential “veto” can be overruled by a simple majority of all members of parliament. However, it can delay legislation.

Table 9: Executive Branch of Slovak Government

Ministries	Selected Subordinated Central Institutions	Subordinated Local and Regional Institutions of State Administration
Ministry of Finance	Customs Directorate Tax Directorate DataCentrum State Treasury Agency for Management of Debt and Liquidity	Financial Audit Administrations
Ministry of Economy	Budgetary: Slovak Trade Inspection Slovak Energy Inspection Main Mining Office Contributory: Slovak Energy Agency Slovak Agency for Tourism Slovak Agency for Development of Investment and Trade SARIO	
Ministry of Foreign Affairs		
Ministry of Labour, Social Affairs and Family	Office of Labour, Social Affairs and Family National Labour Inspectorate Social Development Fund	Offices of Labour, Social Affairs and Family
Ministry of Health	Office of Health Information and Statistics Office for Oversight of Healthcare	
Ministry of Interior	Police Presidium	
Ministry of Environment		
Ministry of Construction and Regional Development		
Ministry of Education	Office of Information and Forecasting in Education	
Ministry of Culture		
Ministry of Justice		Regional and District Courts
Ministry of Defence		
Ministry of Agriculture	Agricultural Inspection	
Ministry of Transport, Posts and Telecommunications		
Other Central Institutions	Selected Subordinated Central Institutions	Subordinated Local and Regional Institutions of State Administration
Office of the Government of the Slovak Republic		
Antimonopoly Office		
Statistical Office		
Civil Service Office		
Office of Geodetics, Cartography and the Cadastre		Cadastral Administrations
Office of Nuclear Oversight		
Office for Normalisation, Metrology and Testing		
Office of Public Procurement		
Office of Industrial Property		
State Material Reserves Administration		
National Security Office		

Source: Compiled by authors, 2006

The four-yearly parliamentary elections take place as single district, with a 5% threshold for parties for entering Parliament with proportional representation. In June 2006 early elections took place after the former governing coalition of four parties had gradually lost its parliamentary majority. A new Government was formed in July 2006 consisting of Prime Minister Robert Fico's Smer-Social Democracy party, Movement for a Democratic Slovakia-People's Party of former Prime Minister Vladimir Meciar and the Slovak National Party led by Jan Slota.

The Office of the Prime Minister and the four current deputy prime ministers (all but one of whom are also ministers in specific departments) are parts of the Office of the Government of the Slovak Republic.

A number of Ministries have their own network of territorial state administration institutions. These include:

- District Offices of the Ministry of Interior,
- District Environment Offices,
- Regional School Offices of the Ministry of Education,
- Offices of Labour, Social Affairs and Family.

Between 2002 and 2006, Slovakia had a system of Civil Service in place, managed by the **Civil Service Office** (CSO), a Central Government agency in charge of coordinating selection, training and promotion of civil servants to promote depoliticised public service. The system was designed with international technical assistance to replace the previous legal framework which gave little protection to civil servants, leaving the civil service open to sweeping changes after every government change.

As of March 2006 the Parliament approved abolition of the CSO transferring competencies directly to Ministries and a new framework for the civil service is expected to emerge under the current government.

I.1.2 Territorial self-government

Slovakia has two levels of territorial self-government – municipal level and regional level. At the municipal level, mayors and local representatives are elected by popular vote in a four-year cycle.

Major devolution of powers has taken place within the context of decentralisation reform carried out especially since the year 2000. Both levels of territorial self-government enjoy two kinds of powers (competencies):

- “Original” powers given directly by law and financed from the self-government’s own revenues
- “Delegated” powers from the national government financed from the state budget.

In 2005 total expenditure by regions reached SKK 26.6 billion (about EUR 0.7 billion), while municipalities spent SKK 76.8 billion and the state budget SKK 309.1 billion.

Regional governments

The current territorial structure of eight self-governing regions was created as a part of the decentralisation reform and exists since 2001. At the level of regions, the so-called Higher Territorial Units, regional presidents and regional parliaments are elected every four years.

Regions are not subordinated to the state administration nor have any power over municipal governments but cooperate with both the state and cities and villages.

Two regional elections have taken place so far – in 2001 and 2005. The second round of elections of regional presidents in December 2005 attracted 11.07 percent of eligible voters – the lowest turnout of

any election since Slovakia's independence in 1993. At present most regional presidents represent the parties of the current government.

The major responsibilities of regional governments lie in the area of education (running most secondary schools), healthcare (running regional hospitals), social services (orphanages, old age homes), and regional roads. Except for secondary schools, these are the original responsibilities, which regions finance from their own revenues (share on income taxes, road tax). Schools are financed as a part of the formula-based system (fixed amount of funding per student in the given type of schools).

Municipal governments

At the level of individual towns and villages, municipal self-government exists headed by a directly elected mayor and the town/village council. One of the key characteristics of Slovakia's local administration is its extreme fragmentation due to the large number and small average size of municipalities (Slovakia has 138 cities with total population of about 3.04 million or 57% of the total population, 2 736 villages with total population of 2.34 million or 43%).

The two largest cities, Bratislava and Kosice, operate a modified system where a city mayor and council are elected, along with mayors and councils for constituent city parts.

The major responsibilities of local governments are in the area of education (operation of pre-schools and primary schools), lower-level hospitals (polyclinics), communal waste and sewage, social care facilities and local roads.

Table 10: Competencies of sub-national governments

Level of self-government	Original competencies financed from own revenues	Transferred competencies financed by the state budget
Municipal Level	Local roads public transportation public spaces, parks cleanliness protection of nature and environment water management sewage, communal waste territorial planning local development housing pre-schools and primary schools social facilities polyclinics, selected hospitals culture verification of official documents selected misdemeanours municipal police collection of local taxes and fees participation in regional plans	Population registries construction rules selected competencies in education (primary schools and pre-schools)
Regional Level	Class II and III roads, regional planning, regional development, own investment, secondary schools, hospitals, selected social services (old age homes, social services for children, crisis centres, orphanages), cultural facilities, participation in civil defence, licensing of pharmacies and private doctors.	Some competencies in education (secondary schools) healthcare (regional hospitals) road transport (selected roads)

Source: Compiled by authors, 2006

Municipal and regional budgets consist of own revenues from taxes and fees and transfers from the Central Government (mainly for the implementation of transferred competencies, vast majority for primary and secondary education). Own revenues are composed chiefly of local property taxes (for municipalities), share on income taxes (for higher territorial units) and a variety of fees.

I.2 The healthcare system

I.2.1 National level

The Constitution of the Slovak Republic (1993) guarantees universal coverage of comprehensive free-of-charge health care services to every citizen¹⁹ through the means of compulsory health insurance build upon the principles of solidarity, non-profitability and plurality.

The current organisation of the health care system builds upon a mixture of decentralised and centralised structures. The **Ministry of Health (hereafter MH)** acts as the main state executive body responsible for health care and health protection, it proposes the principal directions and priorities of state health policy and prepares and submits the legislation to the Government.

For the purpose of this study competencies of the MH will be divided into following paragraphs:

- Health Insurance
- Health Statistics
- Public Health
- Health care providers
- Pharmaceuticals

The MH controls the health insurance companies, including issuing or withdrawing permits to operate. The **Health Care Surveillance Authority (HCSA, www.udzs.sk)** has been established 2004 by law. It shall strengthen institutional control over health insurance companies, which have been recently transformed into for-profit joint stock companies. The HCSA focus on the content and range of health care services purchased within the framework of the “solidarity package” (basic benefit package), as well as control of health care establishments’ provision of state-of-the-art health care financed from the resources of health insurance companies. The HCSA acts as an independent arbiter between health insurance companies and insured, between provider and insured/patient. Recent development has showed that the HCSA needs also to be authorised to step in negotiation among health insurance companies and providers, if necessary. The establishment of HCSA has taken on some of the regulatory roles of the State Health Care Institutes (was abolished), State Institute for Drug Control, and the Institute of Health Information and Statistics. In December 2006 the present coalition changed the law defining the HCSA in the way that now the Government may recall the Chair of the HCSA without any reason. Consequently on the 24 January 2007 the Government recalled the previous Chair of HCSA and appointed a new Chairperson, Mr. Richard Demovic, who is at the moment also member of Regional Parliament of Bratislava, representing the strongest coalition party Smer-SD. This nomination may influence the independence of HCSA.

The Government has also authorised the **Financial Market Authority** to oversee the solvency of the health insurance companies and introduce the obligation for all health care establishments with a turnover exceeding a specified amount to pass independent financial audits. This shall lead to better transparency of financial flows in the health system.

¹⁹ Basically, all permanent residents in Slovakia are covered by the system. Contractual health insurance is used by persons excluded from the compulsory health insurance (persons without permanent residence and employment in Slovakia, as well as those with permanent residence in Slovakia but having foreign health insurance).

Until recently (February 2006) the **Institute of Health Information and Statistics (IHIS)** was the only provider of country wide health statistics in the Slovak Republic. The IHIS monitored throughout the last few years the status of the population with special focus on the health situation, the network of the health facilities and their activities, manpower and human resources in the health sector, economic status of health services and state of real estates as well as equipment and facilities. Beside the Statistical Office of the SR, the MH was the main user of IHIS data. On the one hand, data collection and primary data processing was located at IHIS. On the other hand, data processing for strategic decision-making was located at MH.

IHIS was not the only source of health data. Crucial information is gathered also by Health Insurance Companies, the Public Health Authority, and the State Authority for Drug Control. Such data collecting practice is fragmented and the data can not be converted. According to some studies²⁰ this setting was not reflecting current needs. Therefore the IHIS has been transformed into the **National Centre for Health Information (NCHI, www.nczisk.sk)** and covers broader scope of activities under one institutional umbrella. NCHI is divided into four specialised departments: National Centre for Health Statistics, National Centre for Medical and Health Information (the former Medical Library), National Centre for eHealth and National Centre for Health Data Processing Standards. The MH oversees activities of the National Centre.

Through the **Public Health Authority (www.uvzsr.sk)**, the MH ensures surveillance and control of communicable diseases; food safety; safe and healthy working and living conditions; and other public health functions regulated by the Act on Health Protection. Most surveillance and control activities are carried out by 36 regional offices of public health following a devolution process in 2004. All 36 regional offices are on-line connected and have access to public health monitoring system.

Health care providers

MH has a competence to define minimal network of health care providers (set a minimum number of outpatient departments and inpatient care facilities in defined regions), otherwise MH does not intervene in relations between providers and HICs.

Drug policy

The **State Authority for Drug Control (www.sukl.sk)** is the institution of the MH responsible for ensuring surveillance of the quality, efficacy and safety of medicinal products for human use and medicinal products used in health care.

Social and long-term care

Social care services in the Slovak Republic are defined as subsequent care, special care and community care. Subsequent and special care is covered through health insurance, while community care is financed by the state budget or through direct payments. Subsequent care follows acute care and includes nursing, rehabilitation, psychological and spa care. Social care institutions charge fees, and are used by families to obtain free-of-charge state care for their older and disabled relatives. Special care includes psychiatric care and care of those with alcohol and drug problems. The community care is provided by private or public entity. Public owner could be either municipality or regional government. Community care largely consists of home nursing care agencies. The number of private home nursing care agencies has grown rapidly. Key problems with regards to social care services include the lack of clear definition of what constitutes social care and the lack of clear classification of the types of financing and benefits under the various social care categories.

²⁰ Primarily studies done under the World Bank grant 2000-2002.

I.2.2 Regional level

Recent developments in decentralisation²¹ have strengthened the **autonomy of self-governing regions**. In order to increase efficiency and improve the quality of public services, the existing health care facilities were transferred to the executive competencies of the self-governments (who thus became formal the founding bodies of the facilities). Current legislation allows regions to establish polyclinics and hospitals with type II polyclinics; maintain a register of health care facilities; issue licenses for the provision of health care in several types of non-state health care establishments (e.g. home care agencies; polyclinics, hospitals with types I and II polyclinics, psychiatric hospitals, etc.); hear appeals against the decisions of health facility managers; ensure health care coverage among health care establishments; establish and operate secondary nursing schools; participate in health prevention programmes. In 2003 the management of 44 hospitals was transferred to the regions. Of these, 16 hospitals with type I polyclinics were transferred to municipalities and 28 hospitals with type II polyclinics were transferred to the regions. Following adoption of the “Transformation” Act No. 13/2002, another 24 hospitals became not-for-profit organisations.²²

Municipalities have also gained new powers. Since January 2002 they have the authority to: establish outpatient centres, including first-aid centres and outpatient departments in social care facilities; establish specialised outpatient facilities, polyclinics, type I hospitals and hospitals with type I polyclinics; establish home care agencies; participate in health prevention programmes and approve daily working hours in non-state health care facilities.

I.3 Healthcare ownership and financing

The Slovak health care system is financed by a mix of public and private sources. Public expenditure covers more than 80% of all health expenditures. Health insurance premiums represent by far the most important source of funding.

Five health insurance companies manage mandatory social health insurance expenditures. The largest, General Health Insurance Company (Všeobecná zdravotná poisťovňa), covers about 65% of the population. The railway, army and police health insurance company (Spoločná zdravotná poisťovňa) holds 13% of the health insurance market. The rest of existing HICs each cover less than 8% of the market. Recently two new private companies have entered the market for mandatory health insurance. Due to a huge recruitment campaign, significant shift of policyholders towards private HICs has taken place as of January 2007. However, all the above-mentioned expectations may not materialise, because the current Minister of Health presented several steps that he would like to take in short future that might reverse described outlook (for details see Chapter I.5.2.).

²¹ The introduction of the so-called Competence Act in 2001 (Act No. 416/2001 Coll.) set out five phases (January 1, 2002, April 1, 2002, July 1, 2002, January 1, 2003 and January 1, 2004) for the transfer of individual responsibilities from state to the self-government for more than 400 types of public services (including social services, education and provision of health care).

²² Trend Weekly, *Premena na neziskovky nemocniciam (ne)pomohla*, March 28, 2006.

Table 11: Shift in number of policyholders as of January 2007 – division of Health Insurance Market (number of insured citizens)

Health Insurance Company	August 2006	Net gain/loss	% change
<i>General Health Insurance Fund (Vseobecna zdravotna poistovna)</i>	3 405 318	-329 783	-9.7
<i>Joint Health Insurance Fund (Spolocna zdravotna poistovna)</i>	681 255	-52 761	-7.7
Apollo	465 566	-23 924	-5.1
Sideria	397 671	-69 371	-17.4
Dovera (Trust)	348 398	+19 017	NA
Union zdravotna poistovna (Union Health Insurance Company)		+390 472	NA
Europska zdravotna poistovna (European Health Insurance Company)		+66 297	NA

Source: Health Care Surveillance Authority, October 2006.

Note: The two HICs in italics are State owned (their solvency is guaranteed by the State). The HICs Sideria and Dovera merged in 2007. The last two HICs are new entrants on the market. Current law allows citizens to change their HIC only once per year, on January 1, if the request is made before the end of September of the previous year.

The insurance companies collect contributions that are currently set at 14% of income for employees, calculated on the basis of maximum income of treble of average monthly wage (2004 average wage presently used for the calculation was SKK 15 825 or about EUR 425, while in 2005 the average wage rose to SKK 17 274). The HICs are permitted to retain only 10% of their collections and is required to deposit the rest in an equalisation pool, which is then redistributed among the HICs based on a risk-adjustment formula covering 40 age/gender sub-groups. The Government contributes for non-active population, using a formula set annually by the Parliament. In 2003, the contribution rate was 14% of 70% of the minimum wage.

The five HICs in the Slovak Republic that are responsible for financing health services covered under the state guaranteed basic benefits package, perform insurance functions only nominally and do not function as active purchasers of health care services. Until recently the prices for health services were set by the MH. Prices have been deregulated only since May 2006. Finally, this deregulation has to change the persisting contradiction when the health sector was “selling services for regulated prices and to the contrary purchasing everything at deregulated prices”.²³

Reimbursement rates for outpatient and hospital inpatient care are defined in terms of global budgets, which in turn are set historically. The HICs contract with all providers - i.e., there is no selective contracting - and the existing contracting arrangements between the HICs and health providers are weak.²⁴ HICs set global ceilings for contracts with health providers, but these ceilings are continuously challenged by the providers, who demand payments for claims that exceed the contracted volume, using arguments such as providing emergency care and enforcing entitlements for the insured. Due to several steps taken (i.e. autonomy granted to hospitals), hospitals currently put much more effort in controlling service volumes and costs than before when they faced a soft budget constraint from the state and experienced repeated financial bailouts. Therefore, HICs have only recently gained control over the volume of services provided. HICs are subject to mandatory independent audits, financial reporting and solvency requirements. The Financial Market Authority oversees the solvency of HICs.

The health care sector has gradually become more attractive also for private equity groups, who act not only as owners of health insurance companies, but also as providers of health care services. The current trend is to integrate health care services - establish policlinics offering a full range of services, which can be found elsewhere in fragmented manner.

Currently, two health insurance companies (approx. 15% of market plus newly recruited premium holders) are owned by private equity group Penta. Penta also owns about 30 pharmacies, policlinics in

²³ EuroReport, Interview with Peter Ottinger, State Secretary of MH, February 2006

²⁴ Contracting arrangements shall change since 2007. Private HICs want to use selective contracting in order to introduce quality tools.

town of Ziar nad Hronom, 36 rescue units and a hospital specialised in respiratory diseases²⁵. J&T, a competing group has also increased its activities in the health sector. J&T started with ownership of spa facilities, and currently it is applying for a licence to establish a HIC.

Almost all primary and majority of secondary health care providers have become privately operated²⁶.

Table 12: Number of outpatient departments by type of ownership

	State	Private	Total
GPs for adults	152	2 091	2 243
Paediatricians	1	1 154	1 155
Gynaecologists	12	512	524
Dentists	88	2 494	2 582
Specialists	1 982	4 898	6 880
Total	2 235	11 149	13 384

Source: National Centre of Health Information, 2004

There are 74 hospitals including 10 teaching hospitals.²⁷ The ownership of the majority of hospitals has been transferred to regional or local governments. Only a few hospitals (major regional and teaching hospitals and some specialised inpatient care providers²⁸) remain owned by the state.

Newly implemented policies have generated market-like conditions and have encouraged hospitals to operate like private entities. Current legal conditions²⁹ have allowed hospitals to change their legal status from mostly state contributory organisation into joint-stock companies or not-for-profit hospitals. Both legal statuses grant hospitals greater administrative and managerial autonomy. According to the MH, in 2002 there were very few health care establishments managed responsibly and with a balanced budget. The change has contributed to the balancing of budgets of majority of health care establishments³⁰ (if the compulsory real amortisation/depreciation of the assets is not taken into consideration). Autonomous hospitals have lost the implicit government guarantee, which sends an important signal to suppliers that they cannot simply continue to lend to hospitals. This has created hard budget constraints for hospitals, and forces them to give higher priority to efficiency. Autonomous hospitals are now allowed to retain savings and keep revenues, which may then be re-invested in the hospitals, thereby generating additional incentives for the hospitals to change the input-mix and align inputs more closely with outputs in order to rationalise and implement rationalisation plans.

Despite the tendency to transform all hospitals into either joint-stock companies or not-for-profit hospitals, there are still several hospitals under state control, operating as state budgetary organisations. The transformation of the remaining hospitals failed mostly due to political reasons – resistance of management or politicians. According to the Health Policy Institute in March 2006 there were 74 hospitals, out of which eight are joint-stock companies, 29 not-for-profit, 30 contributory organisations and seven limited liability companies.

Although the number of state-controlled hospitals is decreasing, the state still plays a dominant role, while two thirds of all inpatient care (hospitalisations) take place in large hospitals.³¹

²⁵ Hospodarske noviny, Penta dá miliardy na nové polikliniky, February 17, 2006

²⁶ In order to open a private practice, physicians require a licence from the regional government.

²⁷ Health Policy Institute, March 2006.

²⁸ Hospitals are categorised according to the previous three-tier hierarchical structure (by the complexity of services provided). First category hospitals are regional and include four departments. Second category hospitals are established at the district level and contain a greater range of departmental specialities. Third category hospitals include highly specialised institutions and facilities associated with medical schools.

²⁹ Act No. 578/2004 Coll. on Healthcare Providers.

³⁰ EuroReport, Interview with Peter Ottinger, State Secretary of MH, February 2006.

³¹ Trend, Ako podnikat' v zdravotníctve, September 14, 2006

Experts estimate that as of 2006 private capital was invested in 32% of all Slovak hospitals.³² In many hospitals profitable departments like laboratories, etc. have been outsourced to private providers.³³

I.4 Involvement of citizens and businesses in governance

Freedom of access to information is guaranteed by Act No. 211/2000 on Free Access to Public Information. Rules on public commenting procedures guarantee the public access and right to comment on legislative proposals and non-legislative materials before they are discussed by the cabinet.

Access to information is provided without the necessity for justification to anyone to any information held by the public administration, which is not classified as secret. In practice, the enforcement in courts has a tendency to be slow but consistently, courts have ruled in favour of access to information, ordering public institutions to disclose information requested. The law recognises the internet as a legitimate medium both for the dissemination of information and to request information.

For all Government materials with the exception of classified materials the commenting procedures are open to the public. Materials have to be posted on the internet for at least 15 days and any member of the public can submit comments (objections). If a comment is signed by more than 300 persons, representatives of the proposing institutions must meet with their appointed representative. Before government approval, all comments and response of the proposing institution to the objection must be compiled.³⁴

At municipal level the transparency and openness of the policy making process is more limited and varies across municipalities. In some municipalities local civic initiatives are closely involved in local policy-making and oversight.

Partly thanks to the heritage of a government with authoritarian tendencies between the years 1994-1998 Slovakia has a tradition of a vocal civil society involved in policymaking. A number of influential think-tanks and watchdogs exist with a strong voice in public policy formulation. In the health sector there are several organisations active as an advocacy group (patient rights, disability, etc.)

Voter participation in the latest general election in June 2006 reached 54.67%, down from 70.06% in 2002 but still represents the highest voter turnout in comparison with elections to other institutions. Second highest participation in recent elections was during the last elections to municipalities in December 2006 (47.65%). In spring 2004 43.5% of voters participated at the election of Slovak President. On the other hand the elections to European Parliament in 2004 attracted only 16.96%. However, the lowest voter turnout so far was in the second round of regional elections in December 2005 (between 7.12% in Trenčín region and 16.19% in Nitra region). The decrease in participation of voters can be caused by several factors. Disappointment of people by politicians in general is cited as reason on central level elections (Parliamentary and Presidential elections). The people expected that their economic situation will improve much faster after the change of regime from planned to market economy. In the case of regional level, the low voter turnout can be caused by novelty of the regions and elections of regional president and members of regional parliaments. The participation of voters in the elections to the European Parliament is low in all EU member states, because the EU institutions are quite distant from EU citizens. In new member states the voter turnout is further negatively influenced by novelty of these elections.

