



# SIBIS

## Lithuania

*Country Report No.6*

No.6



Information Society  
Technologies



European Commission

## Preface

This report represents an important deliverable of the SIBIS project (Statistical Indicators Benchmarking the Information Society), funded by the European Commission under the "Information Society Technology" Programme, running from January 2001 to June 2003. The overall goal of SIBIS is to develop and pilot indicators for monitoring progress towards the Information Society, taking account of the "e-Europe action lines". On this basis SIBIS focuses on nine topics of interest, i.e. Telecommunications and Access, Internet for R&D, Security and Trust, Education, Work and Skills, Social Inclusion, e-Commerce, e-Government and e-Health. This report is part of an extension of the SIBIS project "SIBIS+: Statistical Indicators for Benchmarking the Information Society in the NAS: The eEurope+ Indicators". The objective of SIBIS+ is to geographically expand the SIBIS activities from the EU Member States to the Newly Associated States.

Within this part of the SIBIS+ project a General Population Survey (GPS) was conducted in January 2003 on five of the nine topics: Telecommunications and Access, Social Inclusion, Education, Work-Employment and Skills and e-Government. Although limited in their scope, some questions have been asked for two other topics, Security and Trust and e-Commerce, as well. This report analyses the outcomes with respect to Lithuania comparing it to the other NAS but also EU-15 countries, Switzerland and the USA for which the same survey was already carried out in 2002. The document has two main objectives, i.e. to be a support tool for views shared by experts in the area and, at the same time, to define indicators for quantifying some of the most critical indicators related to the five topics.

The report is organised in six chapters and annexes. The first three chapters are designed to give the reader an idea of the main outcomes (Executive Summary), the context (Introduction) and the topic research and indicators developed. The core of the report is the analysis of indicators, provided in Chapter 4. This chapter focuses on an analysis of ICT Infrastructure and Security with emphasis on telecommunications and access which are crucial to both building and benchmarking information society in Lithuania ; e-Society and social inclusion focuses on perceptions about internet usage, internet-drop-outs and E-divide; e-Education and Life-long-learning; e-Economy and e-Commerce; e-Work and e-Government.

Important findings are presented in the body of the document and additional data are shown in the annex.

The intended audience are policy makers, statistical offices at all levels (national, e.g. CBS, Statistisches Bundesamt, Statistics Finland etc., and supranational, e.g. Eurostat, OECD), industry leaders and researchers in the domain and those involved and interested in benchmarking the domain throughout Europe and the world. The questions and the subsequent indicators developed by SIBIS should be considered by those institutions as an input for their yearly surveys. The project includes a series of workshops with such institutions in the countries represented by the SIBIS consortium. The report should also be of interest to the European Commission (in particular DG INFSO) and to government officials dealing with information security programmes.

Within SIBIS+, another report (WP2) for each of the five topics has been developed during 2002/2003. That report was aimed at setting the scene on the topic, identifying existing indicators for the several topics that already exist in Lithuania and defining the gaps in the statistical coverage.

SIBIS is led by Empirica (Bonn, Germany), and includes the following project partners: RAND Europe (Leiden, The Netherlands), Technopolis Ltd. (Brighton, UK), Databank Consulting (Milan, Italy), Danish Technological Institute (Taastrup, Denmark), Work Research Centre Ltd. (Dublin, Ireland), Fachhochschule Solothurn Nordwestschweiz (Olten, Switzerland).

The Social Policy Unit (SPU) is a non-profit public organisation founded by the United Nations Development Programme and the Ministry of Social Security and Labour in Lithuania in 1995.

Selected projects implemented between 1997 and 2003:

- Lithuanian Human Development Report; 'Knowledge, Information, Technology and Human Development'- Lithuanian Human development Report 2003;
- Social Exclusion and Poverty During Transition, 2002-2003;
- Human Development Courses for MA university students (partner), 200-2003;
- Poverty Assessment and Reduction Strategy (partner), 2001;
- Lithuanian Political Party Conceptions of Social Security Issues (PHARE Democracy Programme);
- Social Protection in Europe. Accession and the Free Movement of Labour Improving the Socio-Economic Knowledge Base. EC (5th FP) (partner), 2000;
- Social Integration and Human Development EC (PHARE ACCESS), 2003

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## 1. Executive Summary

The Government of the Republic of Lithuania has declared the development of an *inclusive* information society a top priority and one of key factors of a country's well-being. The Long-term Economic Development Strategy has proclaimed a goal to make information and communications a dominant economic sector which should reach 25% of GDP by the year 2015. Between 2000 and 2002 the institutional framework for development of information society was established.

The development of the information society in Lithuania is conceptually based on the ideas and principles of "e-Europe and Information Society for All". Direct implementation of e-Europe initiatives started since the middle of 2000 across the following priorities: competence of Lithuanian population in IT; computerisation of schools; modernisation of science and education system; promotion of e-business; establishment of e-government.

However, if key political, institutional and legal prerequisites for building information society have been established, well developed statistics allowing for monitoring and benchmarking information society have not been developed yet. National ICT statistics are mainly based on targeted (occasional) surveys and biased towards the economic performance of the IT sector. It lacks 'regularity' and 'multi-dimensionality'. In this respect SIBIS+ made an important contribution to benchmarking the information society in Lithuania in the context of NAS and EU countries.

SIBIS+ proposed an original logical framework for benchmarking information society based on a General Population Survey (GPS) on the following topics: ICT Infrastructure and Security with emphasis on telecommunications and access; e-Society and social inclusion; e-Education and Life-long-learning; e-Economy and e-Commerce; e-Work and e-Government. Specially designed questionnaires allow for better understanding of key statistical indicators. (For example, what are the main reasons behind low Internet penetration: affordability or lack of knowledge and skills?). Apart from deeper understanding and better interpretation of existing information society statistics GPS adds new dimensions to national statistics and allows for international comparisons of advance in information society in Lithuania with NAS countries and EU members, the USA and Switzerland (for which the same survey was conducted in 2002).

### *Telecommunications and Access*

Assessment of access to telecommunications and its performance is crucial for development and benchmarking information society. Unlike countries of the EU where total teledensity (fixed plus mobile per 100 population) exceeds 100%, for Lithuania it reached 73.9% in 2002. In the autumn of 2002 mobile communication penetration reached 47.1% thereby exceeding fixed telephony penetration which dropped to 26.8% (from 33.8% in 2000). Apart from Lithuania among NAS countries mobile penetration has exceeded fixed only in Czech Republic. (CHARTS 4.1. and 4.2.). Decline in fixed teledensity occurred mainly at expense of people with low income (many of whom live in rural areas) who often disconnect their fixed telephones in response to tariff growth without substituting them for mobile phones.

GPS data on Internet penetration and usage show that surge in mobile teledensity had a relative small impact on Internet access. (CHARTS 4.14-4.18). This is an important value-added of SIBIS+ in this context.

GPS data 'confirm' official statistics on Internet usage and penetration and showed that these key indicators of information society are one of the lowest among NAS countries and only slightly exceed the NAS average. (CHARTS 4.9.-4.10.). However, most important contribution GPS has made to the interpretation of these indicators. Important outcome of SIBIS+ in benchmarking information society in Lithuania is that it helped to make

assumptions on the reasons behind low Internet penetration and usage beyond access to telecommunication and hardware.

Apart from insufficient teledensity (compared with countries of the EU and NAS where access to telephones and Internet usage and penetration are significantly higher than in Lithuania), GPS revealed that one of the most important reasons behind low Internet usage and penetration is unawareness of the Internet or little knowledge about it. The knowledge of the Internet in Lithuania is one of the lowest among NAS countries. The proportion of people among general population who have never heard about the Internet is much higher than the NAS average and only for Bulgaria the figure is worse. (CHART 4.11).

Important impediment to Internet usage and penetration is poor computerisation of households and high Internet access costs. According to EUROSTAT and the Department of Statistics (Household Budget Survey conducted in first half of 2002), 12% of households in Lithuania and 36% in the EU have PC. In big cities 19% of households had computers in towns -11% while in rural areas less than 5% of households were 'computerised'. Besides, Lithuania has the most expensive Internet access of the three Baltic states.

One more reason why Internet (and information technology at large) is insufficiently used in Lithuania is wide rural-urban digital divide. Internal (within a country) digital divide should be also an important factor of information society development in NAS countries. SIBIS+ did not offer approach to its assessment. It should be a topic for future research.

By experience of online usage Lithuania is close to the NAS average. Non-Internet users dominate the 'pattern of experience'. (CHARTS 4.18-4.19.) The majority of people in Lithuania use Internet at work one may assume that Internet is intensively used for work purposes. (CHART 4.12.) Although for benchmarking information society is important to know about the purposes for which Internet is being used. GSP-NAS does not contain questions on the purposes for the Internet use (work, leisure, learning, personal communication...).

### *On-line security*

In absolute terms Lithuania is among the countries least concerned about both privacy and confidentiality and data security according to GPS. (CHART 4.20). From NAS countries in Czech Republic and Estonia Internet users are slightly more concerned about on-line security than in Lithuania. However, taking into account significant differences in the intensity of Internet usage and its penetration between Lithuania and these countries, concerns over on-line security in Lithuania seems to be relatively high. Possible explanation to the relatively high concerns about security in Lithuania may be linked to poor knowledge of the Internet (CHART 4.11.) and insufficient experience of on line usage (4.17.).

### *e-Society and social exclusion*

An important GPS finding is that the majority of Lithuanians think that Internet requires advanced computer skills. (CHART 5.1). This perception may be closely linked to insufficient knowledge of the Internet and low PC penetration. The majority of respondents agree (somewhat agree) that living without Internet will increase the feeling of social exclusion. (CHART 5.4.). Although social exclusion is a complicated notion, sensitive to individual perception and before asking about it the interviewer should have clarified what is meant by social exclusion in this case (lack of communication with other people, limited access to knowledge or information, unemployment..).

There is no official data on Internet drop-outs In Lithuania although this indicator is important for benchmarking information society. In this respect GPS made important contribution to benchmarking information society by raising 'issue of drop-outs'. According to GPS Lithuania has fewer Internet usage drop-outs than the EU average (this is the only GPS indicator where the result is better for Lithuania than the EU average). (CHART 5.5.). However, given that

very few people use Internet at home in Lithuania (CHART 4.12.) the high proportion of real drop-outs is relatively big. An additional question about the reasons for dropping-out will be very useful for clarifying the situation.

Digital divide (CHART 5.6.) is less informative for Lithuania since it does not reflect - distribution of access within countries (rural-urban gap).

#### *e-Economy and e-Commerce*

According to all indicators of e-commerce presented in GPS Lithuania is far behind the majority of NAS countries and its position is worse than the NAS average, which is in-line with official statistics. (CHARTS 7.1 -7.4).

In 2001 only about 3% of Internet users were regularly shopping on the Internet. Although the number of e-commerce customers was growing, it remained rather small. It was also revealed that the majority of e-customers were non-resident Lithuanians.

A plausible regulatory framework must be in place to ensure that electronic transactions can take place effectively and securely. Lithuania is aligning with EU directives and standards to ensure consistency with the *acquis communautaire* in e-commerce. Despite initial steps to harmonize domestic legislation with international standards for electronic transactions, Lithuania failed to pass relevant regulations.

#### *e-Work*

Low participation in life-long learning (CHART 8.1.) and any learning (CHART 8.3.) identified by GPS reflect the real situation. Demand in continuous vocational training for adults in Lithuania exceeds supply. Between 5 and 10% of the labour force in Lithuania is in continuous adult vocational education while in the EU- 40%.

However, it is unclear how a respondent can make a difference between 'life-long learning' and 'any learning'.

Situation with self-directed learning looks somewhat better (CHART 8.2.), It may happen that respondents did not properly understand what does it mean 'self-directed learning'.

Participation in e-learning (CHART 8.4. and tele-cooperation (CHART 8.9.) is very high in Lithuania under the background of low Internet usage. The main explanation to this fact may be successful implementation of programme on distance learning.

#### *e-Government*

Data on tax declaration and filling the income tax return (CHART 9.1.) for Lithuania is not comparable to the EU countries (and hardly comparable to NAS) because only a certain group of the population is obliged to declare its income and submit tax declaration.

Relatively good performance of Lithuania in job searching (CHART 9.2.) could be ascribed to well developed on-line job search network maintained by the Lithuanian Labour Exchange and Labour market Training Authority.