³² Presentation of Peter Pazitny: "Capital investment in Health Care...", Note: The legal status of a not-for-profit hospital is also considered a form of private ownership.; www.hpi.sk

³³ Trend, *Premena na neziskovky nemocniciam (ne)pomohla*, March 28, 2006

³⁴ Commenting procedures differ slightly for legislative proposals and for non-legislative materials.

I.5 Recent policy and institutional reforms

I.5.1 Government

Strategy of Public Sector Reform adopted in 1999 by the first cabinet of Prime Minister Mikulas Dzurinda has served as the key blueprint for recent reforms in the public sector and the extensive decentralisation that has taken place. The strategy declared five key areas to strengthen by reform:

1. Civil Society – to strengthen its role
2. Subsidiarity – increased application through decentralisation and deconcentration
3. Efficiency – reducing public administration expenditure and allowing Central Government to focus on key tasks of economic policy, international cooperation and European integration
4. Transparency – increased public oversight to improve quality
5. Flexibility – greater flexibility through decentralisation

Based on the strategy, decentralisation of power and fiscal decentralisation were carried out in 2000-2004. A new tier of self-government, eight self-governing regions were created. While gradual decentralisation of power had been taking place since the 1990s, the later reforms were much wider in terms of creating the new tier of sub-national government and in transferring much greater responsibilities to municipalities.

In 2000 the government carried out and approved the Audit of Activities and Financing of Central Institutions of State Administration and Other Institutions, which has served as a key blueprint for vast public administration reform. The Audit was very ambitious in its scope and only some parts of its recommendations were later implemented. Key findings and recommendations included:

- need to reduce number of individual central administration bodies
- need to eliminate tendency of bodies to control activities, which are general in character
- need to reduce duplicity and excessive fragmentation of institutions and activities
- problem of management focused on inputs rather than outputs

The Audit led to the introduction of new standards in assessing costs of public administration services, treatment of commercial activities of public bodies, shift of policy-making activities to central bodies from their subordinated bodies.

In part based on the results of the Audit, a system of civil service was created led by an independent Office of Civil Service (hereafter CSO). CSO has been however abolished in 2006, because it did not fulfil the aims that led to its creation. It was expected that if there will be an independent office responsible for recruitment of state employees that the selection in state administration will be objective thus the quality of state administration will increase. Unfortunately, the centralisation of recruitments in the CSO did not provide for greater transparency and improvement of selection procedures, but led to even greater rigidity of the process. The second Government of Prime Minister Mikulas Dzurinda decided to abolish the CSO and to transfer the responsibility for recruitment to individual Ministries.

I.5.2 Health sector

The health care system prior to changes implemented in 2002-2006 was described as expensive, non-efficient, creating enormous debts, non-transparent, focusing on healing the ill rather than protecting the healthy. No wonder, the previous socialist health care system was built to cope mostly with contagious diseases, and therefore the system consisted of an extensive network of hospitals and emphasised physical access.

Today, health care faces different challenges such as increase in chronic non-infectious diseases, demographic factors (aging), increase in prices of drugs and technology, rise of citizens' expectations, etc.

Another inherited characteristic from the planned economy was the feeling of inferiority of patients vis-a-vis medical doctors. It is still quite rare for a patient to seek a second opinion from another physician or at a specialised health related website. The superiority and exclusiveness of the physician in the eyes of the patients can be supported by evidence on widespread graft in the health sector. Patients still prefer to "buy" health by giving a bribe than to invest their own energy into the search for better service.

At the same time due to the strong resistance to change in the health care sector and due to lack of clear visions the reforms did not start until 2002.

Particular policies implemented by the former Government (2002 – 2006) were focused on introducing market principles into health care bringing in the competition thus enhancement of quality of services provided (explained in the previous text). A brief summary of key steps to stabilise the health care system includes:

- i) to stop indebtedness (implementation of hard budget constraints in hospitals; abolishment of law protecting hospitals against bankruptcy),
- ii) contain service volume (introduction of fees in outpatient and inpatient care),
- iii) implementation of market conditions (deregulation of prices of health services, so HICs can apply selective contracting; HICs are subject to annual financial audits; HICs solvency is overseen by Financial Market Authority), and
- iv) legal transformation of HICs and some hospitals.

The present Government, which took office in July 2006, declared social solidarity as the key policy goal. The new Minister of Health presented several steps, which are contrary to its predecessor:

- re-introduction of law protecting hospitals against bankruptcy (abolition of step i))
- abolition of fees in outpatient care (step ii))
- reduction of independence of the Health Care Surveillance Authority, by amending the law enabling the government to intervene (e.g., the Government may dismiss the chairman of HCSA at any time³⁵).
- restriction of use of profit by HICs (step iii))

The cabinet also plans to transform the two state-run health insurance companies (General Health Insurance Fund and Joint Health Fund) from joint stock companies back to public institutions. This would enable the institutions to draw financial support from the state.

Due to recent significant flight of health insurance policyholders from state HICs to private ones (number of citizens insured in state owned HICs declined by 10%), MH has announced plans to require all policyholders whose premiums are paid by the state (approx. 60% of population), such as civil servants, children, retired people and women on maternity leave, to be insured by one of the two state health insurers. According to private health insurance agencies, this step would significantly impair competition among HICs.

MH also plans to create a Fund to cover very expensive treatments. This proposal has been criticised as unsystematic by experts pointing to the risk of political control over these funds.

³⁵ Previously the chairman could be ousted only for committing a crime or for acting in conflict with the requirements of the post.

Since the intentions presented by the current Minister of Health represent quite substantial changes in course in comparison with reforms introduced by previous Minister, some experts in the health sector have voiced concerns over possible destabilisation of the sector. Several of the experts interviewed saw a stable vision for the development of the Slovak health sector as one of the key preconditions for improving health care in Slovakia.

II: EGOVERNMENT AND EHEALTH DEVELOPMENTS IN SLOVAKIA

II.1 Institutional structures, actors and funding resources for eServices

II.1.1 Policy making and strategy

Responsibility for eServices in Slovakia has always been subsumed within broader responsibility for information society. Responsibility for policy making and strategy setting in the field of information society has undergone repeated reshuffles. After three years of responsibility at the national **Ministry of Transport, Posts and Telecommunications (MTPT)**³⁶ legislative changes in late 2006 resulted in a shift of responsibilities to the **Ministry of Finance (MF)** as of 1 February 2007 while giving a coordinating role to the **Office of the Government**. Staff previously at the MTPT will move to the MF as part of the changes in 2007.

While there is still no explicit assignment of responsibility for eGovernment, the MF should take over responsibility from the MTPT for the existing strategy documents and action plans in this area.

As of November 2004 the Government had created the post of **Plenipotentiary for the Informatisation of Society** as an advisory institution to coordinate tasks in the area of information technology. The Plenipotentiary, appointed by the Government, was able to submit proposals and reports to the cabinet session only through the **Minister of Transport, Post and Telecommunications**. The plenipotentiary's main tasks involve the coordination of activities contained in the 2004 Strategy of Informatisation of Society and its Action Plan (see section II.2) and all other activities in the area of informatisation. The first plenipotentiary was Mr. Miroslav Kukucka (until end of 2006) whose office was located at the Ministry of Transport, Posts and Telecommunications. Since February 2007 the office of the Plenipotentiary for the Information Society will be transferred to the Vice-Prime Minister's Office at the Slovak Government Office. The new Plenipotentiary for the Information Society should be appointed by the Slovak Government in February 2007.

The **Section for Informatisation of Society**, which existed within the MTPT and moves to the MF in February 2007, performs tasks in the area of policy and strategy. In 2006 the section had about 25 staff and consisted of three departments:

- Department for International, Interministerial and Regional Cooperation,
- Department of Project Management,
- Department of Information Security and Standards.

In addition a small Secretariat within the Section has supported the Plenipotentiary.

The MTPT had also established the **Council of the Government for Informatisation of Society**, an advisory body.³⁷ The Council has 27 members and is headed by the Minister. Government bodies active in the area are represented, along with a small number of representatives of industry, academia and civil society. The council meets two-three times per year to review developments in the area of IST and issues non-binding recommendations. Prior to its existence a Government Council on Informatics existed based on the Act No. 261/1995 on State Information Systems.

Additional committees have been created Based on the Roadmap for Informatisation of the Public Administration (see section II.2.) and have been also formalised by Act No. 275/2006 on Information

³⁶ Official Slovak documents use the term "informatisation of society", roughly equivalent in meaning to the term "information society development", although the denotational emphasis of the term is on spread of ICT.

³⁷ Initiating and coordinating body in the area of the state information system, informatisation and IT.

Systems of Public Administration. MTPT created in 2005 the **Committee for Standardisation of Information Systems in the Public Administration** headed by the Plenipotentiary. The Committee is charged with creating standards for networks, accessibility and data in the information system and contains representatives of Government, local government, industry and civil society. The Committee has established four working groups:

1. Network Standards
2. Basic Data Elements
3. Spatial Identification
4. File Formats

Another **Committee on Information Security** is addressing the issue of secure communications in eGovernment along with other security issues.

eGovernment represents a significant part of the National Lisbon Strategy, which is also coordinated by the **Ministry of Finance**.

In terms of eServices implementation, responsibilities lie with individual Ministries and bodies:

- MTPT for general infrastructure projects (MF as of February 2007)
- Office of the Government for selected national projects (technical operation of portal www.portal.gov.sk, GovNet network, from February 2007 coordinating role in Office of the Deputy Prime Minister for Knowledge Society, European Affairs, Human Rights and Minorities)
- Ministries and bodies for departmental projects
- Social Insurance Agency (eServices within pension and social insurance systems)

At the level of regional and local governments, responsibility for eGovernment policy and services rests with individual regions and municipalities.

Historically, responsibilities for informatics and later information society have moved around Slovak institutions resulting in a lack of a coherent information society policy before the early 2000s:

Table 13: Evolution of institutional responsibility for information society development³⁸

Years	Institution
1993-1998	Statistical Office of the Slovak Republic (general informatics)
1999-2000	MTPT (general informatics)
2000-2003	Ministry of Education (information society)
May 2003-January 2007	MTPT (information society)
February 2007-	MF (information society) Office of the Government (coordination)

Source: Factors and Impacts in the Information Society, Report on Slovakia, 2006 Amendment to Competence Act

In eHealth the main responsibility lies with the **Ministry of Health** through its role in health informatics.

The Slovak eHealth Competence Centre responsible for implementation of eHealth strategies was established only recently (February 2006). It is part of **National Centre for Health Information (NCHI)**, which replaced the former Institute for Health Informatics and Statistics (IHIS). The NCHI covers broader scope of activities under one institutional umbrella:

³⁸ The agenda of eGovernment is a part of the information society agenda.

- Health Statistics
- Medical Library
- eHealth
- Health Data Processing Standards

The NCHI acts as an administrative and executive authority. It should not perform as an eHealth provider nor as supplier of computers and software solution in health sector. The Centre aims to initiate and coordinate eHealth activities. Basically, the NCHI should set standards needed for the support of the eHealth solution. The standards supposed to be outcome of the World Bank supported project (see II.2.1).

Simultaneously with the establishment of eHealth Competence Centre, MH has established an advisory body, **eHealth Committee of Ministry of Health**. It includes various independent experts and shall act as major initiator of eHealth development. The Committee is authorised to issue legislative bills, suggestions for making up professional work groups, etc.

While discussing the institutional arrangements one cannot omit the human resources available both for eGovernment as well as for eHealth issues. Present Government declared an intention to decrease the number of public servants by 20%. This might endanger the administration of Structural Funds for both eGovernment and eHealth. The Minister of Construction and Regional Development responsible for overall management of Structural Funds assess that in 2007 – 2013 Slovakia will have to absorb three times more funds than in 2004 – 2006 programming period and this creates need for 500 more people to administer the Structural Funds.³⁹ Milan Istvan, expert on information society, estimated that as many as 1,500 people needed to be hired to administer Structural Funds in 2007 – 2013. He said the MH and MTPT were among the least prepared departments for the new programming period.⁴⁰

In regard to human resources in health care sector, the interviewed experts further pointed out that the attention shall be devoted to quantity and quality of employees working on strategic documents in the sector, because the present situation is far from sufficient. As will be discussed later, a good quality strategy is missing in the sector, so this point of view cannot be underestimated.

II.1.2 Other interdepartmental responsibilities

A number of other Central Government bodies carry specific interdepartmental responsibilities related to eGovernment:

Box 1: Specialised departmental bodies with tasks in eGovernment

Data Protection – [Office of Personal Data Protection](#) established by the Act No. 428/2002 on Personal Data Protection to oversee independently the processing of personal data
 Certified Electronic Signature infrastructure – [National Security Office](#), a central organ of state administration
 eProcurement – [Office of Public Procurement](#), a central organ of state administration
 Ministry of Education – [Institute for Information and Forecasting in Education](#), in charge of IT in the area of education
 Ministry of Finance – [DataCentrum](#) – in charge of IT in the area of finance and budgeting
 Ministry of Health – [National Centre of Health Information](#) (former Institute of Health Information and Statistics) – in charge of eHealth, health information system standards and health statistics
 Ministry of Interior – [IVeS](#) (Organisation for IT in the public administration) – providing support in software development for public administration
 Statistical Office – [Infostat](#) – analysing conceptual issues of use of IT in public administration

³⁹ SME, Janušek poslal únii plán na eurofondy, December 16, 2006.

⁴⁰ Pravda, Názory, May 19, 2006.

Various eService solutions exist within individual Government Ministries and other central institutions. The key entry point for the public to eGovernment services is the central public administration portal www.portal.gov.sk open to the public in July 2006.⁴¹ The portal was managed by the MTPT (MF as of February 2007) and operated by a unit of the **Office of the Government of the Slovak Republic**. The portal builds on the public information portal www.obcan.sk operated since 2003 by the Office of the Government in response to eGovernment objectives set out in eEurope+ Programme.

II.1.3 Monitoring

Key responsibility for monitoring eGovernment developments now lies with the MTPT (MF from February 2007) and more directly with the Plenipotentiary of the Government for the Informatisation of Society.

The MTPT had authored and been formally responsible for the implementation and oversight of earlier strategies and action plans in the area of informatisation since 2003 (this responsibility will pass on to the MF). In recent years a number of monitoring reports have been commissioned and prepared:

- September 2005 – Monitoring of Accessibility of Websites carried out for the MTPT by the Research Institute of Communications
- Public Opinion Surveys on eGovernment – a survey was carried out in 2005 on usage of eGovernment by citizens and businesses and will take place regularly
- December 2004 – MTPT commissioned ICT Audit – a detailed information audit on the use of IT, future needs and eGovernment potential in public administration central institutions took place
- 2004 - eEurope+ indicators monitoring carried out by Research Institute of Communications for the MTPT

In the current Minerva Action Plan (see section II.2.) the **Ministry of Finance** already played a key monitoring role as the convener of the interministerial committee overseeing the implementation of Slovakia's four National Lisbon Strategy Action Plans.

In theory, Government as a whole is accountable for the meeting of Government approved strategies and action plans. But slow progress on some of these has not had any significant consequences for the Government members formally responsible.

The provision of eServices is not monitored systematically by any institution or unit at the moment. Individual providers have their own limited monitoring arrangements, publishing only selected data.

In the eHealth area, little monitoring responsibility is explicitly articulated. The Ministry of Health has these responsibilities by law and within it the informatisation unit. The newly established NCHI will most probably monitor the eHealth development and report to the MH.

II.1.4 Private sector and civil society actors

Both the private commercial sector and non-governmental organisations have played a significant role in stimulating the development of eGovernment and eHealth services. IT firms and civil society organisations have been active in stimulating discussion on eGovernment, as well as contributing services and expertise to some eGovernment projects.

⁴¹ The portal was financed by the PHARE project Transparency in Functioning of State administration and Public Self-administration, which concluded in 2006.

One of the most active institutions in both monitoring eGovernment and commenting to the Government on its development is the [ITAS](#) – the IT industry association. ITAS is composed of most of the large IT domestic and foreign IT firms active in Slovakia. ITAS has issued statements on eGovernment and its executives have appeared in public discussions. In planning for the 2007-2013 Structural Funds programming period, ITAS has been active in compiling a project pipeline of potential IT projects, including eGovernment, to persuade the Government to allocate larger amounts of future funding to this set of measures.

Individual IT firms offering software and hardware solutions in eGovernment have also been active voices both in terms of organising workshops and conferences and offering public comment on eGovernment developments. The IT companies most active in working with the public administration include the Slovak branches of IBM, Siemens Business Services, Microsoft and HP, as well as a number of domestic companies.

The NGO sector contains several associations active in promoting eGovernment. These include the NGO [Partnerships for Prosperity](#), which has organised seminars and issued statements on the current state of eGovernment. [ITAPA](#), Slovakia's largest IST and ICT congress, which annually contains a section on eGovernment is organised by [APELnet](#), the Association for the Liberalisation of the Economy, an NGO.

Individual local and regional governments in many places around Slovakia have partnered with each other, their associations (especially [Union of Cities](#) and [Association of Towns and Villages](#)). Mesto.sk – a large city portal covering 138 Slovak cities is a result of collaboration of the Union of Cities with a number of civic associations, commercial firms, local ISPs.

Universities, especially those focused on technology, have also taken part in eGovernment research and services provision. Numerous partnerships exist at regional and local level, e.g. with the [Slovak Technological University in Bratislava](#), [Technological University in Kosice](#) and [Zilina University](#).

In eHealth, private health sector is increasing and eHealth services are understood as one of the market advantage, way to promote client oriented approach. Thereby, private health insurers have been an important player in providing access to insurance records on-line.

Most existing eHealth applications for citizens (internet portals) are operated not by public authorities or health insurers but either by not for profit associations or commercial firms.

II.1.5 Provision of eServices

The central access point of Slovak eGovernment services, the Central Portal of Public Administration www.portal.gov.sk is managed by the MTPT (MF from February 2007) and technically administered by the Office of the Government of the Slovak Republic. Individual Ministries manage their eServices usually through their departments of informatics.

The most active areas appear to be the tax administration, customs administration and the Social Insurance Agency. What these have in common is that they interact not only with individual citizens but also with businesses. The only three of the eEurope list of 20 services for citizens and eight services for businesses are provided by the Tax Directorate, a budgetary organisation of the Ministry of Finance and the Social Insurance Agency, a Government agency in charge of pensions and social benefits. The eServices provided only cover some of the main interactions required by law with citizens and businesses.

Of the Government departments with the most potential for eServices provision, the Ministry of Interior has historically been quite inactive. Its role could be crucial, as it runs the system of local state administration.

At the sub-national level, responsibility rests with the eight individual regional governments and individual municipal governments. The Plenipotentiary for Informatisation has a coordinating role at the regional level and cooperates with the municipal level without a specific coordinating role.

In terms of eGovernment services within Government, the largest application in scope is the State Treasury at the Ministry of Finance, which has been implemented gradually over the course of more than six years and finally went into operation in 2004. This project unified the information system for all budgetary units, allowing major savings on debt servicing due to improved Government liquidity control.

IT branches or subordinated organisations exist in a number of Ministries:

- Education – Institute of Information and Forecasting in Education, School Computing Centres (four in different regions),
- Finance – DataCentrum – providing IT support within the whole sector,
- Health – Institute of Health Information and Statistics.

At local government level, in addition to individual governments, two large associations mentioned above, the Union of Cities and Union of Towns and Villages, are both implementing a number of eGovernment projects.

Similarly as eGovernment services have their central access point, MH has created eHealth portal www.zdravie.sk. It covers a wide scope of health related issues, including information on health care system (laws, regulations), links to institution (MH, HICs, etc.), and health related information (descriptions of diagnoses, advisory services, etc.)

Health insurance

The Health Care Surveillance Authority as the regulatory body of the MH in the area of health insurance, uses its website for disseminating comprehensive information in the area. The website (www.udzs.sk) is well structured.

The shift of policyholders has also initiated the launching by the HCSA of online access to the health insurance policy registry (January 2007). Health care providers and citizens can check in which HIC the citizen is insured by entering a personal identifier (birth registration number).

Websites of health insurance companies also provide useful information. They offer necessary information for insured persons, payers, and providers. Since recently (January 2006) HICs provide internet access to personal accounts allowing each citizen to review what procedures and medication has been charged to the insurer. Each of the agencies uses a proprietary solution and in most cases the information available is limited. Some HICs also allow premium payers to submit mandatory monthly statements through their respective portals.

Public health

The State Office of Public Health has 36 regional offices throughout the country. This is the only public authority in the health sector, which has on-line access at all branches to its public health monitoring system.

Health care providers

Providers use the internet as a means of advertising and not as a real eHealth service. For instance, almost each hospital runs a website, but it provides mainly data on organisational structure of the

facility (names of departments) and basic contact information. The same applies to private practitioners.

Drug policy

In the last three years the MH has increased the efficiency and transparency of the drug categorisation process. All the important information (regulations, forms to download, statute of the Categorisation Commission, minutes of meetings of the Categorisation Commission, decisions) can be found on the ministry's website.

The State Institute for Drug Control (www.sukl.sk) is the institution of the MH responsible for ensuring oversight of the quality, efficacy and safety of medicinal products for human use and medicinal products used in health care. The website provides a large amount of information including rulings on individual medications and products.

Private initiatives have become the most frequently used source of health information – including websites focused on lifestyles, pregnancy issues, newborn care, child care, chronic diseases, etc.

II.1.6 Financing

Budgets for informatisation in general and its eGovernment components are fragmented departmentally – each Ministry or other central organ finances its own eGovernment efforts through its departmental budget. The published budget structure does not provide information in a structure that would allow us to clearly separate out eGovernment spending.

While information is available on the Government's hardware and software expenditure, there is no information on specific eGovernment or eHealth expenditure as these categories are not tracked separately.