Request for passport, drivers licence or other documents (CHART 9.3.-9.5., 9.7.) is not widely spread and its insufficient use depend not only on the ability (skills) of Internet users or access, but largely on other factors. For example, according to the survey Information technologies in Lithuania in the first half of 2002 only 50.1% of central government and municipal institutions had own Websites with information on on-line service provision.

#### *Conclusive remarks*

First results of the implementation of SIBIS+ in Lithuania showed that it made an important contribution to benchmarking information society in Lithuania against NAS countries and countries of the EU. The idea of benchmarking information society in the countries of the EU and NAS according to common logical framework and system of indicators supported by GPS is relevant to Lithuanian context. In Lithuania information society is quickly gaining

momentum in terms of political, legal and institutional readiness, however comprehensive statistics and approaches necessary for assessing and benchmarking information society have not been developed yet.

Analysis of GPS results and their comparisons with existing IT-related data revealed areas for possible improvement and research. All topics presented in GPS are relevant to benchmarking information society in Lithuania. However due to the fact that information technologies are less used in some spheres (like e-work), and because of difference between Lithuania and other countries-respondents in certain rules and regulation (for example, tax declaration - e-Government topic), survey results for some topics are less 'reliable' and comparable internationally. Besides, notions like 'life long learning' or 'social exclusion' are too complex and therefore open to personal interpretations, so their inclusion in questions should be complemented by brief explanation of their meaning.

For Lithuania the topic "Telecommunications and Access" is of crucial importance to benchmarking information society. Insufficient access in general and gap between rural and urban population is most important impediment to information society in Lithuania (and possibly in many NAS countries). Approach to assessing rural-urban gap in access in broad sense beyond teledensity and computerisation of households (knowledge of the Internet) will be very important.

Internet as a contextual social phenomenon influence economy, accumulation and dispersion of knowledge and forms of human association and communication. Crucial dimension of internet usage is purposes for which Internet is being used and reasons for dropping-out from Internet usage. Some aspects like 'job searching' reflect the pattern of Internet usage but, in our opinion, SIBIS+ should strengthen this aspect of assessing Internet usage by adding additional questions to GPS.

## 2. Introduction

### 2.1 Background

Statistical Indicators Benchmarking the Information Society (SIBIS) is a project funded under the 'Information Society Programme' of the European Commission (IST-2000-26276). SIBIS, which runs from January 2001 to September 2003, has taken up the challenge of developing innovative information society indicators to take account of the rapidly changing nature of modern societies and to enable the benchmarking of progress in European Union (EU) Member States. The indicators have been tested and piloted in a representative survey held in 2002 in all EU Member States, Switzerland and the United States. As a result, nine Topic Reports assessing the current state of the European information society and benchmarking individual countries have been published in 2003. The topics covered by SIBIS include: *telecommunications and access, Internet for research and development, security and trust, education, work- employment and skills, social inclusion, e-Commerce, e-Government and e-Health*.

In 2003 the SIBIS project has been extended with the SIBIS+ initiative. The objective of SIBIS+ is to geographically expand the SIBIS activities from the EU Member States to the following Newly Associated States (NAS): Slovenia, Poland, Slovakia, Hungary, Czech Republic, Bulgaria, Romania, Estonia, Lithuania and Latvia. This parallels the extension of eEurope to eEurope+, an Action Plan by and for the candidate countries.

This report analyses the results of the surveys conducted in the ten NAS countries in 2003. In order to produce comparable results, the survey questions have been extracted from the surveys conducted in the EU member states in 2002.

### 2.2 Country and Topic Areas

The Government of the Republic of Lithuania has declared the development of *inclusive* information society a top priority and one of the key factors of a country's well-being. The Long-term Economic Development Strategy of Lithuania, approved in 2001, has proclaimed ambitious goal to make information and communications a dominant economic sector (25% of GDP) by the year 2015. Important political, legal and institutional prerequisites for democratic information society committed to the principles of eEurope were laid down. However, the capacity of national statistics is insufficient to allow for regular monitoring and benchmarking developments in the fields of information society.

Direct implementation of e-Europe initiative started in the middle of 2000 across the following priorities: competence of Lithuanian population in IT; computerisation of schools; modernisation of science and education system; promotion of e-business; establishment of e-government. The computerisation of schools was one of the most consistent and 'resultative' measures related to implementation of e-Europe. Although regional and rural urban disparities in e-learning infrastructure and opportunities are significant. There are there main obstacles to the advancement of IT in education- lack of computer literacy/competence among teachers (particularly in basic and secondary school), limited access to computers and the Internet and inability to 'incorporate information technology in learning process. For schools in rural areas and small towns the situation is much worse both in terms of access to computers and computer literacy among teachers. There are only approximately 70% of teachers in rural areas and small towns with higher education (compared to 98% in cities). SIBIS+ examined knowledge of the Internet in a society.

E-commerce in Lithuania is presently in the first stage of development. At B2C level e-trade was used mainly for sale of books, computer equipment, mobile communication services and products, banking services and ordering food. There were approximately 10 active and popular e-stores in Lithuania. In 2001 only about 3% of Internet users were regularly shopping on the Internet. Although the number of e-commerce customers was growing, it remained rather small. Unfortunately data on e-business is scarce and obtained mostly through targeted surveys.

E-trade opened up new commercial opportunities for export-oriented enterprises. In particular it empowered small and medium-sized enterprises to participate in international markets. The analysis revealed B2B was flourishing and B2C was in the early development stage. IT distribution had become the first business sector to be dominated by e-trade and business-to-business (B2B) services.

The *Internet penetration* for companies is increasing rapidly. In 2000, only 48 % of all businesses' computers were connected to the Internet in the beginning of 2002, the figure grew to 65.5%. Lithuanian companies indicate several main problems in the Internet usage. High Internet access costs and slow data transfer are the main obstacles to broader applications of the Internet possibilities in e-business. So, the eEurope objectives cheap and fast Internet access and has not been achieved yet.

Provision of electronic *public services* is now one of the main activities of e-government. Lithuanian people usually use e-government services to obtain information or to perform direct online payments. According to the survey Information technologies in Lithuania, conducted by the Department of statistic in 2002, 97.2% of surveyed institutions (Seimas, Presidents Office, central and local government) were connected to the Internet. However only 50.1% of them had their own web sites, the majority of which were 'concentrated' in central government (65% of central government institution, of which 92% of ministries and 62% of ministerial departments have own websites).