Overall IT spending of the public administration in 2002, 2003, and 2004 was estimated at SKK 8-10 billion (about EUR 0.21-0.26 billion) by the former Finance Minister Ivan Miklos.⁴² For the same period, the Audit of Information and Communication Technologies carried out for the MTPT calculated that SKK 5.36 billion were spent on ICT, of that 29% on hardware, 7% on information systems concerning internal management, 50% on information systems concerning public administration and 15% concerning services provision.

The eGovernment Expenditure Project (eGEP) estimated Slovakia's 2004 total public administration ICT expenditure at EUR 74.87 million (about SKK 3 billion), with Central Government responsible for vast majority (90%) of all expenditure. The centralisation of ICT expenditure (share of Central Government on total expenditure) in Slovakia was the second highest reported among the EU25, after Slovenia. Expenditure specifically on eGovernment (a subset of total ICT expenditure) was estimated at EUR 6.81 million, less than 10% of the total ICT expenditure. The share of ICT expenditure used on eGovernment is rather low in comparison to the EU25 average of 33%.

In terms of funding, both the pre-accession instruments, Structural Funds and Framework Programme 6 projects have played a role in specific projects (e.g. much of the implementation of European Computer Driving Licence, hereafter ECDL) in the public administration is to be financed from the European Social Fund). Some projects are a result of public-private partnerships with a financing role of private sector participants.

The PHARE project Transparency in Functioning of State administration and Public Self-administration was a EUR 0.9 million project concluded with the launch of the Central Portal of Public Administration. One of the project's activities focused on eGovernment as a possible solution

⁴² SITA, Verejná správa investovala do IT za posledné 3 roky do 10 mld. Sk, February 10, 2005

to corruption. Obcan.sk, its predecessor was financed from the state budget but with participation of Microsoft Slovakia, which provides the underlying technology. The portal was originally developed by a group of private IT companies and then transferred to the Office of the Government at a symbolic price.

EU funds have to a limited extent been also used to finance eGovernment initiatives within the current (2000-2006) programming period since 2004, when Slovakia became eligible for this funding. Individual measures with total funding available of EUR 13.7 million related to eGovernment in 2004-2006 Structural Funds programming involved:

1. Public Internet Access Points (PIAPs) in public libraries,
2. Internet for schools,
3. upgrade of communications for hospitals,
4. development of regional information by Internet.

Table 14: Selected eGovernment a eHealth projects funded by Operating Programme Basic Infrastructure in 2004-2006

Recipient	Project	Funding in SKK
Office of Health Care Oversight	Information System	28.17 million
Ministry of Culture	Informatisation of Libraries	89.98 million
Office of the Government	Preparation of Central Government portal	13 million
Association of Towns and Villages	Internet for Slovak villages with less than 500 inhabitants	9.19 million
Association of Towns and Villages	Cheap and secure internet connections for municipalities in Kosice and Presov regions	8.38 million
Association of Towns and Villages	Cheap and secure internet connection for municipalities in selected regions	10.33 million
Association of Towns and Villages	Pilot project of on-line public procurement for towns, villages and other parts of the public sector	29 million
Union of Cities	Standardisation and development of eServices in the social area	3 million
Union of Cities	Standardisation and development of eServices in the area of local government property	3 million
Union of Cities	Standardisation and development of eServices in the area of transport and environment	3 million

Source: Ministry of Construction and Regional Development, 2006

Items on the Action Plan Information Society based on the National Strategy of Reforms (for details on the Action plan and the National Strategy see Chapter II.2.1. and Annex 3) are to be financed mainly directly from the state budget and through budgets of individual Ministries. In 2005 the Plenipotentiary allocated SKK 240 million (about EUR 6.4 million) of the SKK 270 million requested. For the year 2006, the Government approved SKK 300 million of the SKK 400 million requested by the Plenipotentiary to cover nine projects in the area of information society.

Separately, budgets for IT in public administration are provided at each Ministry. However, one of the items on the valid Action Plan stipulates the centralisation of tendering of information technologies for the public sector.

In the pre-accession process major financing for eGovernment efforts was provided by the EU's Phare, as well as from bilateral donors including the USAID, Canadian International Development Agency, the Dutch Foreign Ministry's MATRA Programme and others.

Box 2: Selected Phare and bilateral projects related to eGovernment Phare

Civil Service Office – IT technical assistance

Ministry of Interior – Electronic DNA Database

General Prosecution – Issuance of Electronic Penal Records

Bilateral donor projects:

Smaller projects in various areas of public administration financed by Canadian International Development Agency, UK Department for International Development, UNDP, USAID

Among private donors, the Open Society Foundation, part of the Soros Network, has played a role in financing individual projects in the area of public administration reform, also with relation to eGovernment.

At the sub-national level, funding for information society and eGovernment has come from a combination of local and regional governments' own budgets and assistance from structural funds, as well as from individual grants from private donors.

Box 3: DISAM – a project on Digital Self-Government

Between November 2005 and December 2006 the Association of Towns and Villages carried out the project DISAM aimed at defining a standard for digital content of municipal websites and helping municipalities create a web presence. The project was funded by an SKK 45 million (about EUR 1.2 million) grant of the Ministry of Transport, Posts and Telecoms.

193 new municipal websites were created within the project's pilot phase and a further 466 websites later on from other resources but using DISAM's results.

Another activity resulted in the formulation of a Vision for Informatisation of Self-Government.

Budget for **eHealth** activities is fragmented similarly as in the case of eGovernment. Each Governmental body, the National Centre for Health Information, the Health Care Surveillance Authority, the State Office of Public Health and the State Institute for Drug Control, finance its eHealth activities from their own budget. These institutions are state budgetary organisations (financed fully from the state budget), and their budget structures does not provide data in a form that would allow to clearly separate out eHealth spending.

Significant part of eHealth related projects run by MH or former IHIS were funded from either Phare or World Bank grants and loans (for more information see II.2.1). Phare project 3002-004-995-03-06, Strengthening of statistics health information system and harmonisation with EU requirements, finished in July 2006 had a budget of EUR 750 000 (out of which EUR 600 000 is financed by Phare). 46% was used for purchases of hardware, 33% for software and 20% for consulting services.

The World Bank Loan⁴³ Health Sector Modernisation Support, 2003 consisted of two parts: Sectoral Adjustment Loan (EUR 55 million) and Technical Assistance Project (EUR 10.58 million). According to available data,⁴⁴ allocated budget for the eHealth component (development of Health Management Information System) was EUR 2.39 million.

⁴³ For more information see www.worldbank.sk

⁴⁴ Approved by the government on March 31, 2004.

Support to health sector, mainly by means of technical assistance, was in the 2004-2006 programming period included primarily in the Operating Programme (OP) Basic Infrastructure, financed from ERDF (European Regional Development Fund).

Within OP Basic infrastructure, support to health sector was allocated to the priority Local Infrastructure; support to health infrastructure was included in sub-measure 3.1.2. Building and development of health infrastructure, while the area of health informatics formed part of separate measure 3.2. Building and development of information society for the public sector.

Table 15: EU funds allocated to sub-measure 3.1.2. Building and development of health infrastructure (in EUR)

Period	Total cost	EU Funds (ERDF)	National Funds Total	State Budget	Self-government Funds
2004	6 002 561	4 802 049	1 200 512	900 384	300 128
2005	8 572 768	6 858 215	1 714 553	1 285 915	428 638
2006	11 104 541	8 883 633	2 220 908	1 665 681	555 227
2004-2006	25 679 870	20 543 897	5 135 973	3 851 980	1 283 993

Source: Operating Programme Basic Infrastructure, 2006

The second measure was focusing on eGovernment with total funding available EUR 13.7 million, which was partially used for eHealth initiatives, mostly improving hospital information systems in regional hospitals (see Table 16).

Table 16: Selected eHealth Projects Funded by Operating Programme Basic Infrastructure, Measure 3.2. Development of Information Society – public sector

Project	Funding in SKK
Health Care Surveillance Authority Information System	28.17 million
Specialised hospital of St. Svorad Hospital Information System	9.5 million
Hospital Topolcany Hospital Information System	9.85 million
Hospital Kezmarok Hospital Information System	9.61 million
Hospital with policlinics Kralovsky Chlmec Hospital Information System	8.92 million
Hospital Ziar nad Hronom Hospital Information System	9.91 million
Regional government Nitra Health Management IS for Policlinics in Sala	9.08 million
Regional government Nitra Health Management IS for Policlinics in Komarno	9.3 million
Hospital Piestany Hospital Information System	10 million
Hospital in Krupina, Hospital Information System	9.9 million

Source: Ministry of Construction and Regional Development, 2006

Note: Projects from identical OP as projects listed in Table 14.

The following tables (Table 17 and 18) present data on demand for individual measures. Due to the low allocation (EUR 25.68 million) for sub-measure 3.1.2. (Building and development of health infrastructure), only one fifth of proposed projects were successful in receiving the funding (28 out of 126). eHealth related projects have been financed from measure 3.2. (Building and development of information society for the public sector). Unfortunately, only aggregate data were available for this measure, so it is difficult to value the share used on eHealth projects.

Table 17: EU Funding - Number of applications and approved projects

OP	Priority	Measure		Number of applications	Number of approved applications
OP Basic Infrastructure	3. Local Infrastructure	3.1	Building and development of civic infrastructure in regions	1 393	180
		3.1.2	Sub-measure - Building and development of health infrastructure	126	28
		3.2	Building and development of information society for the public sector	143	56

Source: OP Health Care, approved on 6 December 2006, www.rokovania.sk

Table 18: EU Funding - Demand for particular measures and absorption

OP	Priority	Measure		Allocated (EUR)	Demand %	Contracted %	Spent %
Basic Infrastructure	3. Local Infrastructure	3.1	Building and development of civic infrastructure in regions	68 479 188	1 042.00	74.20	33.94
		3.1.2.	Sub-measure Building and development of health infrastructure	25 679 870	555.37	28.07	10.81
		3.2	Building and development of information society for the public sector	13 702 715	285.35	96.10	6.27

Source: OP Health Care, approved on 6 December 2006, www.rokovania.sk

Regrettably, this inconvenient division of EU funding for health care sector into two measures persists. Government has recently approved the National Strategic Reference Framework for the programming period 2007 – 2013 (December 6, 2006), in which the previous sub-measure (Building and development of health infrastructure) continue as a new Operation Programme for Health Care (with budget allocation EUR 250 million). It will be managed by MH. There will be also separate Operation Program focusing on Informatisation of Society (with allocated budget EUR 993 million) that will be

managed by the Office of the Government. Similarly, as in the previous planning period, eHealth related project can apply for funds within the Operating Program focusing on Informatisation of Society.

Private sector actors have been largely in the role of technology providers of eGovernment applications. The largest applications have been developed through public tenders. No data are available on the volume of spending by private agents for eGovernment and eHealth applications.

Although not formalised as PPPs, several existing eGovernment initiatives effectively carry the characteristics of PPPs through combined involvement of public and private sector actors. This concerns especially projects at the level of municipal self-governments.⁴⁵

At national level, only in November 2005 has the Government approved a PPP policy. The Policy explicitly lists eGovernment as one of the potential areas for the application of PPPs. Of presently running projects the electronic toll project for highways has been discussed as a possible pilot PPP project.

There is little evidence of PPPs in eHealth in Slovakia at present. The Global eHealth Survey carried out by the WHO in July 2005 does not show any replies to questions posed concerning PPPs.

II.2 Strategies, policies, action plans and projects

II.2.1 Key strategies

Little visible practical progress was made in formulating policies, strategies or taking coordinated action by the Government on information society development in general and eGovernment specifically prior to 1999. The focus of Government documents was on telecommunications and no coherent information society strategies or policies were in place.

The broad coalition Government, which came to power in 1998, brought increased focus on modernising Slovakia's inefficient public administration. The first indirect references to eGovernment came within the 1999 **Strategy of Decentralisation and Modernisation of Public Administration**, which pointed to the need of dealing with informatisation of the public administration in view of information barriers between central institutions, central institutions and local government and public administration and the citizen. The strategy focused on proposing a new decentralised model of public administration with the creation of a new tier of regional governments and decentralisation of powers to regional and municipal governments. The policy set the task of preparing the Strategy of Informatisation of Public Administration by 2000, which had not been prepared.

The complexities of decentralisation and state administration reforms resulted in little attention to or emphasis on eGovernment. Key impetus for addressing eGovernment on the national level came mainly in the context of the EU accession process. In June 2001 the Government adopted the **Policy for the Development of the Information Society in Slovakia**, a strategic document declaring the priority of building an information society and joining the eEurope+ initiative. The approval came just two days before the publication of the eEurope+ Action Plan targeting the candidate countries by the European Commission. The Policy represented the first official strategy focused on information society agenda. It outlined policy priorities but did not contain specific actions to be taken. Its proposals for a new institutional structure have never been adopted.

The key policy document still in effect was adopted in January 2004 as the **Strategy and Action Plan for the Development of the Information Society** based on initiatives adopted within eEurope+. It provided for the appointment of Plenipotentiary for Informatisation of Society, which took place over

⁴⁵ Examples of PPP projects include www.mesto.sk and www.kosice-region.sk.

the course of 2004. Over a year after the approval, of the 56 tasks in the Action Plan only 16 were met according to the MTPT and 13 of the 42 measurable ones.⁴⁶

At present, while still formally valid, the Strategy and Action Plan have been updated by new developments in Slovakia's Lisbon Strategy. In 2005 the Ministry of Finance initiated the preparation of the Strategy of Competitiveness until 2010 (National Lisbon Strategy), which contained four Action Plans (Employment and Education, Science, Research and Innovation, Information Society and Business Environment).

The Action Plan Information Society clearly articulated specific tasks related to Slovakia's competitiveness strategy at the level of individual Government departments with deadlines corresponding with originally expected September 2006 general election date. The Action Plan was compiled from tasks contributed by individual departments themselves. In spite of this, there were significant delays in implementation of these tasks. Although the Government has reviewed progress in meeting the National Lisbon Strategy in late 2006, the structure of the tasks and the review do not show clearly whether the tasks have been performed as intended (see also Chapter II.2.4.).

Separately, as one of the Action Plan's key tasks a Roadmap of Informatisation of Public Administration was approved in October 2005 with individual project deadlines planned up to October 2008. Tasks in the two documents were coordinated. The Roadmap outlines four successive stages of implementing eGovernment services with a view of having an integrated eGovernment solution in place by 2008 (see also Chapter II.2.4.).

The Government, which left office after the June 2006 general election had prepared a draft of the National Strategic Reference framework for Structural Funds for the programming period 2007-2013, with a significant focus on information society, to the tune of 850 million Euros over the period. The IT industry and some experts in the area of information society have argued vigorously in favour of creating a separate operating programme for Information Society. The new Government, following a public debate, approved an amended National Strategic Reference Framework on December 6, 2006. The framework allocates EUR 993 million to information society as a horizontal priority with the objective of developing an inclusive information society. Majority of this amount, EUR 877.27 million, will be allocated to the Operating Programme Informatisation of Society. The programme has three priority axes:

1. eGovernment and development of eServices including eHealth,
2. Development of memory and fund institutions and updating of their national infrastructure (eCulture),
3. Increasing access to broadband internet.

The remaining funds are within other operating programmes, covering areas such as eLearning, eTransport, eInclusion, eBusiness, eTourism and eSkills.

With respect to the health sector, few ICT strategic documents have been adopted. The **Strategy of Development of Health Informatics** for 2003-2006 was an important document. Although the document does not contain word "eHealth" yet, it is considered as reference point for eHealth Road Map. The updated versions of the Strategy developed for the period 2004-2006 and 2005-2006 refer to more general eGovernment Action Plan (2004).

Two key documents describing eHealth policies have been approved just recently (February 2006). The **Slovak eHealth National Strategy** (Road map) and the **Slovak eHealth Action Plan** (see II.2.4.) have been prepared simultaneously and build on results of previous planning document for Structural Funds for years 2004 -2006 and also incorporate findings of Health Sector Modernisation Project,

⁴⁶ SME, Vláda splnila 31 percent úloh, February 2, 2005.

Technical Assistance to the National Centre for Health Information financed by the World Bank loan (for details see also Chapter II.2.4 below).

The prime objective of the Slovak eHealth National Strategy is to create the "eHealth environment" which is a prerequisite for launching and the follow-up systematic development of eHealth programs and projects, leading to concrete and practical applications. Therefore the Strategy is structured into three blocks of which the first two - ensure creation of suitable eHealth environment, and the third one - represents development, implementation and improvement of eHealth applications.

The document provides for the formation of:

- eHealth Committee as a managing and coordinating body of the MH. It will be authorised to issue legislative bills, suggestions for making up professional work groups, etc.
- National centre for health service informatisation, the so-called eHealth Slovak Competence Centre, as a department of the NCHI with the competence of securing - administrative and executive authority.
- eHealth working groups at the level of authors and users of individual applications (application users, providers of health care, patients, manufacturers, distributors, etc.)

These activities shall be funded from the state budget, in the chapter of the MH.

Next steps will be directed to building of the necessary ICT infrastructure. It will consist of:

- introduction of medical informatics standards, supported by the National Standardisation Centre as part of NHIC,
- development of the National Health Information System,
- creation of the computer interconnection and network,
- authorised communication,
- building of integrated system for support of health care provision.

And the last part of the document stresses the need of support of the creation, implementation, operation and development of specific eHealth applications:

- public health portal
- electronic health record
- electronic prescription and medication
- out-patient health services

II.2.2 Effects of other policies

In 2003 the Government adopted the **National Policy for Electronic Communications**, which provided for the harmonisation of legal framework, state regulation and support of competition. One of its sections was devoted to supporting Information Society Services development. The document dealt with improving regulation and supporting competition also in the area of provision of internet access.

National Strategy for Broadband Access was approved by the Government on April 13, 2005 with 10 tasks mainly in the area of regulation and promotion of competition, as well as strategic use of structural funds to improve infrastructure.

Public sector reform and decentralisation taking place since 2000 have in their earlier stages hindered the development of eGovernment. At the central level and especially at sub-national levels decentralisation placed significant demands on governments in priority areas. As governments

gradually adjust to the new framework, non-existential issues such as eGovernment are receiving more attention.

The National Lisbon Strategy

The recent transformation of health care sector, mainly the increasing share of private sector, form a pressure for efficiency and quality care, which definitely has speeded up the eHealth development in Slovakia.

II.2.3 Influence of EU and international policies

European influence was crucial in introducing the eGovernment agenda – prior to the eEurope+ initiative strategies of the Slovak Government only mentioned eGovernment in passing, if at all. Slovakia's Strategy of Informatisation of Society and Action Plan approved in January 2004 were based on initiatives adopted within eEurope+ without much adjustment to local conditions.

The process of adoption of the Acquis also constituted a significant influence especially in terms of legislation in the area of telecommunications.

Present strategies, especially within the context of the National Strategy of Reforms, are much more home-grown in nature. The process of drafting of both the National Lisbon Strategy and the subsequent Action Plans including the Action Plan Information Society was carried out with broad stakeholder consultation.

The findings of the above mentioned PHARE and World Bank projects have significantly influenced strategic planning in health sector. The Slovak eHealth Action Plan itself is based on assessment of current state of eHealth and analysis of future trends especially in EU countries. The document incorporates all relevant eHealth documents of EU.

II.2.4 Implementation of action plans and projects⁴⁷

The first coherent eGovernment Action Plan came with the 2004 Strategy of Development of Information Society. The Action Plan contained a large number of tasks but only vaguely defined with deadlines given only as years. Many of the tasks had several responsible institutions, without specifying who is to account for the task's fulfilment.

The subsequent action plan came in the form of the Roadmap to Informatisation of the Public Administration adopted in 2005. The Roadmap contains specific milestones with tasks for individual institutions and deadlines.

The most up-to-date Action Plan is a part of the National Lisbon Strategy and was adopted in 2005 (Action Plan Information Society). This Action Plan forms a subset of the above mentioned Roadmap and contains specific actions with deadlines and a responsible party for each task.

⁴⁷ Also see II.1.6 Financing for additional information on projects.

Table 19: Tasks in the Action Plan Information Society (situation as of January 2007)

Task	Deadlines	Status
Completed or on track to completion		
Process, Organisation and Information Model of the Public Administration	To be prepared by June 2005 To be approved by September 2005	Approved in October 2005 as the Roadmap of Informatisation of Public Administration
Study called: "Possibilities for utilisation of backbone optical infrastructures where the state is the major stock holder"	Carry out analysis by August 2005 Prepare implementation and pilot project by August 2006	Approved by Government on March 1, 2006, proposing that a state-owned company should be created to manage networks
Creation of data exchange system between registries	Prepare study by September 2005	Study prepared, not disseminated publicly
Provision of information from the reference database of citizens and database of IDs to appropriate subjects		System undergoing testing
Implementation of ID card with electronic chip and certified electronic signature	Carry out feasibility study by December 2005	Study prepared, not disseminated publicly
Mapping of digital literacy and adaptability of population to ICT	Completed by end 2005	Study carried out
Internet for all (subsidised broadband access)	Approve strategy and specific conditions by August 2005 Launch in October 2005	Launched and completed in 2006 without spending allocated subsidy in full
Publicly accessible portal Culture Registry	Prepare project by December 2005 Public launch by August 2006	Portal available at registerkultury.gov.sk
Underway with delays		
European Computer Driving Licence (ECDL)	To approve mandatory ECDL by December 2005 To provide ECDL to at least 8 000 public administration employees by August 2006 To certify all employees by end of 2006	Pilot ECDL testing at MTPT has taken place, Act on Civil Service had been amended to require all civil servants to reach ECDL-Start level by 2008 but the requirement was later scrapped.
Assistance in preparation of proposal of new act on basic registers of the public administration	Present to Parliament by January 2006 Approve in Parliament by October 2006	Proposal prepared but law not yet approved
Preparation of proposal of electronic payment for administrative fees for eServices	Present proposal to Government by September 2005 Approve in Parliament by December 2005	Proposal to provide 50% discount from fees for services ordered electronically presented to Parliament
Increased use of electronic signature in public administration institutions as support of business environment and electronisation of public administration	At least 200 forms prepared in key institutions by November 2005 Finish building infrastructure for certified electronic signature by June 2006	Government to obtain multilicence for software Qsign, allowing use of electronic signature in up to 1 000 public offices
Implementation of identifier for communication between information systems of public administration and creation of unique identifier from birth numbers	Prepare strategy by September 2005 Propose necessary legislative changes by December 2005 Complete by July 2006	Task not completed as of January 2007

Programme of electronisation of libraries	Equip every library with broadband internet by June 2006	Not completed, several projects underway
Central portal of public administration – entry point	Launch test phase by February 2006 Launch by June 2006	Public section launched in June 2006
Free access to cadastre information	Launch test phase by March 2006 Launch by June 2006	Postponed to 2007
Digital Government	Analysis by September 2005 Launch by June 2006	Analysis not available
Analysis of creation of complete system of public procurement, registration and refurbishing of computers in Slovakia	Prepare analysis and present to Government by October 2005	Analysis not available
Digital access for public at schools	250 schools in 2005 500 schools by 2006	Information not yet available
Creation and launch of selected set of spatial information on environment and land transactions	Concluded by August 2006	Not completed

Source: Action Plan Information Society, authors' assessment, 2006

Note: See also Annex 3 for more information on Action Plan Information Society.