On average 40% of employees of central and local government institutions use the Internet. In Lithuania public demand for public services depends more on the general number of the Internet users in the country. This number is still relatively small, compared to the EU countries, the number of potential users of public e-services is not so large (in the middle of 2001, only 5% of Lithuanian people had used e-government services during last 12 months), despite the fact that the majority of e-services (86 %) are being provided free of charge. Also an important impediment to e-government is mentioned above unsettled situation with the system of state registers.

In Lithuania Internet penetration has been steadily increasing. In mid 2002 21% of the population used Internet a double increase from 10% at the end of 2001. In 2002, large telecommunications companies and banks were intending to invest in the establishment of *Public Internet Access Points* (PIAPs), where citizens would be able to use the Internet. In order to enhance citizen interface, a consortium consisting of Lietuvos Telekomas, Omnitel, Hansa LTB and others was set up to provide 65 Public Internet Points across the country providing access to people in remote areas and of lower income groups. One of the major challenges in equal access to benefits of information technologies is to bridge the gap between rural areas and cities.

*IT security* issues in the Lithuanian public sector is crucial for advancement of e-business or distant education, but also in the process of creation of e-government. However, there is insufficient control over the security of information so far.

Under this background ICT Infrastructure and Security with emphasis on telecommunications and access; e-Society and social inclusion; e-Education and Life-long-learning; e-Economy and e-Commerce; e-Work and e-Government covered by SIBIS+ are crucial for benchmarking information society.

### **2.3 Overview of the Report**

The country context report for Lithuania is structured along the following topics: telecommunications and access; e-Society and Social Inclusion; e-Education and Life-long-learning; e-Economy and e-Commerce; e-Work and e-Government. For each topic the results of General Population Survey are analysed in the context of existing indicators and data from other sources. GPS data is used for the explanation of existing indicators and their role in benchmarking information society. This is the first results of SIBIS+ implementation in Lithuania. One of the aims of country context report is to propose their improvements and ideas for future research. So for each topic a critical analysis of relevance and reliability of information obtained with the help of GPS is done along with suggestions on future research.

### 3. General information about the country

#### General information for Lithuania<sup>1</sup>:

Total Population ( million)	3.5 <sup>2</sup>
GDP per capita (PPP)	7,764
Real Growth in GDP per capita (%), 2000 to 2001	4.5
Unemployment Rate (%)	12.5
Government Surplus/Deficit (as % of GDP)	-1.5
National Savings Rate (%)	16.8
Investment Rate (%)	19.4
Inflation (%)	1.3

#### Lithuania's competitiveness<sup>3</sup>.

Current Competitiveness Index- 49 (out 75 countries)

Growth Competitiveness Rank 43

Technology Index 41

ICT Subindex 43

Innovation Subindex 48

Technology Transfer Subindex (out of 51 non-core economies) 22

Public Institutions Index 34

A global economy is a networked economy in which information and communication technologies (ICT) are a core part. Network Readiness Index Lithuania ranks 42<sup>nd</sup>, among the lowest of the NAS countries. (Estonia –23, Czech Republic-28, Slovenia—29, Latvia-39).

#### Lithuania's readiness for a networked world<sup>4</sup> (out of 75 countries)

Networked Readiness Index Rank	42
Network Use Component Index	46
Enabling Factors Component Index	43
Network Access	35
Information Infrastructure	49
Hardware, Software, and Support	21
Network Policy	58
Business and Economic Environment	49
ICT Policy	67

<sup>1</sup> Source: World Bank, World Development Indicators 2002

<sup>2</sup> National population census data, 2001

<sup>3</sup> WEF, Global Competitiveness report 2001/2002

<sup>4</sup> Global Information Technology Report 2001-2002

Networked Society	49
Networked Learning	62
ICT Opportunities	59
Social Capital	27
Networked Economy	43
e-Commerce	58
e-Government	40
General Infrastructure	32

## 4. ICT Infrastructures and Security

### 4.1 Telecommunications and Access

Telecommunications sector is a key contributor to an information society in Lithuania. Access to telecommunications has a broad impact on building e-inclusive information society. Therefore, assessment of access to telecommunications and its performance is crucial for benchmarking information society. In this context GPS survey plays an important role since it allows for deeper understanding and broader interpretation of statistical data and for 'revealing' causal links between indicators.

According to Department of Statistics total teledensity (fixed plus mobile per 100 population) in Lithuania it reached 73.9% in 2002. In the autumn of 2002 mobile communication penetration reached 47.1% thereby exceeding fixed telephony penetration which dropped to 26.8% (from 33.8% in 2000). In the countries of the EU total teledensity exceeds 100%. In 2001, for example, total teledensity in Finland was 132%, in the United Kingdom 136%, and in Sweden 151%.

Among NAS countries mobile penetration has exceeded fixed only in Lithuania and Czech Republic. (CHARTS 4.1. - 4.2.).

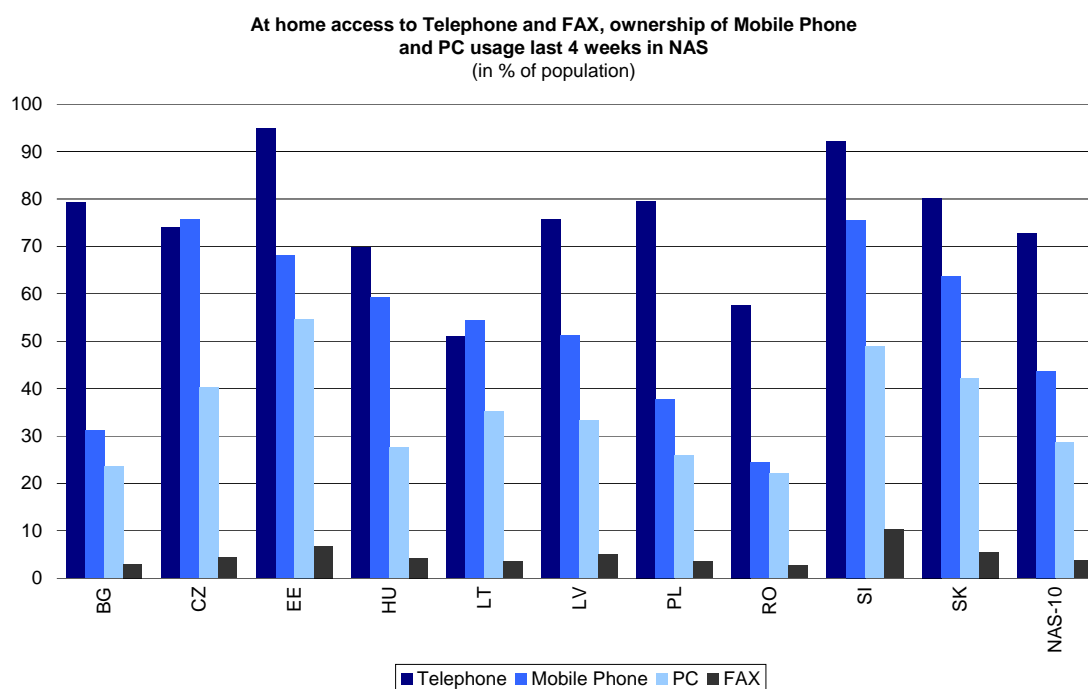


CHART 4.1.

Base: all respondents, weighted column percentages

Questions: A19a, A19b, A19c, A1

Source: SIBIS 2003, GPS-NAS

### Mobile phone penetration in Lithuania (in % of population)

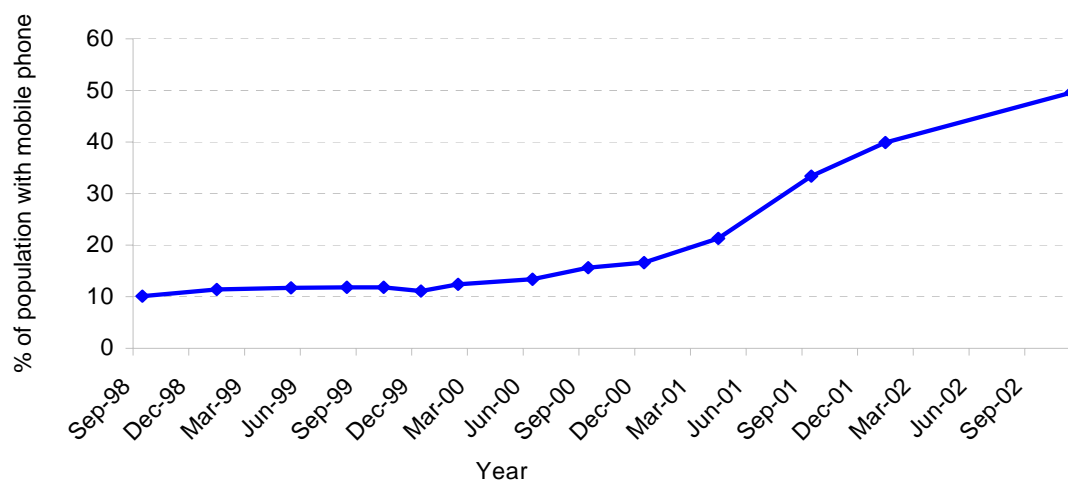


CHART 4.2.

Base:

"Population": all respondents (n= 1000)

Indicator:

"Persons having and using mobile phone."

Source:

Lithuanian Omnibus survey 1998-2002 (Baltic Surveys Ltd.)

The pattern of mobile usage by age group in Lithuania, NAS-10 and EU-15 is similar - it decreases for older age groups. Although for EU-15 the decline is not so steep as for Lithuania and NAS-10. (CHARTS 4.3-4.4.). The situation with SMS usage by age group is more favourable in Lithuania compared to NAS-10. For all age groups and particularly for those who are 65 years old and older the usage of SMS in Lithuania exceed the NAS-10 average. (CHART 4.5-4.6.).

### Mobile usage according to age groups in EU-15 (in % of each age group)

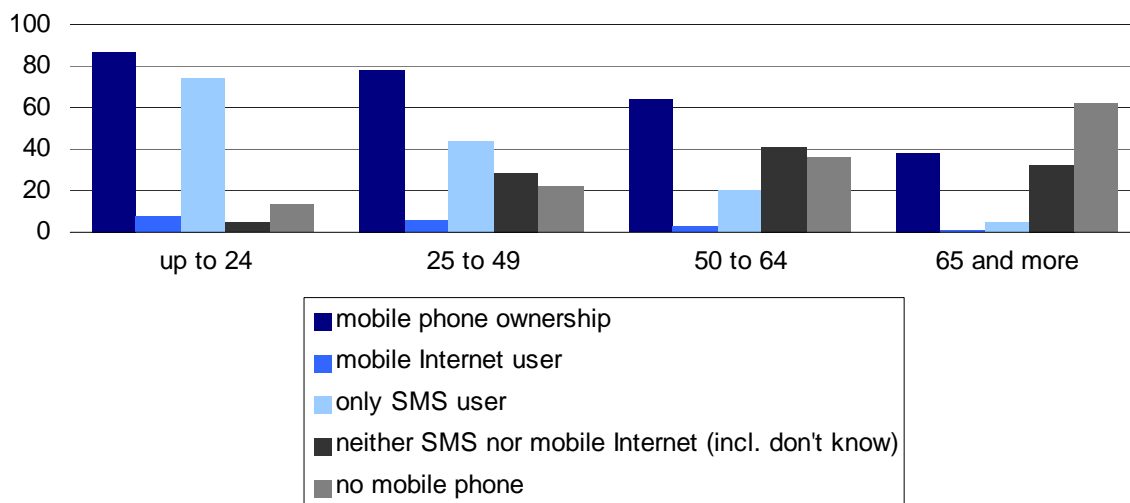


CHART 4.3.