Table 20: Roadmap of Informatisation of Public Administration tasks

Stage	Task	Deadline
Stage I – Basic	In the framework of Stage I it is necessary to implement projects that are the prerequisite for the implementation of the following stages. It can be stated that at this stage the key eGovernment projects will be implemented. The individual projects can be implemented concurrently even if the completion dates are different. The preparation and the approbation of legislation relating to the standardisation of IS operated in public administration will lay high requirements on professional skills and financial resources. A significant obstacle to the introduction of eGovernment, consisting in the independently working key national registers, such as citizens register, trades register, companies register and the land register, should be removed by the creation of interfaces of these registers to the external IS. A part of the integration will be the introduction of a „unique identifier“ ensuring the unique identification of a citizen, whereby it will be impossible to determine e.g. his/her sex, age, date of birth, etc.	
1	Definition of standards for information systems of public administration	30. 12. 2005
2	Introduction of the identifier for the communication between the information systems of public administration and the creation of the unique identifier of a citizen from his/her birth number.	30. 12. 2005
3	Development of the system of electronic data exchange between the registers	30. 12. 2005
4	Payment portal of public administration	31. 06. 2006

Stage	Task	Deadline
Stage II – Technological	The purpose is following the implementation of the information process of selected services provided by public administration to allow their successive connection to the central portal that will be already prepared from the technological view.	
5	Digitalisation of the registration of a business (legal person).	31. 12. 2008
6	Installation of the access point of the Central portal of public administration	31. 03. 2006
Stage III – Digitalisation	In the framework of this stage the individual projects of the digitalisation of selected services provided by public administration will be implemented concurrently, whereby most of the said projects envisage the integration with the key national registers.	
8	Digitalisation of the issue of licenses for business with environmental impact.	29. 12. 2006
9	Digitalisation of the entry of a legal person in the Companies Register	29. 12. 2006
10	Digitalisation of the sending of the summary page of monthly statements from the employer to the Social Insurance Company.	31. 08. 2006
11	Creation of a portal for eProcurement.	31. 08. 2006
12	Digitalisation of all statistical forms on the basis of the Programme of State Statistical Surveys.	31. 01. 2007
13	Project Export PLUS.	31. 08. 2006
14	Digitalisation of the delivery of confirmations of the wage-earning revenue of a natural person from the employer.	31. 06. 2006
15	Digitalisation of the enrolment at universities (matriculation).	30. 06. 2006
16	Digitalisation of the provision of unemployment benefits.	29. 12. 2006
17	Digitalisation of the provision of children allowance.	29. 12. 2006
18	Electronic health insurance.	30. 12. 2005
19	Digitalisation of the registration of all vehicles with the district traffic (licensing) authority.	29. 06. 2007
20	Internet portal of interactive labour market.	31. 08. 2006
21	Digitalisation of the submission of the application for the building permit.	31. 12. 2007
22	Digitalisation of extracts from the Register.	31. 12. 2008
23	Digitalisation of public libraries.	31. 12. 2008
24	Digitalisation of the arrangement of a visit at a health care provider.	30. 12. 2005
Stage IV – Integration	The last stage of the information process is the integration of digitalised services provided by public administration to the Central portal. The individual services will be connected in the same order as the individual projects of the digitalisation implemented at Stage III will be completed.	
25	Extension of the functionality of the access point of the Central portal of public administration.	31. 12. 2008

Source: Roadmap of Informatisation of Public Administration, 2005

Even though many tasks have been set not as many real projects materialised. Box 4 describes two projects that took place under the eGovernment domain.

Box 4: Key eGovernment-related projects implemented by MTPT

National Project of Certification of Digital Literacy of Civil Service Employees through ECDL The Ministry of Transport, Posts and Telecoms piloted ECDL education and certification in 2005 for all of its employees. Based on its results a National Project financed from the European Social Fund was prepared first for the Bratislava region, with plans to carry out a project nationally later. The objective was to create a legal obligation for about 40 000 civil servants to be certified by the European Computer Driving Licence at the basic level by 2008. Although the legal requirement was later scrapped, large portion of Slovak civil servants will undergo ECDL certification over the next few years.

Electronic Public Procurement project was carried out with the objective to reduce costs of public procurement both on the part of tender participants and for public sector procurers, expediting public procurement and making its processes more transparent. The project was supposed to help public sector organisations for the legal obligation to procure goods electronically introduced by law effective as of 2007. A public procurement portal is open to the public at www.evo.gov.sk since May 2006 and two pilot electronic procurements took place in 2006. The system was supplied by IBM in Slovakia at a cost of over SKK 40 million (about EUR 1.1 million) and is operational. However, there were problems in early 2007 and delays in actual use of the portal. In early 2007 the law was changed, with electronic procurement no longer being mandatory.

As already mentioned, strategic documents like the Slovak eHealth National Strategy have been influenced by the outcomes of several studies and projects done previously. Since early 2000, MH has among other crucial issues, mentioned in Chapter I of the present report, identified also the ICT as one of the key areas that needs attention. Reliable data has proved to be an important element specially for designing health policies, decision making and strategic planning. The existing practice of data collection was very fragmented. Certain data were gathered by Health Insurance Companies, Public Health Authority, former Institute of Health Information and Statistics, State Authority for Drug Control, etc. These data could not be converted. Therefore there was a need to assure unified structure of data collected, so it can be easily integrated. One of the solutions was to organise the Institute of Health Information and Statistics in a completely new manner. Two major sources of funding, World Bank and EU Phare were used to assist this aim (detailed description see in following Box 5).

Box 5: ICT projects in health sector

Japanese Policy and Human Resources Development (PHRD) grant project no. TF 026121, managed by the World Bank and implemented in the period of 2000 – 2002. The MH utilised the grant to examine several issues related to strengthening finance, delivery and management of health services. One of the issues investigated was a Health Management Information System (what types of indicators to be included in and the basic design of an HMIS system). Independently from this task, the grant was also used to draft preliminary National Health Accounts (see Annex 3). The findings of this project were not available publicly at the time of writing.

Phare project “Strengthening of statistics health information system and harmonisation with EU requirements”⁴⁸ (2003-004-995-03-06). Completed in July 2006.

The project’s objective was to provide assistance on the basis of international experience in the field of statistics in health information systems. The health data collected by the National Centre for Health Information were not in compliance with other sources like EUROSTAT, OECD and WHO, especially in terms of content, structure, methods of collection and evaluation. The goal was to develop Health Indicator Information System. Furthermore, the project gave assistance and imparted practical knowledge on and experience in public health monitoring. The project contributed to the completion of the harmonisation of the collection, processing and evaluation of health data and developed new technologies i.e. a database of health indicators. The MH and the National Centre for Health Information were beneficiaries.

A **World Bank**-assisted project concluded recently in 2006.⁴⁹ There were six components identified to build the institutional capacity to effectively design and implement the reform agenda at the Ministry of Health. One of the components was dedicated to development of Health Management Information Systems (allocated a budget of EUR 2.39 million). The primary objective of the component was to set up a standardised information environment as well as to define and to build the standardizing role of state with respect to the health sector. It shall support the development of standards, regulations and other mechanisms to support the integration of health information at all levels, so that common definitions and data structures are used and necessary information can be exchanged. As another objective, motivation incentives are expected to be introduced to establish an attractive environment for providers of ICT solutions. The component is expected to take care of the provision of adequate volumes of valid continuous data for further analytical processing, interpretation and modelling. The setting of the principal elements of health documentation protection, document flows between and among the market stakeholders, and data safety are all considered as important aspects. Implementation and practical use of information obtained in this way and of data aiming at the setting up of a standard information interface and a network, together with training and education of health managers.

Within the above mentioned component, there are two tasks⁵⁰ identified by MH and financed from a World Bank loan in the area of ICT. One shall set common definitions and data structures. The second one shall define standards for data processing and data exchange. The current practice of data collection is very fragmented and data can not be converted, as has been previously stated. Therefore the first project shall assure unified structure of data collected, so it can be easily integrated. The second project will introduce data processing standard, used for instance in data exchange among health care providers and particular state health offices. It may be expected that the solution of the tasks and predominantly the application of its conclusions and recommendations will be major steps

⁴⁸ For more information see Final Report at <http://www.health.gov.sk/redsys/rsi.nsf/0/727FC6B82C9C237DC12570F10048BB20?OpenDocument>

⁴⁹ Health Sector Modernisation Support Technical Assistance Project, 2003, Loan EUR 10.58 million and Health Sector Modernisation Support SECAL, Loan EUR 55 million, Report No.: 26037-SK, www.worldbank.sk

⁵⁰ Trend, Zdravotníctvo a informatika sa zblížujú ťažko a pomaly, July 7, 2005

towards the introduction and application of standards suitable for the support of the eHealth solution. Outcomes of these two projects were supposed to be available at the end of the year 2006.

Both of these projects are interconnected to institutional transformation of the Institute of Health Information and Statistics into the new National Centre for Health Information (for details see II.1.1.). Early after establishment (in the year 2006) the Centre has been preparing several feasibility studies, which focused on increased use of internet (especially among outpatient departments), ePrescription, eMedical Records and eOutpatients services. The implementation of the projects supposed to be done simultaneously. In financial terms, major source of finance shall be EU Structural Funds and EU Communitarian Programs.

II.3 Legal framework

II.3.1 Laws on eServices

The present legal framework for eServices is a result of a gradual evolution over time, with contribution from European Commission pressure in the context of adopting the Acquis. Several acts adopted in the 1990s and earlier in the present decade have undergone amendments responding to implementation difficulties.

The key act concerning eGovernment, Act No. 275/2006 on Information Systems of Public Administration was approved by Parliament in April 2006 to replace Act No. 261/1995 on State Information Systems, which had been rendered obsolete by new requirements in the area of eGovernment. The law charged MTPT with preparing and proposing to Government strategy of informatisation of public administration, directing the creation of strategies of development of information systems in public administration (ISPA), tracking and evaluating ISPA developments and informing the Government, coordinating objectives of developing ISPA at national and international level, checking tasks mandated by the law, taking measures (including fines) to address shortcomings and issuing standards for interoperability.

The law provides for a partial solution concerning the production of reports from information systems of public administration electronically, which once implemented, will enable citizens and businesses to receive some official documents from public registries and databases at any public administration body with the required technology.

However, the law provides a two-year grace period for existing information systems to comply with its provisions.

The Government, which came to office in 2006 has announced plans for a new law specifically covering eGovernment – the Act on Electronic Services of Public Administration and Administrative Registries should be adopted in 2007. The act would introduce obligations for public institutions in terms of eServices, as well as back-office functions. Presently, Roadmap for Informatisation of Public Administration contains as one of its tasks the preparation of a new Act on Basic Registries of Public Administration.

Box 6: Additional acts relevant to eGovernment

Act no. 610/2003 on Electronic Communications – implemented an EU-compliant regulatory framework for telecommunications and has been important in reducing cost of Internet access

Act no. 215/2004 on the Protection of Classified Information – has been important in creating conditions for industrial security certifications for suppliers of information systems by the National Security Office

Act no. 618/2003 on Copyright and Related Rights – regulates copyright, including the creation and use of databases

Act no. 215/2002 on Electronic Signature – provides a framework for certified electronic signature and electronic signature, giving authority to accredit certification authorities to the National Security Bureau. The Government proposed to amend the law in February 2006 to simplify the use of electronic signatures. This was presented as a minor amendment in expectation of amendment of the EU Directive 1999/93/ES, with which it aims to comply.

Act no. 428/2002 on Personal Data Protection – provides for standards of protection of personal data collected in databases, creating the Office of Personal Data Protection.

Act no. 540/2001 on State Statistics

Act no. 211/2000 on Free Access to Information – establishes online communication as a legitimate channel for requesting and publishing information by public sector entities. Provides an obligation to disclose all information on request, which is not classified as secret. Requires state authorities to publish an information minimum on their website.

In eHealth, processing of **medical records** data, their provision and enabling is one of the most sensitive topics within the health system. In the past, medical records were owned by physicians, which led to in several problems, especially when patients attempted to prove malpractice. The new Act on Health Care no. 576/2004 Coll. address all the previously raised issues and set a basic rules for keeping and handling health records. Naturally, personal data protection is an important patient's right.

The same law (Act on Health Care no. 576/2004 Coll.) defines the Information System of the Health Sector. Basically it sets who is obliged (providers, HICs, Public Health Institutes) to provide statistical and other data for the purposes of creation and execution of national health policy and/or for the purposes of surveillance. The scope of the data is stipulated by a decree of the Statistical Office.

II.3.2 Legal issues and constraints

Majority of interviewed experts agreed that the present legal framework was generally adequate to allow development of eServices, although not necessarily to stimulate their implementation. Current laws provide all elements necessary to allow public authorities to develop services but do not require them to do so. The existing laws also do not stipulate what the characteristics and quality of eServices should be. The planned Act on eGovernment discussed above has the potential to remedy the situation.

Earlier slow development of eServices was partly blamed by experts on a restrictive and expensive electronic signature regulation. Following the 2005 amendment, this problem has been largely resolved but the electronic signature legislation in Slovakia remains strict, opting for one of the most secure solutions available, which requires a hardware key. The cost therefore negatively affects the spread of services requiring an electronic signature such as any kind of filings. At the same time, the legislative process in Slovakia is cumbersome and the preparation of new bill on information systems of public administration has taken two years.

Problem of personal data protection has recently arisen as a key potential impediment to eGovernment initiatives. Slovakia's personal data protection framework is quite restrictive. In 2006 the Ministry of Justice and Office for the Protection of Personal Data have clashed publicly over the issue of whether the Ministry can publish electronically some bankruptcy information including birth numbers (personal identifiers including the date of birth of every individual) thus replacing a paper version of the official Trade Herald. The Office held that this was in violation of the data protection legislation, while the Ministry argued the public interest in publishing this information overrode the personal data protection concerns.

Indirectly, the legislation governing internet access and telecoms liberalisation has significant potential effects on the demand side by increasing internet access.

One area of legislation, which has been frequently discussed as having potential effects on stimulating eGovernment was in the area of data exchange among public administration subjects.

In February, the Government approved a proposed change to the Act on the Trade Register to make electronically accessed data legally binding. Until now data accessed from the register on the Internet can be used for informative purposes only but cannot be used for legally binding acts.

Despite scarcity of eHealth solutions in Slovakia, several related legal issues have been raised. They primarily concern the access by social workers to personal health records and responsibility in case of failure of eHealth solutions. These are new issues and need to be incorporated in Slovak legislation.

II.4 Dedicated ICT framework

In general the ICT framework used by Government institutions is fragmented as a result of years of uncoordinated procurement by individual authorities and lack of a coherent central strategy on building the framework.

The Audit of ICT in public administration in 2005 found 95% coverage of central institutions by IT, 91% internet connectivity, 70% connectivity to LAN networks. Further findings of interest:

- of the 247 information systems at central institutions, 51% use paper-based and 49% electronic data entry, 82% of that entered manually,
- of the 247 information systems, 57% are not connected to other information systems
- 45% of networks are related to internal management, 24% with performing public administration tasks and 31% with provision of eServices,
- seven out of 20 central institutions had projects under implementation related to ICT, mostly aimed at provision of eServices.

At present, three types of state data networks exist:

1. SANET – the Slovak Academic Network,
2. GovNET – network of state administration institutions,
3. security services networks – military network, digital network of Ministry of Interior.

The Government network – GovNET serves as the backbone for intranet and internet access of Government institutions. The network, operated on leased lines was first conceived as the so-called “small GovNET” in 1993, connecting state administration offices but without connection to the internet. After 1997 the project was expanded into its second phase which involved improved infrastructure and internet connectivity.

Based on the tender results "Data circuits transfer capacity upgrade for Government in Slovakia", the company SWAN committed the last data circuit for Slovak Government on December 20, 2002. The

solution is built on SWAN infrastructure with minimum transfer capacity of 2 Mbps. This is several times faster compared to previous solutions.

The actual network only consists of centrally maintained routers by the Office of the Government. The network serves for transfers of data between GovNET nodes at individual offices. GovNET provides users with services such as e-mail, Internet access and news at speeds between 64 kb/s and 2 Mb/s. The network infrastructure is provided by several providers.

In addition to GovNET connectivity, however, several central institutions pay for additional broadband connectivity from various providers and at widely differing rates.

The Government has also reviewed the possibility of using electronic infrastructure owned by state-owned companies (railways, electricity). A proposal to create a state-owned company to centrally deal with network infrastructure for public administration exists as a result of the Action Plan Information Society.

SANET, the educational network run by an association of higher education institutions provides connectivity primarily to universities and other selected education institutions, as well as public libraries.

Local and regional governments procure their own ICT infrastructure as required. Broadband connectivity is standard among most cities and regional governments but rare for local government in rural areas (see for details Table: 8 in the Introduction of the present report).

With respect to eHealth, MH and Governmental agencies (NCHI, etc.) are connected to the GovNet network.

There are no data on internet provision at hospitals. SANET offers this service to a few hospitals, mostly teaching facilities of universities.

IT applications used by outpatient and hospital doctors or other health workers often are of a very low standard. In many cases health facilities use several applications for various activities (labs, billing, accounting, etc.) which are not interoperable and can only be used separately. The least satisfactory is the interconnection of workplaces within one organisation or of various organisations.

II.5 eGovernment and eHealth services

According to the Audit of ICT for the MTPT, 52 services, which could be provided electronically were identified in 2005, of that 20 are basic services (12 for citizens, 8 for businesses), which should be provided directly on the internet without client contact. 417 separate forms related to the 52 services were identified, of that 302 request forms and 115 annexes to these forms, which must be completed and manually handed to the public administration organ. Of the 20 basic categories of eServices, only two are provided directly on the internet, four are under preparation and the remaining 14 are not ready for internet provision.

Most existing eServices remain one-way at the present stage due to difficulties described above surrounding the use of electronic signatures. Transactional eGovernment services to businesses have grown more rapidly than to citizens. The only services with two-way functionality are services to businesses regarding social insurance contributions to the Social Insurance Agency and filing of taxes at the Tax Authority.

The existing eGovernment services have been provided mainly to Slovak citizens due to language barriers. All existing services operate in the Slovak language and are thus largely inaccessible to other

EU citizens. At the present stage of evolution this issue has not received significant attention in domestic strategies or policies.

The main service in existence is the unified Central Portal of Public Administration <http://www.portal.gov.sk>. The portal opened to the public in July 2006, replacing its predecessor, the information portal obcan.sk. The portal, which is directly specified in the Act on Information Systems of the Public Administration, has the ambition to serve as the entry point to all eGovernment services. Information and services offered are organised by “life situations”. The plans for the portal include providing the service of an electronic reception point for Central Government institutions, as well as micro-payment solutions, to offer full transactivity. At present, however, the portal is mainly an information website, linking through to individual websites of Ministries and state offices.

Among local government the standards of online content on offer vary greatly – many, especially larger cities offer a variety of content online including forms for downloading and records of sessions. At present, several interconnected projects are being implemented by the Association of Towns and Villages to bring digital content online in the form of a central local government portal, including efforts to provide standardised forms for interaction with local governments for downloading.

II.5.1 Services for citizens

The List of Basic Public Services adopted by the Council of the EU in March 2001 covers 12 services for citizens. Their level of online availability and sophistication is assessed through a methodology used in the eEurope benchmarking exercises.⁵¹

1. Income taxes

Responsibility	Central Government, Tax Directorate of the Slovak Republic
Web-site	www.drsrc.sk
Sophistication level	4/4

The income tax filing system represents one of Slovakia’s best developed eServices. The tax authority provides information, forms for download and the possibility to submit for holders of Guaranteed Electronic Signature, although this requires a one-time physical visit to a tax office. Others may still file online and submit additional paperwork later verifying their filing in writing.

2. Job search services by labour offices

Responsibility	Central Government, Ministry of Labour, Social Affairs and Family, Bureau of Labour, Social Affairs and Family
Web-site	www.upsvar.sk
Sophistication level	1/3

These services are presently at a low level of sophistication only providing general information on the job search process at www.upsvar.sk. However, there are several successful private-sector job servers with more complete functionality (e.g. www.profesia.sk).

⁵¹ Stage 1 - Information: online information about public services, Stage 2 - Interaction: downloading of forms, Stage 3: Two-way interaction: processing of forms, including authentication, Stage 4: Transaction: full case handling, decision and delivery (payment). For certain services only the first three levels are defined as no transactivity is applicable. For details on the methodology see: <http://ec.europa.eu/idabc/en/document/3543/5671>

3. Social security benefits

a. Unemployment benefits

Responsibility	Central Government, Ministry of Labour, Social and Family Affairs, Social Insurance Agency
Web-site	http://www.socpoist.sk/
Sophistication level	2/4

The website of the Social Insurance Agency provides information and forms for download for persons insured to receive unemployment benefits, but no two-way interaction.

b. Family allowances

Responsibility	Central Government, Ministry of Labour, Social and Family Affairs, Bureau of Labour, Social and Family Affairs
Web-site	www.upsvar.sk
Sophistication level	2/4

Information and forms are provided in the website of the Directorate of Labour, Social Affairs and Family, but without any transaction ability.

c. Medical costs

Responsibility	Central Government, Ministry of Health and five existing health insurance agencies (two public, three private)
Web-site	www.health.gov.sk
Sophistication level	1/4

The eServices are developed very poorly, only providing information and a limited range of forms for download. However, medical costs are covered for all citizens by a system of health insurers, many of which provide information, downloadable forms and access to private health accounts allowing clients to review transactions posted (the latter is required by law).

d. Student grants

Responsibility	Central Government, Ministry of Education, Higher education institutions
Web-site	NA
Sophistication level	0/4

No centralised eServices exist in this area, although a system of social stipends is in place. These are requested directly through universities or schools.

4. Personal documents

a. Passport

Responsibility	Central Government, Ministry of Interior
Web-site	www.minv.sk
Sophistication level	1/3

The website of the Ministry of Interior (www.minv.sk) responsible for issuing of documents offers limited information, no downloadable forms

b. Drivers' licences

Responsibility	Central Government, Ministry of Interior
Web-site	www.minv.sk
Sophistication level	1/3

The website of the Ministry of Interior (www.minv.sk) responsible for issuing of documents offers limited information, no downloadable forms.

5. Car registration

Responsibility	Central Government, Ministry of Interior
Web-site	www.minv.sk
Sophistication level	2/4

Website of the Ministry of Interior provides information and forms for downloading but car registration must be handled in person at district traffic police inspectorates.

6. Application for building/planning permits

Responsibility	Local government, Municipalities
Web-site	www.portal.gov.sk
Sophistication level	1/4

The central portal provides information on the process, which is decentralised to municipalities. Some municipalities offer downloadable forms online. All forms must be filed directly with municipalities.

7. Declaration to the police

Responsibility	Central Government, Ministry of Interior, Slovak Police
Web-site	www.minv.sk/POLICIA/policia.htm www.portal.gov.sk
Sophistication level	1/3

Information is provided at the central portal and the website of the Ministry of Interior, but no possibility to transact. Declarations must be made in person at a police station.

8. Public libraries (catalogues and search tools)

Responsibility	Central Government & Local government
Web-site	http://www.infolib.sk/
Sophistication level	1/3

A new catalogue system with digitalised documents is being created at www.kis3g.sk. A centralised library portal sponsored by the Open Society Foundation is available at www.infolib.sk. However, only selected larger libraries offer online catalogues.

9. Certificates – birth, marriage

Responsibility	Central Government (Ministry of Interior) and Local government (Municipalities)
Web-site	www.portal.gov.sk
Sophistication level	1/3

Information is available from the central portal but without forms or transaction ability.

10. Enrolment in higher education

Responsibility	Central Government, Ministry of Education, Higher education institutions
Web-site	www.minedu.sk
Sophistication level	1/4

The website of the Ministry of Education www.minedu.sk and the Institute of Information and Forecasting in Education www.uips.sk offer comprehensive information on study programs on offer. Selected universities offer downloadable applications and even online applications.

11. Announcement of moving (address change)

Responsibility	Central Government (Ministry of Interior) and Local government (Municipalities)
Web-site	www.portal.gov.sk
Sophistication level	1/3

The central portal provides information but no forms or transaction ability.

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

Responsibility	Central Government, Ministry of Health
Web-site	www.health.gov.sk
Sophistication level	1/3

The website of the Ministry of Health provides very limited information with no transaction ability. Individual hospitals do not provide these services online.

13. Access to health insurance policy register

Responsibility	Central Government, Health Care Surveillance Authority
Web-site	www.portal.udzs.sk
Sophistication level	1/4

HCSA has launched an online access to the health insurance policies register (January 2007). Health care providers and citizens can by entering an official identifier (birth number) check in which HIC the citizen is insured.

II.5.2 Services for businesses

The List of Basic Public Services adopted by the Council of the EU in March 2001 covers 8 services for businesses. Their level of online availability and sophistication is assessed through a methodology used in the eEurope benchmarking exercises.

1. Social contributions for employees

Responsibility	Central Government, Ministry of Labour, Social and Family Affairs, Social Insurance Agency
Web-site	www.socpoist.sk
Sophistication level	4/4

Social Insurance Agency – the agency responsible for collection and payment of most types of state pensions allows for electronic submission of employee and payment information for businesses. Private pension insurance agencies also provide electronic access to pension account information online. Since January 2005, all businesses with more than 20 employees were required to transmit regular monthly social contributions forms to the Social Insurance Agency (SIA) electronically. At

present, all businesses with more than nine employees file electronically. The new electronic data exchange systems covers 85% of all SIA-insured persons.

2. Corporate tax

Responsibility	Central Government, Ministry of Finance, Tax Directorate of the Slovak Republic
Web-site	www.drsr.sk
Sophistication level	4/4

Tax Directorate – the website provides tax information, downloadable forms. For businesses and individuals with certified electronic signature, it is possible to file corporate income tax declarations electronically. Even holders of certified electronic signature must visit a tax office in person before filing electronically for the first time.

3. VAT declaration and notification

Responsibility	Central Government, Ministry of Finance, Tax Directorate of the Slovak Republic
Web-site	www.drsr.sk
Sophistication level	4/4

The tax directorate website provides information and downloadable forms, as well as transaction ability analogous to corporate tax above.

4. New company registration

Responsibility	Central Government, Ministry of Justice, Trade Registry
Web-site	www.justice.gov.sk , www.orsr.sk
Sophistication level	2/4

The website of the Ministry of Justice provides information and forms to download. However, business registration requires interaction with a number of public administration bodies, with separate websites and no transaction ability.

5. Submission of data to statistical offices

Responsibility	Central Government, Statistical Office of The Slovak Republic
Web-site	www.statistics.sk
Sophistication level	2/3

The Statistical Office operates the eDC2000 system allowing users to download free software, fill out selected statistical reports and submit them by email. The functionality is to be extended for further types of statistics in the future.

6. Customs declarations

Responsibility	Central Government, Ministry of Finance, Customs Administration
Web-site	www.colnasprava.sk
Sophistication level	2/4

Customs Administration – provides a very limited range of transactions on line but has plans to expand this range. Presently, it provides information on receipt of payments of customs duties; to selected businesses also services for transit customs are provided. Plans include filing of customs declarations, excise tax declarations and filing of mandatory statistics.

7. Environment-related permits

Responsibility	Central Government, Ministry of Environment
Web-site	www.enviro.gov.sk
Sophistication level	2/4

Information only is provided by the website of the Ministry of Environment at www.enviro.gov.sk.

8. Public procurement

Responsibility	Central Government, Office of Public Procurement
Web-site	www.uvo.gov.sk
Sophistication level	2/4

The website of the Office of Public Procurement publishes information on official tender announcements. Some data entry can now be carried out electronically. Legislation stipulating that as of 2007 entry of procurement of goods must be done only electronically (eProcurement is optional for services and labour) was amended in February 2007 to make electronic procurement optional rather than mandatory.

9. Health policy premiums

Responsibility	Seven existing health insurance companies
Web-site	www.vszp.sk , www.szp.sk , www.apollo.sk , www.zpdovera.sk , www.sideria.sk , www.ezp.sk , www.unionzp.sk
Sophistication level	3/3

Businesses are required to submit mandatory monthly statements to the HIC electronically (floppy disk, CD). Some HICs offer transmission of the data through electronic filling room (paperless).

II.5.3 Other eGovernment services

There are a number of other functioning eGovernment services of public institutions beyond the scope of the eEurope list:

Notary – the **Chamber of Notaries** provides a portal with information for citizens and establishes a register of documents, where notaries can upload certain registered documents in a secure environment. Citizens and businesses can then access the documents at the office of any public notary (www.notar.sk).

Trade register – the **Ministry of Justice** operates an electronic trade register of all businesses open to the public. The register, however, does not serve for transaction purposes; its outputs are only informative. Access is free (www.orsr.sk).

Box 7: Trade Register on the Internet

One of Slovakia's first eServices was the Trade Register on the Internet, introduced by the Ministry of Justice in 2001. The internet register was a result of a public-private partnership between Microsoft Slovakia, a.s. providing software, Compaq Computer Slovakia, a.s. supplying discounted hardware and company Wedia, a.s. providing free application software.

Before to access information from the trade register, citizens and businesses had to visit a court and pay a fee, even if records were required only for informative purposes. Since the launch of the register, the informative records can be retrieved online.

The register is used widely to check on the standing of business partners. However, its outputs are at present not binding for legal purposes. Retrieval of a binding record still requires a personal visit to a court. As of 2007, the Ministry of Justice plans to make available also binding records.

In addition to aiding business transactions, the register has been widely used by civil society organisations and the media in finding information on conflicts of interest of public officials. Several scandals have emerged where public officials had remained in positions in private companies thus violating conflict of interest legislation.

Courts – the **Ministry of Justice** is in the process of publishing a registry of court rulings on-line. Presently the Ministry provides all laws on-line through its JASPI system (jaspi.justice.gov.sk).

Cadastral – cadastral (land title) records are available on-line to registered users at a fixed cost from the portal of the **Office of Geodesy, Cartography and the Cadastre**. These are not for official use in transactions but full transaction ability is planned for 2007 and records are to be available free of charge (www.kapor.gov.sk).

Historic records - **Office of National Memory** offers searchable registries of collaborators of Communist-era secret police and of organisers of Jewish property during Second World War Slovak State are published on-line at www.upn.gov.sk.

Parliament – **National Council of the Slovak Republic** proceedings are presently broadcast on-line on its website at www.nrsr.sk. A legislation tracking system is implemented to allow citizens to follow each piece of legislation through the whole deliberative process. Extensive information on voting records of individual deputies is also available.

At the level of local self-governments, increasingly they are providing records of council meetings online. The standard of eGovernment services at local levels varies and eServices are more common in larger cities. A joint project operates on mesto.sk to build the infrastructure for its producers and users, to create interesting and useful eContent and provide IT education for users. Another project in development includes a portal to offer downloads of shared forms used for various services to citizens and business by local governments.

Several NGOs are also active in the area of eGovernance. A key application is an on-line database bringing together information on political party financing, public procurement, ownership of companies by politicians at local and national level provided by the NGO Aliancia Fair Play.

II.5.4 Other eHealth services

Ministry of Health has recently launched eHealth portal www.zdravie.sk. It combines all existing sources of information (websites links) of institutions, laws and regulations, descriptions of diagnoses. Besides that it offers opportunity to consult ones health problems with specialists.

The Ministry website www.health.gov.sk offers wide scope of information for professionals, journalists and alike. Besides that allows citizens to download some forms for printing out.

The National Centre for Health Information www.nczisk.sk, successor of the Institute of Health Information and Statistics - the data gathering institution for the health sector has plans to introduce electronic data collection, at present most is still paper-based. www.uzis.sk

The website of the Slovak Medical Library www.slk.gov.sk offers apart from general information about services provided also possibility to check book availability through email request.

HICs offer eServices for citizens and health care providers (both were described in II. 5.1 and II. 5.2.). Apart of these, General Health Insurance Fund (the biggest HIC) has launched an on line connection to European Health Insurance Card clearing centre. In 2006 the on line access had only two hospitals (Oncology Institute of St. Alzbeta and Hospital in Nove Zamky).

Only few general practitioners or specialists have their own website.

Most hospitals have their websites but these do not have the character of eHealth services. The websites provide mostly names of departments and names of responsible persons at the level of the department.

There is a certain number of websites in Slovak language focussing on pregnancy, newborns, chronic diseases etc. Some websites offer free of charge medical consulting, other provide lists of links to homepages of general practitioners or specialists.

Box 8: eHealth in SlovakPrix Multimedia 2005

The SlovakPrix Multimedia 2005 competition featured eHealth as one of competition categories. The following eHealth applications were awarded prizes:

www.babetko.sk – portal on infant health

www.medicament.sk – portal on medications

www.svetzdravia.sk – portal on general health issues

www.zdravcentra.sk – primary healthcare portal run by pharmaceutical company Zentiva

There are also other websites providing eHealth information to health professionals and general public:

www.mediclub.sk – portal designed primarily to physicians and other health care professions; Access is limited, because it requires registration and password.

www.medinfo.sk - Quick biomedical information web-sites database for students, physicians and public; partly in Slovak language and English.

www.mia.sk – link to health institutions, providers; press monitoring

www.medicus.sk – comprehensive health care informative portal;

www.primar.sk - comprehensive health care informative portal;

www.nadoroveochorenia.sk – portal on oncology run by pharmaceutical company Novartis

www.npop.sk – portal for oncology patients run by Oncology Patients Support Foundation.

In respect of eHealth solution, there are very few municipalities (Bratislava, Nitra), which offer its citizens home care services – personal portable communication system. The number of its users is rather limited due to financial aspects.

II.5.5 eServices for governance and participation

The Act on Freedom of Access to Information allows anyone to request information through email from all publicly financed institutions. All acts proposed by Government Ministries and all non-secret documents to be reviewed by the cabinet have to undergo the public commenting procedure. These draft laws and documents are posted online at the website of the proposing body and listed [centrally](#) on the Government website, allowing all entities to comment electronically or in writing.

In the area of justice, the [JASPI](#) database of legislation allows citizens access to all valid legislation on-line. The Ministry of Justice has also begun publishing court decisions on-line, which have previously been very difficult to access, only through individual courts.

At municipal government level many local governments have begun publishing on-line the agenda, as well as minutes of sessions of local councils. This has allowed improved stakeholder access to decision-making. The share of Slovakia's municipalities with a website is estimated at 470 out of 2 930, according to www.e-obce.sk but such services are more widespread among larger cities.

II.6 Problems with existing services and responses

The major present problem with eGovernment services is the lack of transaction ability. Of the few existing applications, the use is limited by the very limited spread of electronic signature. While in 2006 was the first year that tax payers were able to file income taxes online, the filing process still required them to later submit a hard copy signed on paper and was used by only a few hundred taxpayers.

A significant problem with existing applications is the lack of a common platform, lack of mutual integration and deficits in usability across the major existing applications. The applications have different interfaces as a result of being made by different providers with a lack of published standards.

The problem of fragmentation of existing services is being addressed in the context of the Roadmap to Informatisation of the Public Administration, with significant progress already in 2006 in the launch of the central portal. This concerns especially allowing communication between existing registries maintained by various Government departments.

The Information Society Action Plan within the National Lisbon Strategy aims to resolve the problem of electronic signatures by finding a less costly solution. As of late 2005, according to the National Security Office in charge of electronic signature six certifying authorities had announced plans to provide the service while three were already functioning but overall numbers of requests for digital signature certification by citizens were low.

To address issues of ICT skills among public administration employees, European Computer Driving Licence (ECDL) implementation across the public administration begun with pilots in 2005 at the MTPT. Originally, all civil servants were supposed to undergo ECDL certification at the basic level by 2008, but this requirement has been scrapped in 2006.

At present, developments in back office reforms related to eGovernment are much more significant than the publicly available eServices. Most Central Government bodies are currently undergoing upgrades in the information systems, which are a pre-requisite for making eServices available in the future.

The Audit of ICT for MTPT found that among the key barriers are the old administrative procedures unsuitable for eServices without change. The broader problem therefore rests with the insufficient client orientation of the public administration.

There are several problems in providing the eServices in health sector. The problems are touching all the actors in the sector. Firstly, like in the case of public administration employees, doctors ICT skills are in general limited and patient records are very often kept in paper form. This issue is being gradually resolved with the entry of a younger generation of doctors with better ICT skills.

The clients on the other hand are not fully aware of potential benefits of the eServices. This is also demonstrated in Figure 4 below showing that Slovakia lags behind the EU15 in using the internet to search for information related to health. As there is not enough knowledge of the eServices there is a lack of demand for them. Thus the healthcare providers and HICs do not face pressure to improve the provision of eServices.

In spite of the optimism arising from positive developments in the insurance market in the past few years, the Health Insurance Companies (HICs) lack incentives to provide eHealth services. Applications with limited functionality such as Internet access to personal health insurance accounts are only provided because they are required by law. The aim of the HICs was only to comply with these requirements but they were not interested in going beyond legal requirements and using access to patients' accounts to improve administrative efficiency. The insurance accounts only provide information on how much was paid to individual providers but do not show for what services, making ex-post control by the client impossible. With regard to medicine prescriptions, the insurance accounts provide information on the price of the drug and on how much the HIC has contributed to financing of the drug. Further, the access to the account is quite complicated. The client has to visit the respective HIC and sign an agreement to open the account.

The HICs have also been criticised for insufficient communication with their clients. Despite the increase in the number of eServices, the HICs still lag behind the level of eServices provided by the Social Insurance Agency. Similar situation exists in relation to health care providers (inpatient/outpatient care). Electronic invoices and reports have only been introduced gradually. HICs are aware that billing systems currently in use does not fully reflect the fiscal reality, because internal control mechanism is missing. Efforts at improvements of accounting systems have, however, been limited. Also until now the HICs have not released quality standards for health care provision.

The issues concerning provision of eServices by the HICs have not been addressed yet. Hopefully the present Government will assess the present situation and prepare a framework to stimulate better eServices provision by the HICs.

II.7 Acceptance and usage of eServices

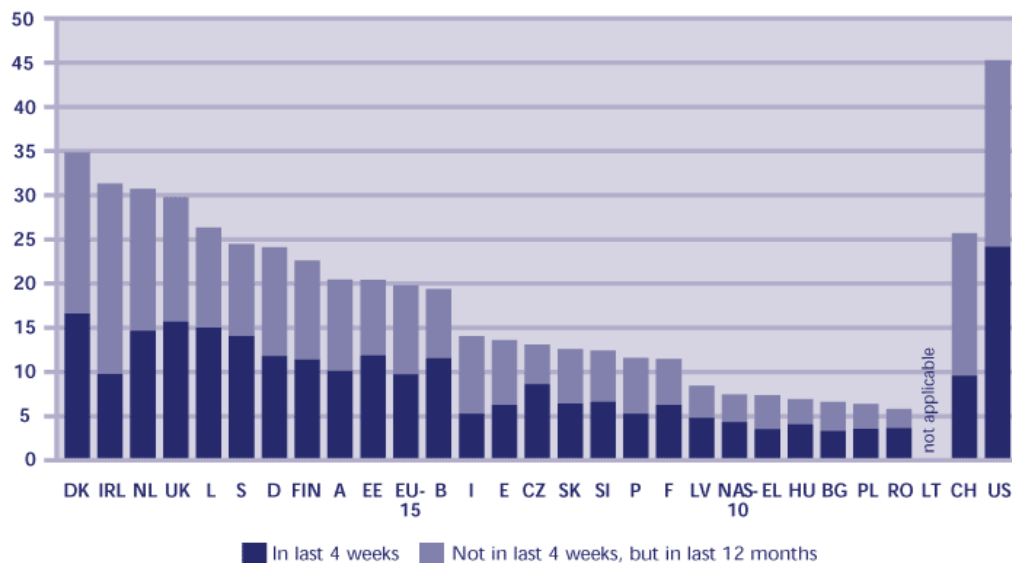
II.7.1 Usage by citizens

Despite deficit in availability of eServices in eGovernment, most surveys indicate both strong usage of existing resources and interest in other services.

Eurostat data for 2005 showed that 23.7% of Slovaks aged 16 to 74 used Internet to obtain information from public authorities' websites, a figure above the EU25 average of 20.7% and even the EU15 average of 22.9%. Similarly, for downloading official forms, the Slovak figure of 13.5% was ahead of the EU25's 10.5% and EU15's 11.3%. The sending of filled forms at 6.5% compared to the EU25's and EU15's 6.1% and 6.7% respectively.

In 2003 Slovakia had worse results in comparison with EU15 in regard to search of online information purely related to health. Only around 13% of Slovaks searched for health-related information 12 months before the survey took place, while the average in EU15 was 19.9%. On the other hand Slovakia was above average in comparison with EU10 where only about 8% of people searched online information on health related issues in 2003. If one looks at how many people searched for health related information four weeks before the survey took place, then it can be concluded that the situation for Slovakia is similar as described for 12 months before survey realisation. For details see Figure 3 below. Although its importance varies across countries, online searching for health information is clearly becoming a significant element of the health-related activities of the population and needs to be given due attention in public health policy.

Figure 4: Online searching for health-related information amongst the population overall



Base: All respondents, weighted column percentages

Questions: B1d, B2d

Sources: SIBIS GPS 2002, SIBIS GPS-NAS 2003

This picture is complemented by data from domestic surveys. According to an MVK poll 5.9% of internet users in Slovakia regularly visit eGovernment websites, while 54.9% have not visited them at all. This number shows improvement compared to the previous year's figure of 65.3%.

Websites of municipalities were never visited by 48.7% of users. 6.3% of users visit them regularly, mostly to look up business hours. Some 80% of users demand this kind of information, while 70% are interested in downloading forms. 51.4% of users have never tried using the internet to accomplish

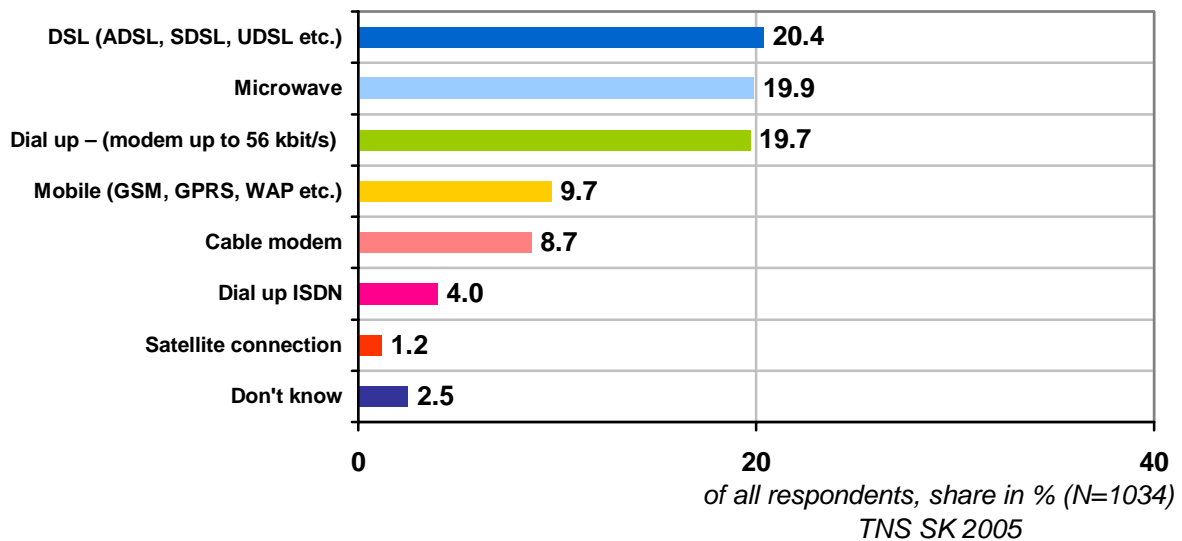
official business, 11.9% found information they required, 11.1% downloaded and printed required forms, while 5% failed to find what they needed.