Bases:

all respondents, weighted column percentages

Questions:

A19c, A27,

Source:

SIBIS 2002, GPS

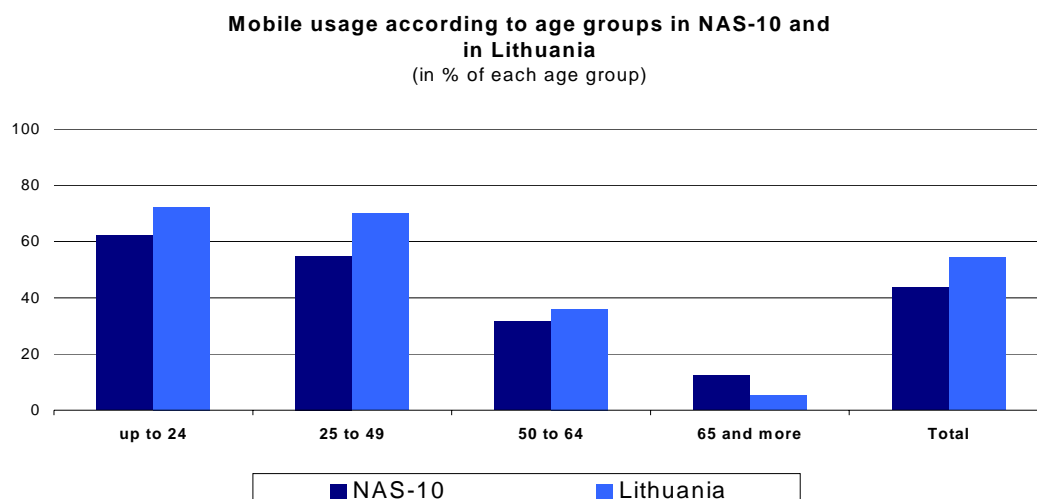


CHART 4.4.

Bases: all respondents, weighted column percentages  
 Question: A19c  
 Source: SIBIS 2003, GPS-NAS

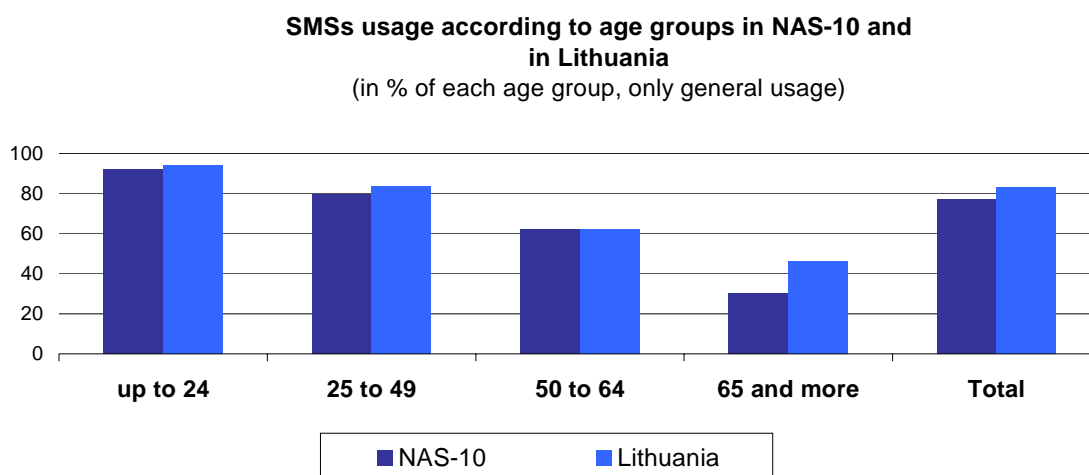


CHART 4.5.

Base: mobile owners, weighted column percentages  
 Question: A27  
 Source: SIBIS 2003, GPS-NAS

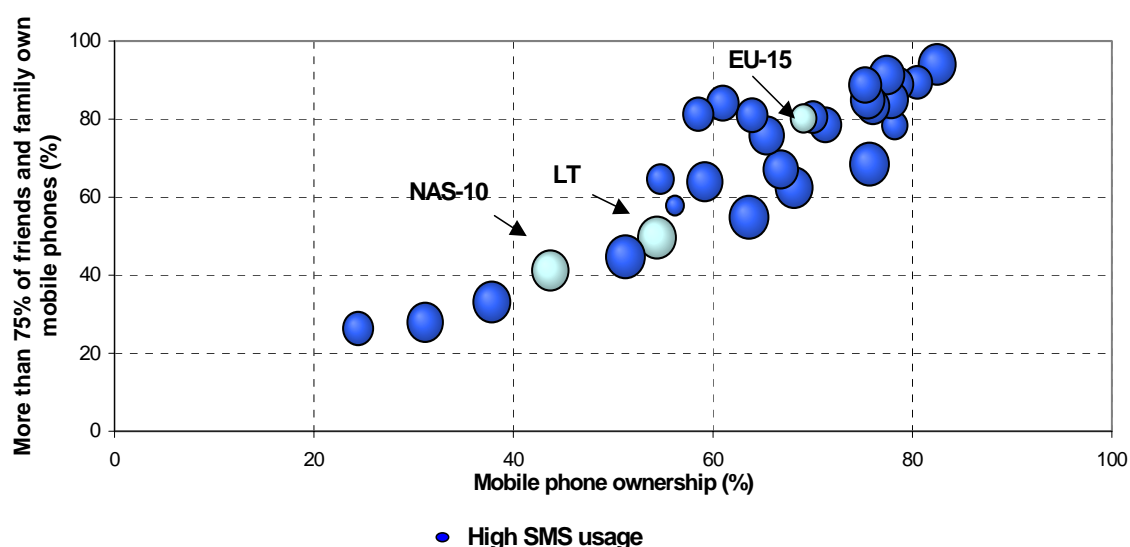


CHART 4.6.

Base: all respondents, weighted column percentages

Questions: A19c, A20, A27

Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

In terms of access to telephony, subscribers to mobile networks are often also subscribers to the fixed network, which would imply lower average access in terms of the total population. On closer examination of statistical data provided by the Department of Statistics it becomes apparent that between 2000 and 2001 the number of fixed lines declined as the number of mobile customers increased. This could mean that customers are substituting mobile for fixed services, or that some customers are disconnecting their fixed telephones in response to tariff growth without acquiring mobile phones. Of a particular concern the fact that the rural customers and people with lower incomes are among 'telephone drop-outs' since it increases digital divide.<sup>5</sup>