According to the TNS SK survey carried out by online panel among 1 034 respondents in 2005, there is a high level of interest in Government services on the internet. 73.3% of respondents believe they “allow people to take care of issues more comfortably”, 69.1% believe they are faster than traditional methods and 68.3% believe they allow issues to be arranged at a more appropriate time. About one third, however, had a problem with security issues and significantly, only one third felt comfortable transmitting personal data over the internet. The survey found that 65% of the internet population had used eGovernment services within the past 6 months with the portal obcan.sk leading the list of services accessed, 45% had downloaded tax forms for personal income tax, 43% had looked up income tax information, 39% had obtained health insurance information and 35% had accessed information on issuing of driver’s licences, passports or car registrations. 51% of the internet population were satisfied with eGovernment services, while 39% were dissatisfied. 74% of users see the internet as a safe payment medium for public administration services.

The portal obcan.sk was found to contain sufficient information and be satisfactory by 29% of users, 20% were dissatisfied with available information, 10% failed to find required forms and 5% found sufficient information but were dissatisfied with them. 31% of users saw as the portal’s main shortcoming the lack of interactivity.

It must be noted that the polling methodology casts a doubt on the representativeness of the iPanel used in the online survey.⁵²

Figure 5: How people connect to the Internet



With respect to eHealth, a survey conducted in 2003 by NGO - Partnership for Prosperity 61% of adults in Slovakia have an interest in online appointment scheduling. This latent demand is currently certainly not met in any way.

High interest in eHealth service prove also relatively high number of premium holders of VsZP (the biggest Slovak HIC), who have applied for eService – health account statement. The service is offered since January 2006 and in July VsZP has registered 3 405 applications.

The most successful health related portal www.babetko.sk, is the top visited website among Slovak health related sites.⁵³ The second rank belongs to the official eHealth portal, www.zdravie.sk.

⁵² Users likely to take a poll online may be the ones more likely to use interactive web services of any kind.

II.7.2 Usage by businesses

Among enterprises, Eurostat data show penetration figures comparable to EU25 averages for obtaining information and forms, but much weaker figures for returning filled forms, reflecting the shortage of transactive services. While in 2005 50% and 51% of enterprises obtained information and forms respectively from public authorities' websites, the EU25 figures were 51% and 50%. For submitting forms online, the Slovak figure of 16% was about a half of the EU25's 33%.

A June 2005 TNS SK survey polled enterprises in selected fields (industrial production, construction, retail and wholesale, hotels and restaurants, transport and storage, real estate, trade services, R&D) on their eGovernment services usage. The survey found 44% of enterprises using eServices of the State Social Insurance Agency (filings), 42% using eTax filings for income tax and 40% VAT filings, purely electronic contact for filing was used by 20%, 28% and 24% respectively. While 32% used eGovernment service 1-10 times in the past six months, 33% more than ten times. One way transactions (looking up information, downloading of forms) dominated the usage patterns with 78% and 64% respectively.

Usage of eHealth services offered by HICs increase significantly. Data of VsZP (the biggest Slovak HIC) shows that 2 062 businesses already submit forms through internet and another 1 000 have applied for this service (as of July, 2006).⁵⁴

II.7.3 Technical and social factors Influencing use of eServices

Internet banking applications are relatively widely used and available from all major Slovak banks, which should facilitate the take-up of eGovernment services as they become available. According to Eurostat Data 13% of individuals used Internet, in the last 3 months, for financial services (Internet banking, share purchasing). Although, far below the EU-25 average of 22%, the figure was high compared for instance to the Czech Republic's 10%, Hungary's 8% and Poland's 9%.

Above-cited surveys show that many internet users are simply not aware even of existing eGovernment services, but gradually use is rising and as well as significant demand for eServices from the public administration.

While hard to capture in statistics, one factor stimulating the use of eServices could be the high degree of complexity of existing administrative procedures – available figures on interaction of citizens can reflect not only their demand but also the fact that many existing procedures in public administration are very complicated and time-consuming.

Precisely reduction of complexity of administrative procedures and detection of frauds is the key driver of ICT development at Health Insurance Companies (HICs). For example, at the moment the health care providers, i.e. doctors, store in their computers data about delivering a service according to their own perception, which is not always compatible with the reality. New billing system will enable the HICs to track better whether and in what extent the respective doctor provided certain service. Due to bigger strictness of the new system, the HICs anticipate certain hostility from health care providers towards new billing methods.

⁵³ Website ranking www.naj.sk as of September 2006

⁵⁴ In comparison, Social Insurance Agency processes monthly electronic filings from over 40 000 businesses. However, health insurance market is divided between five HICs.

II.8 eGovernment effects

II.8.1 Effects of eGovernment on public sector reform

In Slovakia's strategy of modernising and decentralising the public administration eGovernment has been seen as a tool suitable mainly for the later stages of the process. Early stages of modernisation carried out after the adoption of the 1999 Strategy have focused on other reform priorities, while making note of the possible contribution of developing eGovernment.

The effects of eServices developments so far on public administration reform have been limited. Main visible effects can be seen in specific institutional changes to accommodate the growing importance of the eGovernment agenda and to a degree in the area of transparency, where the requirements to publish information electronically have led to greater openness in many institutions.

The specific institutional changes have involved the creation of the new post of Plenipotentiary at the central level. In addition, however, in many public sector organisations the freedom of information act requirements of electronic access to documents have stimulated changes in working procedures: e.g. in local governments, which publish agendas and records of various committee sessions.

II.8.2 Benefits for public administration and users

No effort has taken place at this stage to measure the net benefits of the expansion of eGovernment and eHealth services. Given the point in information society development, energy has been focused more on making new services accessible than measuring the effects of existing services either on the public administration or on users themselves.

The effects within public administration are most visible in the one area where eServices are most developed and used – the Social Insurance Agency. The agency presently processes monthly electronic filings from over 40 000 businesses with 10 or more employees. Prior to electronic filings, this requirement did not exist but the agency estimates that without electronic filing, the agency would have required several hundred additional employees for data entry to meet the new legal requirements after Act on Social Insurance changed in 2003.

At the present stage of evolution of eGovernment services they have at best had a moderate contribution to the spread of use of information technologies. The most significant contribution is likely to have come in the spread of use of the internet in small businesses through the introduction of possibilities to file social insurance information on-line. However, no specific research exists gauging this contribution.

It is likely that users of the presently available eGovernment and eHealth services come primarily from certain age and income groups – the limited development of eGovernment services has been unlikely to reach out to new users.

II.8.3 Effects on governance and democracy

The introduction of certain elements of eGovernment has played a key role in increasing civil society involvement in the policy process and oversight of the public sector. There are a number of mechanisms introduced over the last several years that have visibly increased both access to information and ability to intervene in the policy process.

The major impact has come with the 2001 Act on Freedom of Access to Information, which allows email as a legitimate mechanism for information requests and the world-wide-web for dissemination of information. Email requests from a variety of state institutions are very common and allow citizens, businesses and civil society organisations to request information rapidly and without significant transaction costs.

Another significant area of eServices affecting governance was the introduction of legislative commenting procedures. All materials proposed to the cabinet for approval or as information must be posted on the Government's website for a stipulated period of time and any institution or individual can submit comments electronically (or in writing), which must be reviewed by the proposing authority. Group comments over a specified threshold are subject to personal negotiation between the proposer and the commenter. Various initiatives have used the worldwide web to gather signatures of supporters for group comments. This mechanism has allowed unprecedented input into policy-making notably by civil society organisation, which can easily track newly proposed legislation and submit comments without significant transaction costs.

At the level of local government, where the internet is used to disseminate information on agenda, votes and proceedings of municipal councils, there are multiple localities with strong involvement of civil society organisations in tracking local decision-making.

On-line websites have been used effectively to collect signatures for petitions by a variety of civic initiatives.

While no measures exist of the tracking of the legislative process in Parliament, the current system of tracking on-line provides near-real-time information on progress of legislation.

II.8.4 Effects of eServices on PPP and public procurement

The Slovak public procurement system uses eServices only to a limited extent, mainly for data entry and dissemination but as of 2007 the existing law requires the entry of procurement of goods only electronically (electronic procurement is optional for services and labour).

A system of centralised procurement of selected commodities is presently under discussion, with the expectation that electronic procurement requests will be built into the system.

Since 2006 registered public and non-public procuring entities are able to submit information on procurement carried out for the official Public Procurement Journal through an online interface.

The Public Procurement Herald is also available electronically. However, users frequently complain about the format which is not user-friendly. A number of private subscription services exist at national level disseminating information on public procurement tenders.

Public private partnerships, although legislatively in a grey area, have been successfully implemented in a number of eGovernment projects. The most notable ones include www.portal.gov.sk (formerly www.obcan.sk), Computers for Schools (and the Infovek project) and electronic trade register www.orst.sk. Further public-private partnerships exist with local governments on two eGovernment projects: www.isomi.sk and www.mesto.sk.

II.8.5 Forecasts, assessments and projections

Audit of ICT for MTPT estimates the total cost of introducing eServices in 20 key services at SKK 3.8 billion (about EUR 100 million). Projections exist in the area of ICT expenditure by Government but not on eServices.

The Audit estimated that the introduction of eServices would cover its costs in direct taxes within five years. The calculation was based on the following assumptions:

- average citizen can save one week (41.8 hours) of working time through eServices – 74% of the time presently spent or SKK 3 996.50 given the average wage of SKK 15 299,
- if the loss of time is not compensated with vacation (with potential secondary effects on health), loss of GDP amounts to SKK 3.337 billion per year,

- based on 26.8% internet usage, direct taxes would cover the cost of eServices estimated at SKK 3.8 billion within five years.

Due to the unsystematic nature of design of policies in the area of eGovernment there is a shortage of ex-post surveys or assessments of these policies. Carrying out such assessments is not a part of the Slovak policy-making culture.

The contribution of the use of eGovernment and eHealth services to growth and competitiveness is difficult to gauge in the absence of research on the topic. Nonetheless, there are some functioning eServices, which have a clear contribution to productivity and thus in effect have very likely contributed to the competitiveness of enterprises.

III: ASSESSMENT OF THE CURRENT DEVELOPMENTS AND TRENDS

This chapter explores the present achievements and shortcoming in the area of eServices, the underlying factors of development, as well as potential future drivers and barriers affecting the deployment of eServices.

III. 1 Current situation and trends in eGovernment and eHealth

III.1.1. Achievements

In international comparison the **achievements in eGovernment and eHealth in Slovakia are quite limited**. The achievements have to therefore be viewed in the context of Slovakia's earlier slow progress in this area.

A key recent achievement is in the **formulation of coherent and clearly focused policy documents** with clearly articulated Action Plans. These have replaced earlier information society policies driven mainly by the need to comply with the Acquis and international obligations under eEurope+. At present an Action Plan is in place as part of the National Lisbon Strategy along with the Roadmap for Informatisation of Public Administration. Already at this time a number of tasks are behind schedule. The very existence of action plans with specific tasks and deadlines reflecting that at cabinet level there was political will to make accountable commitments on eGovernment must be seen as an achievement.

Another achievement resulting from the adoption of the 2004 Strategy of Informatisation and the accompanying Action Plan is the institutionalisation of the Plenipotentiary of Government for Information Society. The Plenipotentiary is a **policy maker with sole responsibility for information society**. After the creation of the post debates continued in the IST policy community on whether this was the optimal institutional arrangement and there are alternative policy options (discussed in detail in Chapter IV). However, in the Slovak context, it is an achievement to have a clearly defined champion for information society.

Again in context of slow development of eGovernment in Slovakia until very recently, it is an achievement that **most public authorities now make a variety of information available online**. All Ministries and other central institutions have websites and the number of local governments without a web presence is declining. Early successes of widely used government websites include the well-functioning Trade Register but also specific projects such as the list of Communist-era Secret Police agents and collaborators.

In the area of eGovernance a fully functional **system of electronic dissemination of proposed legislation and other non-legislative documents** to be debated by the cabinet is in place. All government bodies publish proposals of laws online, allowing all stakeholders to review these and submit comments (objections) electronically. Individuals can submit comments even anonymously in theory and e-mail is a legally recognised channel along with other forms of communication. Larger groups of citizens can make comments requiring the proposer to hold formal discussions with the objectors. Civil society organisations have taken advantage of the procedures to comment on proposed legislation, often successfully modifying original proposals. Detailed information is also available online on Government and Parliament sessions. Citizens can check deputies' voting records, attendance and transcripts of sessions of Parliament along with audio and video feeds.

Levels of use of already available (mostly non-transactional) eGovernment services also represent a significant achievement: **Slovaks use available eGovernment resources to a greater extent than the EU25 and EU15 average**, showing strong demand for online communication with public authorities. This signals potential for eServices take-up once they are developed. According to Eurostat data from 2005, 23.7% of individuals obtain information from public authorities' websites,

compared to 20.7% in the EU25 and 22.9% in the EU15. Among businesses, shares of those using the internet to obtain information and download forms match EU25 averages as well.

The major achievement in terms of available eServices focuses on the **functioning eServices of tax authorities and the Social Insurance Agency**. Selected taxes can be filed electronically, which is done mainly by larger enterprises. However, the Social Insurance Agency's introduction of a system of electronic filing of reports from businesses on employee social contributions mandatory for employers with over 20 employees has worked smoothly, showing the readiness of even medium-sized businesses to embrace functional eServices.

It would be very difficult to discuss eHealth development in the Slovak Republic three years ago. At the beginning of the health care transformation process (early 2003), policy makers were focusing solely on vital functions of the Slovak health care system (to stop indebtedness, establish stable rules, etc.). Therefore, the implementation of eHealth actions, which arise from the general National eStrategy, were postponed, though not cancelled.

World Bank's assistance had significant importance to eHealth development in Slovakia. Due to the fact that the Bank assisted in comprehensive sector restructuring, **importance of ICT issues as part of international trends** was addressed in accordance with progressive trends in eHealth.

The crucial achievement of recent past is the **existence of eHealth strategy documents** and the establishment of eHealth Competence Centre at NCHI, which is pushing forward particular objectives in eHealth agenda.

However there is threat of **discontinuity due to change of cabinet**. The steps taken by the current cabinet of Prime Minister Robert Fico lead to changing and replacing some reform measures of the preceding cabinet. The scope of anticipated changes seems significant; the government might therefore not have enough energy to also pay attention to the eHealth agenda. The eHealth Committee was not functioning over a half year into the appointment of the new health minister.

In respect of the upcoming 2007 - 2013 planning period for EU funding the formation of a **separate Operating Programme Informatisation** is considered as a clear advantage. The programme will focus on eHealth as one of its top three priorities.

Despite the fact that the range of the eHealth services is rather limited, they still represent the **first steps towards more complex services in health sector**. Especially important is the online access to the personal health insurance accounts. Even though this service has several shortcomings, it is first service defined by law.

At the moment, the most visibly activity in eServices is related to **different health portals**. The portals usually represent private initiatives that fill-in the gap on the supply side. MH has also started an official portal www.zdravie.sk that a variety of health related information and full texts of relevant laws, as well as contacts information for different institutions.

III.1.2. Shortcomings

Slovakia has **lacked a driver at Government level to build up eGovernment** until recently. Reforms in public administration and decentralisation of public administration in the late 1990s and early 2000s had a focus on efficiency but eGovernment was not perceived as a particularly important instrument in this area. There was no champion of eGovernment and information society in general at senior levels of Government, no approved vision of developing eGovernment and no genuine drive to use eGovernment either in back-office functions or to provide services to citizens and enterprises.

The area of eGovernment specifically and more broadly, the area of information society have long suffered from **institutional instability** – the latest change takes place in early 2007 with the move of

responsibility to the Ministry of Finance, replacing the arrangement with the Ministry of Transport, Posts and Telecoms set up only in 2004. With the present arrangement where responsibility for information society will be divided between two institutions (Ministry of Finance and Government Office) there is a danger that the two institutions may in some cases compete for competencies over information society and in other situations they may both try to assign responsibility to the other organisation. Therefore clear division of responsibilities between the two institutions and their good coordination are crucial for future development of eGovernment. Regardless of what the appropriate institutional arrangement is, the instability has constituted a significant shortcoming clearly hurting the progress of the information society and eGovernment agenda.

The lack of coordination and institutional instability has resulted in a landscape of ICT deployment in Government and eServices with **major problems of interoperability**. Systems in individual departments and institutions have been supplied by various suppliers and in the absence of centrally set standards. Unresolved issues remain in interconnecting registries and database systems across departments but also within individual departments. These technical shortcomings must be overcome before further steps in building eGovernment applications can be taken.

This also results in **inefficiencies in the use of funds for ICT** in Government, as well as eGovernment applications. Although there is a significant lack of reliable data on outlays in this area, it is clear that the lack of coordination leads to duplicities and inefficient spending. Additionally, potential synergies from joint purchasing of hardware and applications are not exploited. Many departments procure their own network resources rather than use Government infrastructure already in place.

The most significant shortcoming in terms of eServices is the **limited availability of functioning eServices** – only four of the 12+8 eEurope-defined basic services for citizens and businesses are fully digitalised – only one of them for citizens. The services operate on disparate software platforms, with differing interfaces. Existing services sometimes require additional initial investment in the form of purchase of eSignature equipment, signing of additional contracts with public authorities, etc.

This is reflected in the **low percentage of citizens who use the internet to submit forms to authorities**: according to Eurostat 2005 data, this share among individuals is 6.5%. This level is comparable to the EU25 average but far from the levels reached by the EU member states advanced in the provision of eServices.

While situation at the level of Central Government has seen improvements, **progress with regional and local governments has been very slow**. With the exception of individual cases little systematic progress has been made. In part this stems from the nature of local government – it is harder and less desirable to force changes by law on individual municipalities or regions. On the other hand, experts interviewed have indicated there was potential for joint action and need for support from Central Government, which were not in place.

The previous Minister of Health (MH) invested a lot of effort in restructuring of health sector, redefining roles and limiting the power of MH (new authority monitoring health provision and health insurance performance was established, hospital autonomy was granted, etc.). The objective of such measures was to obtain managerial efficiency and focus only on strategic issues. The **current cabinet has decided to again centralise powers** and even to set up a special fund that will centrally collect resources from health insurance companies and the MH will decide on the use of those funds.

Despite the comparatively high educational attainment, **penetration of internet among physicians is generally very low**. Physicians are not aware of available technology and its relevance for their profession.⁵⁵

⁵⁵ eUser: eHealth Brief Slovakia 8/2005

Knowledge of ICT and eSkills are low, there are **problems even with access of doctors to PCs** and all patient records are kept in paper form. A basic difficulty lies in insufficient incentives for general practitioners to improve their services, as they are paid by insurance companies on the basis of number of patients they treat.

Regardless of reforms, the **health care sector is financially undernourished**. Many hospitals are just recovering from debts, unable to cover mandatory real amortisation and lacking financial resources for many basic investments. This is reflected in outdated equipment including no or insufficient access to the Internet. Moreover, existing information systems in the healthcare sector are usually not networked. Thus any attempts to support informatisation will have to be backed up by external sources.

It must be noted that majority of **citizens are not aware of potential benefits of eHealth services** thus they do not create pressure on health care providers and on HICs to improve their eServices. Maybe also due to low level of public pressure the HICs are not motivated to provide good quality eServices. As already discussed in Chapter II.6 the main problems are that creation of the insurance account by HICs is quite complicated for the client and if the client has such account he or she will obtain only very general information on spending on his behalf by the respective HIC. Further, the HICs do not use fully the possibilities of eServices in regard to health care providers (invoicing and billing) and HICs do not use the eServices for their own more strategic management in terms of improving their overview of services provided by doctors and of monitoring of administrative efficiency.

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

III.2.1 Economic factors

Increase in prosperity through **strong and sustained GDP growth and subsequent real wage growth** in recent years has served as a stimulating factor in take-up of IST by citizens and businesses through increasing their affordability. Although from a low base, availability of computers, internet connections and digital literacy are growing. Slovakia's economy has been growing at the fastest pace in the region and is expected to continue to grow strongly.

The **slow progress of telecoms liberalisation and weak regulatory environment** have kept the prices of internet access high and limited the spread of the internet. For years, prices of dial-up internet connections were very high and undoubtedly the current levels of internet penetration still reflect this. Broadband internet penetration is also relatively low due to a late start and limited competition, although the growth rate has accelerated with the offerings of cable TV operators and mobile providers competing with DSL technology.

Slovak IT market has seen strong growth and is competing for **limited human resources** with higher-wage EU countries. Slovak IT professionals often seek employment abroad and this has been further aided by the opening of labour markets after EU accession. It has also affected the quality of IT human resources available to Government.

Developments in the health sector have suffered from a **lack of sound financial rules, sufficient accountability and personal responsibility**. In the view of several experts interviewed, to develop eHealth services, the healthcare sector requires stability in the face of changes in government, which so far appeared difficult to achieve in Slovakia's political environment.

III.2.2 Information society-related factors

ICT penetration is a key precondition for the development of eServices. In this area Slovakia has in recent years improved to levels comparable with the neighbouring countries. However, ineffective telecoms regulation in earlier years decreased internet penetration since dial-up prices were very high

and broadband penetration limited. This has undoubtedly contributed to lower levels of demand of eGovernment services.

In terms of **ICT penetration among businesses**, its increase has stimulated their interest in using electronic services. With the exception of small businesses, most enterprises are sufficiently equipped with PCs, connected to the internet and have staff able to use available services. The pace of growth of broadband penetration has been very high among businesses of all sizes. However, the percentage of small businesses (below 10 employees) without any connection to the internet remains far above the EU25 average.

The **use of ICT in health sector is generally low**. This situation will change with the upcoming EU programming period for Structural Funds. Planning documents intend to invest in human resources (trainings in ICT skills) in development of Information Society including eHealth activities.

III.2.3 Technological factors

IT purchasing, software and hardware maintenance remain fragmented among Government departments. Until the recent introduction of the Act on Information Systems in Public Administration there was no legal framework for the setting of standards and advances in setting standards are slow and gradual. As a result, information systems employed in various parts of Central Government and local governments vary widely, with different providers. There is no platform for IT staff at various offices to communicate.

The fragmentation also concerns **platforms used for the delivery of eServices**. Their quality is uneven as has been evidenced by recent security breaches, as well as monitoring of accessibility of Government websites. Existing eServices employ proprietary solutions and differing interfaces suffering from problems of interoperability.

Administrative registers used in different parts of the public administration are also based on different platforms. There is therefore no system for data exchange among different institutions – rather citizens and businesses must often collect documentation from various offices.