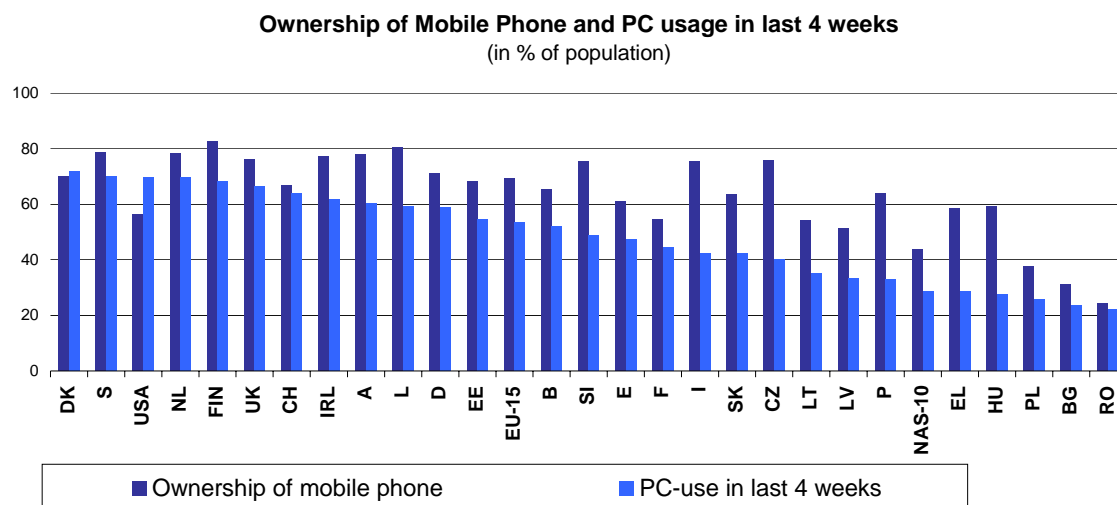
When total teledensity (fixed and mobile), the share of the population using the Internet, and the urban-rural teledensity ratio (the ratio of teledensity for fixed telephones in the largest city to that in the rest of the country) are taken into account Lithuania's position is comparable with the other Baltic States. However Lithuania has lower total teledensity and Internet use, and a bigger urban-rural gap in access to fixed telephones than some of NAS countries (the Czech Republic and Slovenia).

A universal access policy proposed, by the government pursued through market processes with particular attention to the possibility of municipal- or community-based provision of universal access.

According to the Department of Statistics *The PC penetration* in Lithuania in 2001 was 27% based on the number of people that used a computer at least once a month. In 2002, there were 7.1 computers per 100 population which is close to the NAS average. The highest number of computers per 100 population was in Slovenia (27.5) and Estonia (27). According to EUROSTAT and the Department of Statistics (Household Budget Survey conducted in first half of 2002), 12% of households in Lithuania and 36% in the EU have PC. In big cities 19% of households had computers in towns -11% while in rural areas less than 5% of households were 'computerised'. Rural urban gap related to PC ownership and Internet connection is also wide. In 2001, 23% of Vilnius inhabitants had a computer at home and about 11% had

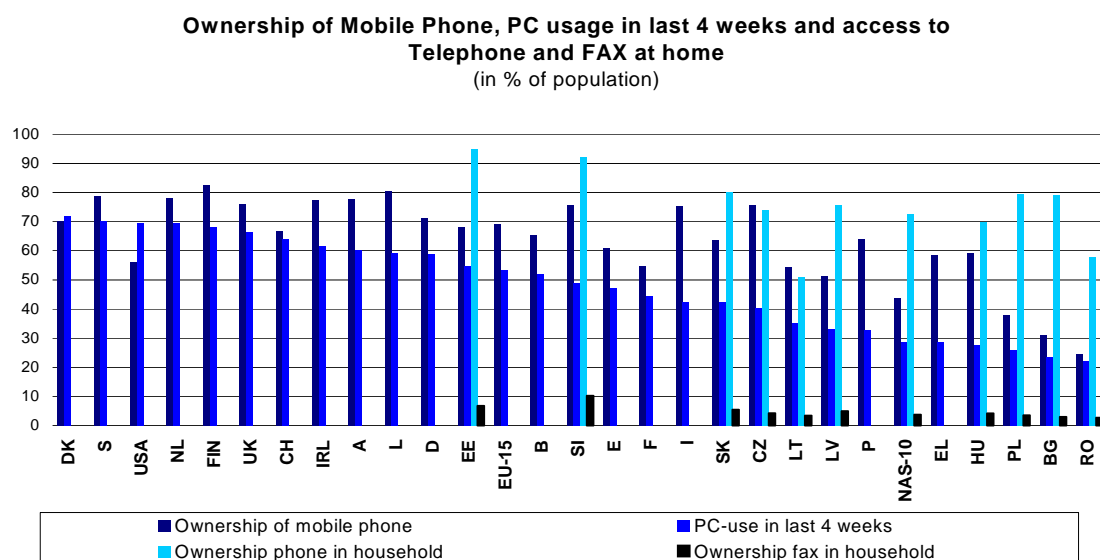
<sup>5</sup> Quarterly Household Budget Survey, Department of Statistics, 2002

access to the Internet at home compared with only 4% of the rural population having computer and 1.3% Internet connection.



**CHART 4.7.**  
 Base: all respondents, weighted column percentages  
 Questions: A19, A1  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

In Lithuania PC are expensive (on average PC costs two gross monthly average salaries) and this is the reason why few households have PCs and consequently fewer people use them at home. (CHARTS 4.1., 4.7.-4.8.)



**CHART 4.8.**  
 Base: all respondents, weighted column percentages  
 Questions: A19a, A19b, A19c, A1  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

A key issue in rural areas is the cost of access. The potential benefits of extending access and use of ICT to poor people and regions are large. These benefits include better information flows, better opportunities for job searches and job creation, and communication that can enhance the democratic process, improve government services, and permit distance learning. A case can be made for properly designed subsidies to improve access to ICT, on grounds similar to those for subsidies for public education.

The situation with the 'computerisation' of society is changing for the better in Lithuania, judging from the developments on the ICT market. Hardware and software sales surged by 30%, in 2001 faster growth than in either Latvia or Estonia. At the end of the year 2001, there were approximately 280,000 new personal computers in Lithuania, an increase by 75,000 units compared to the previous year. The majority of users, however, were private companies and organizations (computerisation of households is much slower).

From the 'first glance' the mobile sector in Lithuania should have made a substantial contribution to access (Internet and telephony) in a comparatively short time. However, GPS data on the Internet penetration and use show that surge in mobile teledensity had a relative small impact on the Internet access. Mobile networks could have provided Internet access, but this is not yet widely available at affordable prices in Lithuania. Thus the fixed network plays a crucial role in access to the Internet.