Several interviewed experts suggested that there were historical **ties between specific institutions and providers of ICT equipment**, which would be difficult to overcome without, strong outside pressure. Moreover, sometimes the procurement of technologies was allegedly driven more by the service providers than by any genuine assessment of needs of the institution.

These technological factors have also affected the health sector: fragmented procurement, lack of interoperability between institutions horizontally and vertically. From the point of view of technology the most important moment will be if the NCHI will be able to **adopt and to implement commonly used standard data interface for health sector**. This will be the outcome of the World Bank financed project described in Chapter II of the present report. If it will be so, then there will be no technological barrier to interconnectivity and communication between existing systems, which will contribute to further development of eHealth applications.

III.2.4 Policy factors

eGovernment development had long been hindered by **unsuitable institutional arrangements**. Over the 1990s the responsibility for information society passed from the Statistical Office via Ministry of Transport, Posts and Telecom to Ministry of Education, which had limited capacity in this area. In 2003 it returned to the Ministry of Transport, Posts and Telecoms. Finally, in 2004 the adoption of a new Strategy of Informatisation led to the creation of the post of Government Plenipotentiary for Information Society, thus creating a clear and publicly visible driver specifically focused on the IS agenda. In late 2006 further changes have been made, passing responsibility from the MTPT to the Ministry of Finance and a Deputy Prime Minister, preserving the Plenipotentiary's post.

While since the 1998 election and 2002 election, eGovernment was **low on the list of Government priorities** dominated by economic reform, the success of institutional reforms in the public administration has pushed eGovernment forward on the agenda.

Moreover, following successful reforms in the public administration and various public services, the previous Government has made a drive towards **focusing clearly on competitiveness objectives based on the EU's Lisbon Agenda**. This has led to the formulation of the National Lisbon Strategy and National Programme of Competitiveness with four Action Plans, one of which is on Information Society (for details see Annex 3). Knowledge economy and Information Society in general and eGovernment specifically have thus become a much stronger priority. The present Government which came out of the June 2006 general election has pledged to continue with the agenda.

Unlike previous policies, the **quality of discussion and stakeholder involvement in the formulation of the Action Plan increased**, with individual Ministries contributing their own tasks, which has helped increase the realism of the actions proposed. Consequently, a detailed Roadmap of Informatisation of Public Administration has been adopted, specifying the key steps necessary to introduce eGovernment services widely (for details on road map see Annex 3).

There are other clear benefits of institutionalisation of information society coordination: perhaps for the first time in Slovakia's brief eGovernment history specific tasks are being formulated and met. In parallel, the focus on knowledge economy has resulted in formulation of policies aimed at stimulating the use of computers and internet and increasing digital literacy (the effects of these policies remain to be seen).

The key problem of eGovernment policies prior to the 2004 Strategy of Informatisation was their **incoherence, complete lack of specificity and lack of accountable Action Plans**. A nexus for IS policy was lacking and the Ministry of Transport, Posts and Telecoms was not sufficiently vigorous in driving the agenda.

The 2004 Strategy contained an Action Plan with clear tasks that has been regularly monitored and led progress by individual Government departments. Most importantly, the Strategy resulted in the creation of the **position of Government Plenipotentiary for Information Society**. This has put a specific face behind the information society agenda and significantly increased pressure on Government departments to actually fulfil the tasks set.

Decentralisation and modernisation of public administration within the 1999 Strategy of Decentralisation and Modernisation approved by the Government have focused reforms more on efficiency than on quality of public services. With the **progress of public administration reform and the drive towards knowledge society**, the recognition of quality of public administration as a factor contributing to competitiveness is gradually increasing. The policies in the area of public administration saw information technology mainly as a service for existing Government functions rather than a priority area itself.

Some experts interviewed said that reforms in the framework for civil service have helped expedite information society developments and eGovernment through creating **greater pay flexibility** and thus allowing the Government to attract individuals from the private sector.

Progress with information society policies in general and eGovernment in particular has been slower at sub-national level, both at self-governing regions and municipalities. The main cause is simply the **overload caused by transfer of broad competencies to sub-national governments**. As these gradually adjust to their new tasks and the fiscal decentralisation framework gets fine-tuned, desire to increase competitiveness may lead to increased focus on developing eGovernment at the sub-national level.

Policy factors have played a major role in development of eHealth in Slovakia. The first important strategy, Strategy on Development of Health Informatics for 2003-2006 and its updated versions developed for the period 2004-2006 and 2005-2006 were based on the more general 2004 Informatisation Action Plan. The Slovak eHealth National Strategy adopted in 2006 was already **designed purely for eHealth**. This strategy has built upon the outcomes of two important international projects. The National Health Information Centre together with its unit, the eHealth Competence Centre, have been established thanks to these two projects.

Regardless of political support, the **Centre will continue to operate** and it will participate in international activities focused on eHealth. NCHI has already nominated its experts to several eHealth groups at European and International level such as ETHEL, SNOMED CT, HL 7, etc.

The key issues of upcoming months will be the **planning of use of EU funds**, mainly their targeting to obtain synergic effects, so the funds will be used as efficiently as possible to support the development in eHealth and eGovernment.

III.2.5 Legal factors

The legal framework for eGovernment evolved mainly under **pressure from the European Union and requirements of the Acquis**. A number of key acts had been adopted in haste and have required amendments, although at the present stage, the legal framework is mostly seen as satisfactory.

The laws in place do not address eGovernment specifically – laws do not prevent eServices from being created but also do not stimulate their creation. The **legislative framework is therefore not an inhibitor but also likely not a driver**. The existing Act on Information Systems of Public Administration creates the necessary legal conditions for technological unification (interoperability). The legislative framework may become a more significant enabler if the government's plan to introduce a Act on eGovernment succeeds in 2007.

The electronic signature legislation which came into effect in 2002 created a highly restrictive framework causing barriers to adoption. In 2005 the Act No. 215/2002 on Electronic Signatures has been amended and should now **make the use of electronic signatures more practicable**. Nonetheless, the solution in place requires the use of certified electronic signature for most applications in public administration, on the security end of the security-efficiency trade-off.

Slovak **personal data protection legislation has proved to be a barrier** to the development of eServices. The framework is highly restrictive and has forced the withdrawal of certain electronic content (e.g. information on bankruptcies, publication of company records containing personal identification numbers of owners) due to violations of personal data protection. The introduction of different eHealth elements will be also limited by the provisions of the personal data protection legislation that may, like the Act No. 215/2002 on Electronic Signatures, inhibit further developments. The technical application of eHealth as such may bring about many questions and issues to be solved.

Slovakia's present **public procurement framework** has been a problem in many areas of procurement and has effected procurement in a variety of eGovernment efforts. The framework is seen by procuring institutions as **highly inefficient and cumbersome** and public procurement requirements have caused delays in a wide variety of projects without necessarily achieving the set goals of transparency and efficiency. Recent cases include problems in the procurement of information systems by the tax authority, repeated problems with procurement in building the government's GovNET network.

Health insurance market is highly regulated, besides that there is strong pressure from the current cabinet to change legal status of two state owned HICs back from joint-stock companies to public institutions. The legal framework in Slovakia sets that the HICs and other public institutions (NCHI)

may only do what the law allows them to do and they cannot do what the law does not prohibit. Thus the change of legal statutes of the state owned HICs would require very precise legislative setting that would not hinder HICs' functioning, which is not always easy to achieve.

III.2.6 Socio-cultural factors

According to several interviewed experts the traditions within the Slovak civil service are not conducive to the development of eGovernment, because the **civil service still lacks a client focus**. This is caused by the fact that the management of the Government institutions changes with the change of ruling political parties and most of elected representatives underestimate long-term institutional development that would include enhancement of the quality of performance hence of provided services. Normally, the management of public administration institutions is only interested in fulfilling the tasks of their own electoral term. The unattractive institutional setting also means that young and talented people usually do not choose public administration as their career. Thus the public and state organisations are more conservative, change resistant and inside oriented than other organisations in the economy. The lack of client focus is demonstrated in several ways. Many Government offices are open for communication with citizens only on selected days of the week. Forms used are not optimised to reduce the workload for the client and arranging many procedures requires repeat visits. And last but not least resistance to eGovernment on the part of some public officials but more importantly simply a lack of interest in introducing eServices, which offer little more benefit than simplifying procedures for citizens. Sometimes, introduced services are then driven more by the technological side (interests of IT departments) than of the institution's management and its overall institutional development strategy.

The policy-making culture suffers from several systematic problems, which have hindered the evolution of eServices. There is **little tradition of transparency in policy-making**, as well as limited focus on policy implementation – many Government strategies and subsequent action plans lead to little action, not only in the area of information society.

One of the legacies of slow progress on eGovernment is the existence of **vigorous private sector stakeholders** pushing the eGovernment agenda, both in industry and in civil society. IT firms and their associations have been very active in commenting on eGovernment developments, making proposals and offering solutions to both Central Government authorities and sub-national government. For NGOs, the involvement derives from the tradition of a vocal civil society built up in the 1990s as opposition to the Government of former Prime Minister Vladimir Meciar, who was seen as having authoritarian tendencies. Strong NGO sector then had key role in different public policy areas including achieving the present freedom of information framework but also in putting pressure to develop eGovernment solutions.

Increased student and labour mobility in the context of European Union integration has been probably supportive of demand for eServices by exposing Slovaks to public administrations and healthcare systems with better-developed eServices abroad.

The health sector is considered extremely **resistant to change**, due to the number of people it employs. Politicians and policy makers are aware of this resistance and often very cautious about upsetting existing balance. If attempts at “disrupting the current *modus operandi*” are not well considered there is a high risk of strong opposition and failure.

On the other hand, **demand side consisting of clients' interest does not create adequate pressure** for development of eHealth products. People still rely solely on physician opinion and prefer to “buy” health for bribes rather than to get a second opinion.

III.3. Drivers and barriers

The purpose of this section is based on previous sections of the present report to explore drivers and barriers of future developments in eGovernment and eHealth.

III.3.1 Drivers

Strong demand from some segments of society for eServices manifested already in extensive use of the limited available resources (e.g. high rates of accessing information from public authorities on the internet) is likely to continue driving eService developments. Quite possibly the traditionally significant burden of compliance with administrative requirements can drive interest in using eServices to simplify procedures and save time by citizens and businesses.

In parallel, **demand is rising for improved governance**, particularly in connection with the growing use of freedom of information legislation by the civil society. This is another likely source of pressure on public administration to use the internet for greater transparency.

This is an important potential driver also at the level of local and regional governments. **With their increased competencies the public attitudes to sub-national governments are changing**, with increased expectations. Demand from citizens could therefore drive local governments to stronger activity in building up eServices.

Improvement of internet literacy complements increasing internet penetration. The former is also a result of a generation entering adulthood which has been exposed to ICT in their education and is therefore likely to be more open to using ICT in communication with the public authorities. Also, structural funds both in the current and upcoming period are being used for numerous projects to improve digital literacy.

Improved availability of fully-digitalised services is likely to **stimulate further demand from citizens**, as well as increase their willingness to acquire a certified electronic signature. This had previously been too costly in the view of the limited number of services it was used for. Once new services are added in accordance with existing action plans, it is likely that many more citizens will consider making the required initial investment.

If Government and civil service reform continues there is a possibility of a **shift towards greater emphasis on efficiency issues**, as well as quality of services. This had been neglected during earlier reforms as priority was on more fundamental problems such as basic modernisation and introduction of a new civil service system. With essential reform measures in place, the logical further focus of reforms would be on areas such as quality of services, which could drive eGovernment developments.

The **European Union** has been a driver in the evolution of eGovernment services both through **pressure on harmonisation of legislation, through benchmarking and monitoring and by providing for exchange of information** with countries more advanced in eGovernment. It is likely to remain a strong driver: the variety of frequent comparative assessments among member states create pressure on domestic public administration to keep up with developments in other countries.

Additionally, the availability of funding within the **structural funds** for the 2007-2013 programming period should also be a driver of eGovernment development. Both the amount of funding and priorities set for the Operating Programme Information Society should allow public authorities with projects in the area of eGovernment to receive required financing.

Slovakia is competing for foreign investment with its neighbours but also lower wage EU members and other states. **Efforts to improve the business environment for foreign investors** but also in general are a driver of eGovernment deployment (specifically in the area of eServices provided by the

Ministry of Justice) and have the potential to continue driving developments. This is due to the new business culture brought about by the investors who are used to larger range and better quality of eServices in other countries. Hence they will request the same in Slovakia and therefore they will create pressure on Slovak Government to improve its eServices as part of enhancement of the overall business environment.

In spite of the constraints, the future will certainly bring accelerated take-up by end-users of eHealth also in Slovakia. One reason for this is the **increased role of the private health sector**, operating under the pressure of competition. That means that private providers and/or private HICs seek to gain an advantage by offering better services to their patients. This is feasible, albeit to a more limited extent, even if the current cabinet succeeds in passing some of the proposed restrictions on competition between health insurers.

Moreover, similarly as in other professions also in health sector the **younger generation of physicians and nurses** will have better digital literacy skills, which should change attitudes and the capabilities for ICT-based modernisation.

eHealth development at the **European level** will definitely speed up the process in Slovakia. The current situation does not yet generate conditions in which adequate eHealth solutions would be created. Not much communication is needed in health care between Slovakia and other EU countries. With increased mobility of people this situation will change when foreigners will be more frequently using Slovak health services. But at the moment Slovakia is playing a passive role, mostly as an observer of eHealth developments at the European level.

Similarly, as in the case of eGovernment, EU **structural funds** for the next programming period will play a significant role. However, there is a potential threat that the use of funds will not be sufficiently coordinated and will lead to fragmented improvements, which could result in duplicity and waste. This was partially the case in the previous programming period, when EU support for hospital information systems went to nine insignificant regional providers rather than working at the systemic level.

III.3.2 Barriers

While in some aspects the reform of the public sector has been significant there has not yet been **fundamental change in culture of public administration in regard to provision of quality services to citizens**. Without such reform internal impetus for sensible application of eGovernment remains limited. Institutions' eGovernment efforts are not necessarily driven by the incentive of improving services but are subject to ad hoc steps including duplicity and fragmentation in procurement leading to waste of public funds on projects, which will not bring significant benefits.

There moreover still does not seem to exist **determination at top levels of political leadership** to put the issue of developing eGovernment on the political agenda. Given the extent of change required in the public sector a top-down approach is very likely required and would only be possible if there was political will.

Experience of the current **structural funds programming** period showed that due to limited capacity of public administration the **focus was on absorption** to use the available funds to the fullest possible extent rather than on the quality of projects supported and their effects. There is little indication of increasing administrative capacity for the upcoming programming period. Availability of significant amounts of funding for eGovernment and eHealth development therefore does not guarantee the availability of effective projects. In some situations the focus on obtaining and spending this type of funding can lead to multiple, overlapping projects with little spill-over and limited effects.

As mentioned in the text above, **lack of clear political vision about future character of health sector** definitely blocks any development, not only the development related to eHealth. The very same applies to the use of EU funds for the next programming period, lack of strategies, rules, etc. could

lead to waste of efforts and funds. The danger of insufficient and ineffective use of Structural Funds for eHealth development is increased by current pressure to save public funds decreasing the likelihood that MH will hire sufficient numbers of qualified staff required to effectively administer resources from EU. Therefore, besides a lack of political will lack of personnel may be one of the key barriers to eHealth development.

Another factor, in addition to missing visions is the **low level of stability of the sector** demonstrated in significant changes that have been announced with respect to the health insurance market (change of legal status of two major HICs, compulsory shift of premium holders whose premium is paid by the state to the two public HICs, prohibition of profit, which must be reinvested, etc.). Regrettably, eHealth development is still seen as an additional service and not as a tool to achieve a stable and efficient health sector.

Absence of incentives to provide eHealth services by HICs and by health care providers represents another barrier. This is complemented by short experience with the already existing eHealth services and by trust issues regarding the security of on-line services.

The present **Government has not yet presented a clear plan for continued healthcare reform**. The above mentioned steps appear fragmented and do not follow some standard legislative procedures. The already approved change of legislation introducing the possibility to dismiss the Director of Health Care Surveillance Authority without reasons had taken form of an amendment prepared by Member of Parliament and was not submitted for public commenting that would have to take place if MH would have proposed the amendment. As the amendment has been put forward by a parliamentarian representing the ruling coalition it appears there was the intention to avoid public discussion on proposed changes in health care sector. Without significant reform in the financing structure of the health sector it remains unlikely that healthcare providers will see eHealth as a priority and also that change in management procedures will be sufficient to allow providers to fully exploit possible benefits of eHealth applications.

IV: EGOVERNMENT AND EHEALTH POLICY OPTIONS

This chapter reviews policy options stemming from interviews with a variety of stakeholders, as well as based on earlier analysis carried out by the authors. Policy options are reviewed in four areas: strategic and institutional, legal and regulatory, fiscal and financial and others.

Experience of EU member states with eGovernment shows that a variety of approaches and policy options exist for further developing eGovernment at all levels of government and extending the range of available eServices. Slovakia, due to slow progress, has the benefit of possibilities for policy learning and policy transfer in many areas. Some solutions, of course, have to be original – to reflect specific institutional, legal and socio-cultural circumstances.

IV.1 Strategic and institutional

As a laggard in developing eGovernment, Slovakia has a great potential to benefit from current initiatives at the EU level, as well as the experience of other EU member states advanced in the area. The EU eGovernment Action Plan approved in April 2006 addresses priorities compatible with national priorities articulated in the existing strategic documents. Taking full advantage of initiatives within the Action Plan will in the view of experts interviewed require **further capacity building** in departments responsible for eGovernment both centrally and across all levels of public administration. Although progress over recent years has been significant and staff numbers responsible for the information society agenda have increased, the existing staff still has a very broad agenda and lack dedicated eGovernment counterparts in most Ministries and other institutions.

Among institutional problems, the most important one is the issue of **appropriate institutional placement of responsibility for eGovernment**. Shortcomings of the arrangement in place until February 2007 are frequently mentioned among the causes of Slovakia's slow progress in developing eGovernment services. eGovernment and information society in general were part of agenda of the Ministry of Transport, Posts and Telecommunications and are to become part of the agenda of the Ministry of Finance. The brief of the MTPT is broad and especially the complex agenda of transport (e.g. development of highway network) and telecoms regulation had overshadowed the importance of information society.

While key responsibility for eGovernment lies with the Plenipotentiary for the Informatisation of Society, this position is not a cabinet-level post. All proposals to the cabinet must be made through a Minister (before, the Minister of Transport, Posts and Telecommunications and from February 2007 the Minister of Finance). A **coordinating role may be easier to play from the cabinet level**. Current arrangements with the involvement of the Deputy Prime Minister may be useful in terms of coordination, as long as a sensible cooperation with the future Plenipotentiary emerges. However, so far this shift in institutional set-up seems spontaneous rather than conceptual and well prepared move.

One policy option discussed frequently in Slovakia, suggested by several of the experts interviewed and used in several other EU10 countries concerns the **formation of a separate Ministry of Informatics** or a "Knowledge Economy Ministry", which would integrate other topical agendas in the area of knowledge economy to give them priority. The pitfall of this solution lies in the ability of such a Ministry to influence the work of other departments. The currently adopted alternative of shifting responsibility for eGovernment to cabinet level of the Deputy Prime Ministers may prove to be the right solution.

Such a solution can address the problem of **fragmentation of efforts among individual state institutions**. At the same time, if the Government as a whole does not view the area as a priority, institutional changes may have insufficient effects.

For local and regional governments, the major choice lies in the level of desired **integration with efforts at Central Government level**. Since responsibilities at the two levels of sub-national self-government are similar across individual governments, there is obvious scope for efficiency gains through joint approaches to developing eServices by regions together and municipalities together. Services can be integrated across municipalities/regions (horizontally) and/or with services of the Central Government (vertically). Associations of municipalities have begun working on a number of projects in this area but several experts interviewed felt that more involvement of the Central Government was needed in helping local governments.

Financial instability in the health sector remains an enduring problem and the situation seems to be deteriorating rather than improving. The changes announced by current cabinet run counter to some of the reform measures of the previous Government. The overall vision of further developments of health sector is missing and the activities of present Government seem uncoordinated and fragmented. Almost all interviewed experts have stressed a need for a clear vision in eHealth development. In addition to a well defined vision the new strategy should also contain a discussion on philosophy of eServices. It has to be unambiguously presented that eServices represent a means to improve quality of services and not an end. This will shape all the activities targeting the enhancement of eHealth. Better understanding of importance of eHealth services is important not only among the experts, but also among the potential clients who can assert pressure to have access to more and better eHealth services. This means that awareness raising activities are needed to convince people of potential benefits of new technology in the field of healthcare.

There are several areas that will certainly be included in the new strategy for eHealth. One of them is the question of why **health insurance companies (HICs) are not motivated to provide eServices** to their clients despite positive developments in the insurance market. Further, the new strategy will assess why the HICs do not offer electronic filing room services to the premium holders to the same extent as the Social Insurance Agency does for its clients. Besides assessing the reasons the strategy should provide policy options to improve the situation.

Another issue to be dealt with concerns **human resources in Government organisations responsible for the health care sector**. According to the experts interviewed, if the quality and quantity of personnel remains at the present level the established institutional platform is insufficient. More initiative and enthusiasm is needed. Also the Ministry of Health and the National Centre for Health Information claim there is a strong need for training more eHealth experts. Therefore there is a need for a strategy that would address this issue and propose steps to provide university level education in health and medical informatics.

Since 2003 MH organises an annual conference on ICT development in the health sector. It is a good opportunity for experts to discuss the progress achieved. Moreover, it is one of the few opportunities for IT people from various organisations (e.g. HICs) to meet and exchange experiences. Hence it is advisable to continue creating opportunities and forums to **stimulate discussion on ICT in the health sector**.

IV.2 Legal and regulatory

Occasionally, in public policy debates, proposals are floated for radical solutions of bureaucratic burden on citizens and businesses through legislation that would simply **require public authorities to obtain necessary information on citizens directly from each other**. So far, the opposite approach has prevailed of analysing procedures one by one and removing individual obstacles – in such a scenario there is a lack of incentives on part of individual organisations.

Legislation planned by the current Government includes an **Act on eGovernment**, which is to be put forward in the final quarter of 2007. The Act should, in the view of a number of experts, create an obligation for public institutions to provide services electronically.

Framework for electronic signature provides for state of the art level of security, to allow electronic signature to be fully equivalent to physically signed documents. However, experience of some other EU member states show that **other solutions, sometimes less orthodox, could also be cheaper**: Using banks to authenticate users or other solutions less secure than use of certified eSignature could be a cost effective alternative for many applications. This would require a fundamental rethinking of the eSignature framework, along with significant legal changes. Yet, eService applications from the tax authorities and applications from the Social Insurance Agency have already sidestepped the eSignature framework and found solutions, which required special legislation but then were functional without certified electronic signature.

In regard to provision of eHealth services, several legislative issues need to be tackled. For example future development of eHealth services will require sharing of health records by social workers, but current legislation does not cover such situations and therefore will need to be amended. Similarly, the laws do not define the responsibility in case of eHealth services failures. Accountability must be clearly assigned in such cases. Other legislative issues will undoubtedly arise from everyday practice when preparations to implement eHealth services progress.

IV.3 Fiscal and financial

With much welcome progress in formulation of policies, strategies and action plans for eGovernment since 2004, as well as Action Plans in the context of the National Lisbon Strategy, it is now clear that for tasks to be carried out it is necessary to **make financing available from the central level for the area of information society and eGovernment**. Most tasks at present are financed from budgets of individual departments. However, there is no dedicated budget for horizontal tasks – these had to be financed from the MTPT, which itself did not have funds budgeted beyond limited expenditure directly by the Plenipotentiary and the Section of Information Society. For a number of tasks this has meant that there were no budgetary funds available – individual departments did not see them as a priority and officials at MTPT responsible for information society agenda did not have extra funds budgeted by the Ministry for other Ministries' use either.

Available research indicates significant potential for **more efficient use of funds for ICT** at all levels of government. Fragmentation in procurement of hardware and software is undoubtedly extremely costly. Experts interviewed pointed out that even with existing eGovernment applications some are duplicating functions available within the Central Government portal, often at a significant cost. Although there have been efforts at tracking IT purchases across Government departments, the Government needs to develop a system of planning and procuring technologies that would exploit scale economies and support interoperability.

An important policy question with respect to eServices lies in the sequencing of their introduction and **financial and policy priority awarded to them in comparison to other policies**. Examples from other EU member states suggest that in some areas the impact of introduction of eServices is particularly great. It may be appropriate to use such experiences to sequence the introduction of eServices in a more efficient manner.

Information on usage and effects of individual services already in existence is in short supply – there is no unified framework for monitoring how services are used or for assessing future needs of users. These could serve as inputs into **benefit – cost analysis** that could be helpful in priority-setting.

For progress in local and regional governments, several experts believed the Central Government needed to **make financing available to local governments to develop eGovernment**. Funding from structural funds in the ongoing programming period was focused on infrastructure for local governments, which is undoubtedly necessary before eServices and back-office applications can develop. While there will be significant financing available again for the next programming period for sub-national governments, it will inevitably only cover a portion of projects and a portion of recipients. It is question to what degree the state should stimulate eGovernment developments in sub-

national governments with additional financial instruments versus rely on individual governments to see eGovernment as sufficient priority to invest their own discretionary funds.

Another issue concerns sequencing: the development of the more sophisticated eServices may be preceded by **developing more basic services and channels alternative to the Internet for accessing public services**, such as simple email communication with public authorities. With some institutions telephone contact is still problematic – it may be sensible to resolve this before spending resources on more complex and costly eGovernment projects.

In the current set-up with guaranteed **electronic signature**, a **significant initial investment is required from a citizen** wishing to purchase the required hardware and software. It is not clear at this stage how much of an impediment this will be to the use of eServices, as there have not been enough services to motivate citizens to do this. Some proposals discussed earlier would reduce fees for various administrative procedures if they are carried out in the electronic environment to compensate users for the extra cost. A specific proposal in Parliament at the time of writing would halve fees on services used electronically rather than in person, which may create a strong incentive to use eServices for those citizens who can access them.

Structural Funds for the health sector represent one of very important source of financing that can be used in enhancement of eServices. In the previous programming period for EU Structural Funds (2004 – 2006) nine small hospitals which successfully transformed their legal status from budgetary organisations into not-for-profit or joint-stock company, used Structural Funds to improve their information systems. However, majority of hospitals covering bigger part of outputs (number of hospitalisations, number of treatments) remained budgetary organisations and did not take advantage of the Structural Funds. It is less likely that these hospitals will be willing to co-finance the projects supported by Structural Funds from their budget received from state. As co-financing is required in projects supported by Structural Funds in this area, it will be necessary to implement the right incentives or the right support scheme so that these hospitals can start to draw on the Structural Funds for modernising their information systems.

IV.4 Others

The clear existence of a **regional and social digital divide** suggests that the Government should also consider measures to enable people without access to PCs and internet and without sufficient IT skills to access eServices. These measures could involve access and assistance provided by schools, which have IT facilities, libraries but also possibly other institutions such as local governments – with appropriate financial incentives these institutions could serve as eGovernment contact points for citizens without other means of access. Both of these areas have received some attention and funding (schools within the Digistur initiative and previously Infovek, libraries within efforts to establish digital libraries). These have not been systematically evaluated but if they will be found successful they can be built on.

Access to mobile telephony in Slovakia is very well developed. Mobile devices, especially with ongoing mobile and PC convergence, may serve as an **alternative to accessing digitalised services**. While this increases deployment costs, it would increase access to services to a larger share of the population.

Due to the patients' and other stakeholders' limited awareness of potential benefits of eServices in the area of health an **awareness-raising campaign** on eHealth services may stimulate demand. In turn, the pressure from patients and doctors should motivate institutions in the healthcare sector to work on improving the availability of eHealth applications.

V: THE MAJOR FUTURE R&D CHALLENGES IN EGOVERNMENT AND EHEALTH

There was general agreement among experts interviewed that given Slovakia's relative position as a laggard in developing eGovernment, specific research and development challenges were not much different from those faced by the more advanced countries. However, in terms of current needs, applied research and development is of particular importance.

This chapter will highlight those issues common on the research agenda of other countries that may be of particular relevance given Slovakia's specifics and stage of development. In terms of categorising research the chapter draws extensively on the public draft report "Towards the eGovernment Vision for the EU in 2010: Research Policy Challenges"

One overarching area with a clear need for research but also clear potential of providing benefits is that of transfer of knowledge and technology both in the area of eGovernment and eHealth. The potential for catching up with more advanced EU member states and other countries ahead in eGovernment and eHealth applications is massive for Slovakia. It is, however, clear that not all projects, methods, models, procedures and successes transfer well – the advances in some countries are clearly conditional on country-specific factors from economic and social through legislative, political and cultural. Research on whether and how to employ initiatives to transfer know-how from other countries can both help avoid costly mistakes and save domestic resources. Such research, of course, takes place outside of Slovakia as well, but domestic capacity is needed to apply its results appropriately.

In this context a major challenge concerns identifying appropriate research and development capacity in the private and public sector in Slovakia and possibly also setting up mechanisms to upgrade such capacity to meet the research and development challenges outlined here.

V.1. Technological developments and challenges

Mapping of existing processes has taken place within the Information Audit carried out in 2004 for the Ministry of Transport, Posts and Telecommunications.

Key challenge in terms of technological developments concerns the area of **integration and interoperability**, both between institutions, various levels of public administration and across technologies in place. Software in use in Government comes from a variety of developers and vendors and has been developed without the existence of any centrally determined standards in the past. Some public administration institutions have carried out in-house development or through their own units (e.g. DataCentrum of the Ministry of Finance, Infostat for the Statistical Office, IVeS for the Ministry of Interior). To make existing system interoperable at the desired level the Government will require significant research assistance reviewing and standardising data elements, etc. The first steps in this effort would be to actually map the individual systems in use based on data interchange requirements identified. In the area of eHealth, a World Bank project discussed above should provide progress in terms of interoperability.

Related to these technical issues, relevant challenges exist in the area of **networked Government**. In several interviews experts pointed out that people do not necessarily recognise the logic behind delivery of services by various levels of government. In eGovernment applications an artificial vertical or horizontal divides requiring the use of separate services from various institutions and levels of government can hurt the user experience. Effective eGovernment requires networking of local governments with regional governments and departments of the Central Government but also connections across each level. However, such networking requires the development of models and

applications side-stepping the traditional pressure for fragmentation and departmentalism. Further challenges are likely to arise with respect to networking across borders.

Given the risks of the existing digital divide in Slovakia in the social, geographic, age and other dimensions and the potential to deepen it by the application of eGovernment and eHealth services, there is significant potential to employ **alternative delivery channels**. As discussed in chapter IV, mobiles as well as regular telephones are widespread technologies and their use may help to tackle some issues of inclusion and making the benefits of eGovernment accessible to as many citizens as possible. In addition, some channels (notably mobiles but also other technologies such as PDAs) offer potential for separate eServices for new applications. While research in this area is being carried out in other countries, Slovakia would benefit from applied research and development work to extend existing services to a multi-channel format and develop future services with these requirements in mind.

User needs are another area of research interest identified in the IPTS report. It is not clear to what extent user needs for the various user categories (both within and outside various levels of government) vary across national borders (and possibly within). However, such information is necessary to guide the setting of priorities in developing both eGovernment and eHealth applications.

V.2. Financing issues and challenges

IPTS highlights the need for applied research and development work in the area of **change in the public sector related to introduction of new technologies** – a “back-office research theme”. Research in this area may benefit from a large extent of NMS-specificity as public administrations in NMS in general differ from public administrations in other EU member states in relevant ways related to their relative newness. The starting point for deployment of technologies is therefore different and situation is often more complex as change in public administrations may be more extensive.

A missing element of the drive towards greater deployment of eServices has been any kind of **cost-benefit analysis**. Clearly eGovernment is one of many competing claims for Government financing and spending on it should be justified by expected benefits. At best, Government documents have been vague and general about measurable benefits of developing eGovernment. Existing applications offer possibility to research these effects and experience of other EU member states offers room to assess in advance effects of policies considered.

Similarly, no work has gone into **measuring the quality and performance** of the eServices already in place. It is not clear how citizens feel about applications that exist or what applications they would like to be made available. Clearly, this type of inquiries will gain priority only once more eServices become available and the present ones become used more widely.

No **payment model** has been established to allow payment for eServices. Ad hoc models exist with some services, usually requiring lengthy advanced pre-payment. A centralised payments portal has been considered but not yet agreed upon or developed. There are possibilities in the use of existing eBanking infrastructure, although that would probably require legislative changes,

While many in the public administration agree that **centralised procurement** could save significant amount of funds, a model needs to be developed including an institutional solution to efficiently and effectively allow the realisation of savings without excessively constraining or limiting public administration authorities.

V.3. Security issues and challenges

The 2004 Information Audit found that while the level of security of hardware in use from physical threats was satisfactory, there were **identifiable security risks** in terms of protecting networks, servers and workstations. In addition, there was a lack of well defined procedures, methods and plans to guarantee the security of information systems, especially should an incident occur where security is compromised. Developing such procedures based on international standards and experience represents a significant challenge but one that must be tackled to make sure citizens and business have trust in the security of newly available eServices. With the progress in eService availability risks are obviously increasing and it is quite likely that there will be attempts at breaching security.

In the area of eHealth the security challenges posed are also of great significance. Electronic Health Records contain extremely sensitive information with significant potential for misuse. In order to develop the visions of functioning eHealth services it is necessary to define very carefully an appropriate model for data sharing and security. Moreover, international examples are, according to experts interviewed, of limited use given the institutional specifics of the Slovak health system.

Security challenges in both domains are complicated further by the **need for public-private partnerships** in most eServices efforts. The development of applications requires the input of private contractors who often require at least temporary access to sensitive data. While this area has not received significant public attention, there is a realistic possibility of security breaches, which could compromise the reputation of eService applications.

V.4 Other research and development issues and challenges

Socio-economic inclusion is another area with particular relevance to the Slovak situation. The large Roma minority, a large portion of which is significantly marginalised socially and economically, obviously face barriers in accessing ICT. While some policy options are known, as discussed in Chapter IV, there is potential for further research to uncover whether and how eGovernment and eHealth applications can be employed to combat exclusion or at least avoid increasing it.

In addition to the Roma, Slovakia has a sizable Hungarian minority. This poses a **challenge with respect to the language of interface**. Many of the Slovak Hungarians do not have sufficient command of Slovak to use advanced applications, especially in a complex area such as eHealth. In this area, there is potential to draw on the work being carried out on automating translation and increasing overall usability.

VI: CONCLUSIONS

Achievements and Shortcoming in eGovernment and eHealth

Slovakia's achievements in eGovernment and eHealth are limited, but significant progress has taken place over the past few years in formulating policy documents and clear action plans. The increased drive towards competitiveness has led to the formulation of new Action Plans in this area, with better public discussion and involvement of the public in their formulation.

New institutional arrangements were put in place after the adoption of the 2004 Strategy of Informatisation of Society, including the appointment of a Plenipotentiary as an advisory institution to coordinate tasks in the area of information technology. As a result, there is now a specific driver for the agenda within government. However, the field of eGovernment has suffered from continued institutional instability, passing from agency to agency over the last 15 years, with the most recent shift to Ministry of Finance in February 2007.

A fully functional system of electronic dissemination of proposed legislation and other documents to be debated by the Cabinet is in place. In addition, stakeholders can comment on proposals electronically. If comments are made by a sufficient number of citizens, the proposing entity is required to hold a formal meeting with the citizens' representative.

Those eGovernment services already available (mostly non-transactional) are used widely – to a greater extent than the EU25 and EU15 average. Transactional eGovernment services to businesses have grown more rapidly than those to citizens. The only services with two-way functionality are services to businesses regarding social insurance contributions to the Social Insurance Agency and filing of taxes at the Tax Authority. In eHealth, the private health sector is growing and eHealth services are understood as one of the market advantages, and a way to promote a client-oriented approach. Private health insurers have been important players in providing access to insurance records on-line. Most of the eHealth applications for citizens (internet portals) are operated not by public authorities or health insurers but either by not-for-profit associations or commercial firms.

Lack of coordination has led to widespread problems of a lack of interoperability between systems across government. Overall, the availability of eServices is limited and the percentage of citizens who use the Internet to interact with public authorities (rather than just access information) is growing. According to Eurostat 2005 data, 23.7% of Slovaks aged from 16 to 74 used the Internet to obtain information from public authorities' websites, a figure above the EU25 average of 20.7% and even the EU15 average of 22.9%. Similarly, for downloading official forms, the Slovak figure of 13.5% was ahead of the EU25's 10.5% and the EU15's 11.3%. 6.5% of Slovaks using the Internet (aged from 16 to 74) sent filled forms electronically compared to 6.1% in the EU25 and 6.7% in the EU15.

This picture is complemented by data from domestic surveys. According to a MVK (a Slovak public opinion research agency) poll, 5.9% of Internet users in Slovakia regularly visit eGovernment websites, while 54.9% have not visited them at all. This number shows improvement compared to the previous year's figure of 65.3%. 48.7% of Internet users never visited the websites of municipalities.

In eHealth, the ongoing financial instability in the health sector has left little room to deal with such issues. Current plans for further reforms undoing other recent reforms may prolong instability and further slow down development of eHealth services. Internet penetration is low among health professionals and citizens are, as yet, unaware of the potential benefits of eHealth services.

Major factors affecting development

Strong economic growth and real wage growth have contributed to the take-up of information society technologies by citizens and businesses.

A poor regulatory environment in telecoms and slow liberalisation have acted in the opposite direction, leaving Slovakia in a weak position with respect to broadband penetration. Overall, despite recent advances, ICT penetration and its use by citizens, businesses and the health sector remains far below the EU25 average. According to Eurostat data, 23% of Slovaks had Internet access at home in 2005, unchanged from the previous year. This represents one of the lowest rates among the EU25 but slightly higher than the comparable EU10 countries, Hungary and the Czech Republic. Broadband penetration reached 1.5% in 2005 - a very low level compared to the EU25 average - but this has been increasing over the past two years, together with competition from cable TV providers and mobile operators.

IT purchasing, software and hardware maintenance, as well as platforms used for eService delivery remain fragmented across government. This is costly and also hurts interoperability. There are unresolved problems in connecting administrative registers and a lack of common standards for exchange of data in the health sector.

Strong progress in public administration reform and decentralisation, along with a drive to build a knowledge society, is gradually bringing recognition of quality of public administration as a factor contributing to competitiveness. Greater pay flexibility in the public sector has enabled government to attract more qualified individuals from the private sector.

In sub-national government, the recent decentralisation processes have been overwhelming and capacity is building only gradually. As a result, the possibilities that could be offered by the development of eGovernment have only gained attention in regional and local government in the last few years.

A national eHealth strategy was adopted in 2006, the first of such strategies with a clear focus. An eHealth Competence Centre has been established as a unit within the new National Health Information Centre.

Experts did not see the legal framework, as either an inhibitor or a driver of eGovernment and eHealth developments. Problems appeared concerning the use of electronic signatures and regarding protection of personal data legislation. Also, the public procurement framework has been inefficient and cumbersome, delaying a wide variety of IT-related projects.

The public sector suffers from issues common to much of Europe – for example, resistance to change, lack of a tradition of transparency in policy-making, and lack of client focus. However, there is great vigour among private sector stakeholders, perhaps in part thanks to how slowly government has moved.

Drivers and barriers of future developments

There is strong demand from some sections of society for the use of eServices and rising demand for improved governance, putting pressure on public administration to use the Internet for greater transparency. Improving Internet literacy is also likely to boost demand.

However, a fundamental change in the culture of public administration has not yet taken place. Internal impetus for sensible application of eGovernment remains limited.

Public attitudes towards regional and local governments have shifted from a lack of interest to growing pressure for improved performance, as this level of government has taken on new tasks

within the decentralisation process. Decentralisation and civil service reforms have also contributed to greater emphasis on efficiency, a possible driver of eGovernment developments.

The EU is a strong potential driver of eGovernment and eHealth developments – through its requirements for harmonised legislation, progress in benchmarking and monitoring, and for the facilitation of the exchange of information between member states.

Structural funds programming for the 2007-2013 period pays significant attention to the information society in general, as well as eHealth and eGovernment in particular. The amount of funding available allows for significant initiatives, if the funds are used effectively. In the previous programming period, the focus was on absorption more than effectiveness and there is little indication that capacity has improved much in the current period.

Continuing privatisation of the health sector, as well as the entry of larger, strong players is likely to stimulate the supply of eServices as a competitive tool. However, the continued instability of the sector with changing government policies may slow down developments.

Policy options

Further capacity building across government departments responsible for eGovernment will be required, so as to provide civil servants responsible for eGovernment centrally with counterparts within all relevant institutions.

New institutional arrangements, where central responsibility for eGovernment is split between the office of one of the Deputy Prime Ministers and the Ministry of Finance, should be monitored and evaluated to make sure they are appropriate for the current needs in this area. While formation of a separate Ministry of Informatics remains an option, especially to address the problems of fragmentation of efforts among state institutions, it is not clear whether it would be able to effectively coordinate other departments.

Local and regional governments have begun working jointly on developing eServices. However, many of their representatives have called for the central government to assist more in setting up a framework to develop eServices at the local government level.

In eHealth, the key policy arena still concerns health sector reform strategy, rather than specifically eHealth. Only when stability is achieved and preserved in the sector can eHealth receive greater attention.

There is a clear lack of eHealth experts, which calls for the provision of academic and professional training in this area.

A policy option that has been debated is to impose on public authorities the requirement to obtain necessary information on citizens directly from each other – this would deal with the problem of a lack of incentives in the public sector to deploy eGovernment. Adoption of the planned Act on eGovernment should be preceded by a public debate on this and other options.

The framework for electronic signatures is in place but they are not widely used. This provides room for discussion on whether other, less restrictive solutions could be used in order to facilitate access to eServices.

While earlier Action Plans concerning eGovernment have been financed in a variety of indirect ways, mostly through line Ministries, it is clear that specific and clear financing arrangements must be put in place for plans to succeed. For progress in local and regional governments, several experts believed that the central government needed to make financing available to local governments to develop eGovernment

There appears to be significant scope for efficiency gains in the use of funds on ICT, especially with respect to better coordination of procurement, as well as greater transparency.

EU Structural Funds represent a key potential resource for both eGovernment and eHealth development. In the previous programming period, there was fragmentation and inefficiency in the use of funds caused by absorption capacity problems, which, according to experts, remain unresolved in the current programming period.

Major Future R&D challenges

A key challenge in terms of technological developments concerns the area of integration and interoperability between institutions, various levels of public administration and across technologies in place.

Challenges exist in the area of networked Government. In eGovernment applications, artificial vertical or horizontal divides requiring the use of separate services from various institutions and levels of government can hurt the user experience.

Given the risks posed by existing digital divides in social, geographic, age and other dimensions and the possibility that the advancement of eServices could deepen them, research is required into alternative delivery channels, such as mobiles, that would broaden access to new services and spread their potential gains more evenly.

With respect to financing issues and challenges, Slovakia specifically and new Member States in general would probably benefit from research on change in the public sector related to the introduction of new technologies.

Thus far, very little cost-benefit analysis has been carried out in the process of developing eGovernment and deploying eServices. At best, Government documents have been vague and general about the measurable benefits of developing eGovernment. However, the benefits from existing applications can be researched, and the experience of other EU Member States could offer the means of assessing in advance the effects of policies considered.

As yet, little work has been carried out in Slovakia on measuring the quality and performance of existing services, and there is no clear payment model in place. Though a proposed model of centralised procurement in the area of ICT has been often debated, it has not yet been adopted. There is clear scope here for learning from other EU Member States, which have already resolved some of these issues.

In the area of security, Slovakia shares many challenges with other countries more advanced in developing eGovernment. A 2004 Information Audit found identifiable security risks in terms of protecting networks, servers and workstations. In addition, there was a lack of well-defined procedures, methods and plans to guarantee the security of information systems, especially should an incident occur where security is compromised.

The experience with public-private partnerships in Slovakia is limited. However, many believe that these partnerships are crucial for the rapid development of eGovernment and eHealth services. Clearly, they would bring new challenges with respect to the security of personal data.

Other challenges include the problems of socio-economic inclusion – particularly with respect to the Slovak Roma minority. While some policy options have been discussed, there is potential for further research to uncover whether and how eGovernment and eHealth applications can be employed to combat exclusion, or at least avoid increasing it.

There is also a large Hungarian minority in Slovakia, which poses a challenge with respect to interface language. Many Hungarian Slovaks do not have sufficient command of Slovak to use advanced applications such as those in eHealth. Automating translation and increasing overall usability may contribute significantly to even access to new services.

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Abstract

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

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

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