Internet penetration and usage in Lithuania are one of the lowest among NAS countries and only slightly exceed the NAS average (CHARTS 4.9.-4.10.). Although Internet penetration has been steadily increasing. In mid 2002, 21% of the population used Internet a double increase from 10% at the end of 2001. According to a survey conducted by SIC Gallup Media in June – August 2002, 21% of Lithuania's population used Internet at least once over the last six months, a double increase from 10% at the end of 2001. The same indicator in Latvia and Estonia stood at 16% and 41% respectively. 17% of Lithuanian population was online at least once a month and 13% of the population accessed the Internet at least once a week.

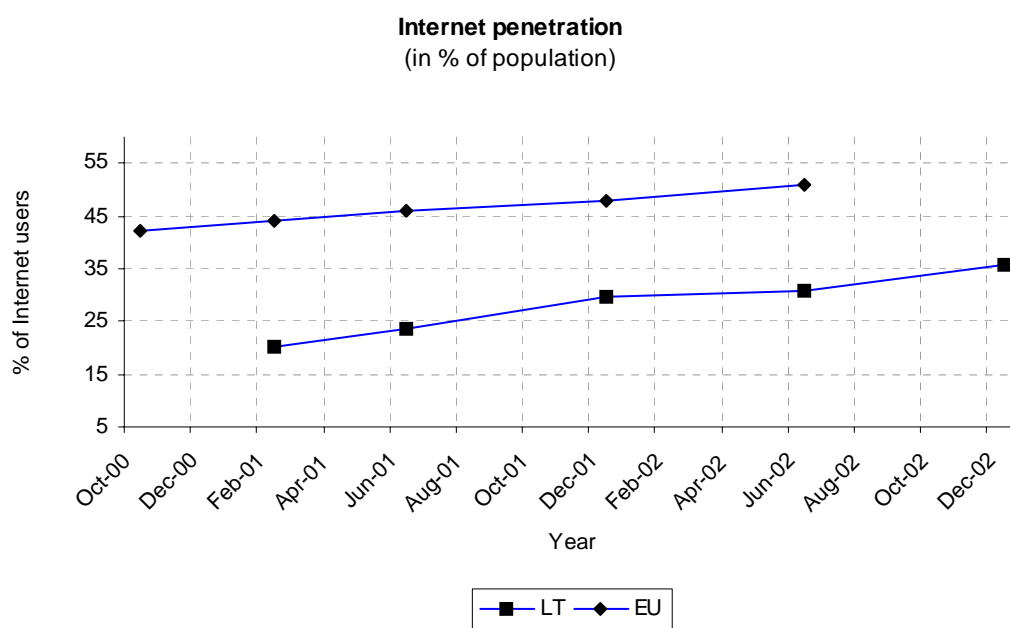


CHART 4.9.

Base:

"Population": all respondents (n= 1000, n=30.000), weighted; LT weighted by LT; EU weighted by EU

Indicator:

"Persons using the Internet "

Question:

LT: Do you personally use the Internet?

EU: Do you personally use the internet (respondent answers for each location separately): at home, at work, at school, college, university, from a public access point (library, City Hall, etc.), in a cybercafe, at a friend's, an acquaintance's, a relative's place, on the move from laptop, on the move handheld/pocket, on the move mobile phone, elsewhere?"

Source:

Lithuanian Omnibus Survey 2000 - 2002 (Baltic Surveys Ltd.), EUROBAROMETER GPS 2000-2002

**Internet usage**  
(in % of population)

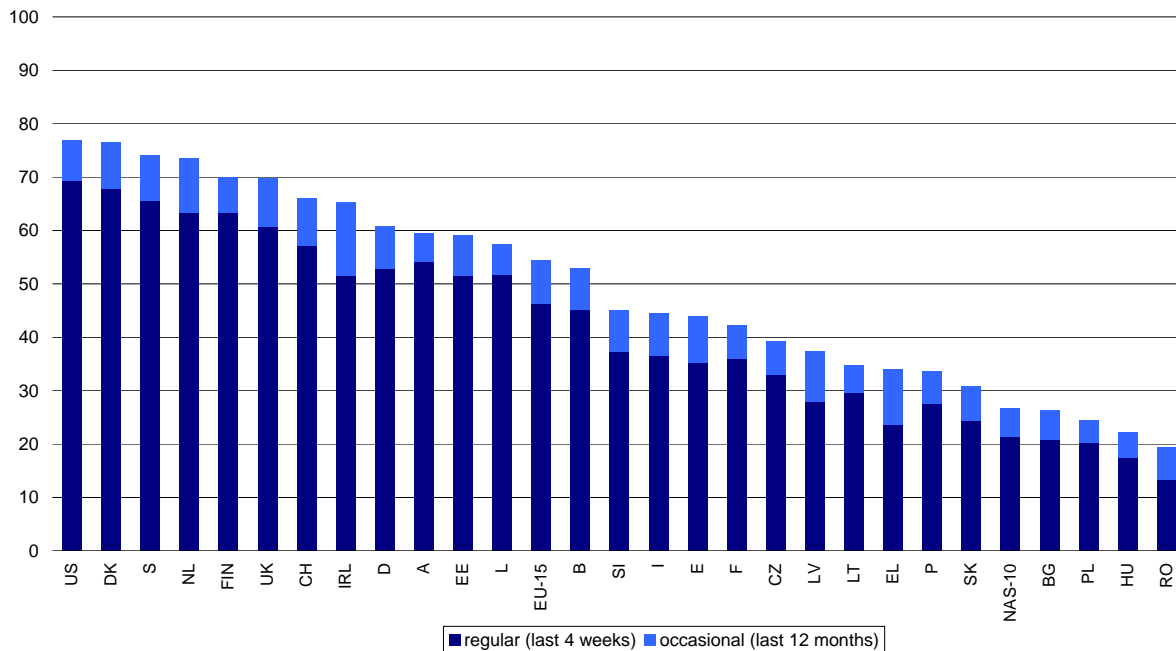


CHART 4.10.  
Base: all respondents, weighted column percentages  
Questions: A7, A8  
Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

The knowledge of the Internet (CHART 4.11) in Lithuania is one of the lowest among NAS countries. The proportion of people among general population who have never heard about the Internet is much higher than the NAS average and only for Bulgaria the figure is worse.

Rural – urban gap in knowledge of the Internet is very wide if about 36% of people in Vilnius knew how to use the Internet, compared with only 8% of rural dwellers.

**Knowledge of the Internet**  
(in % of population)

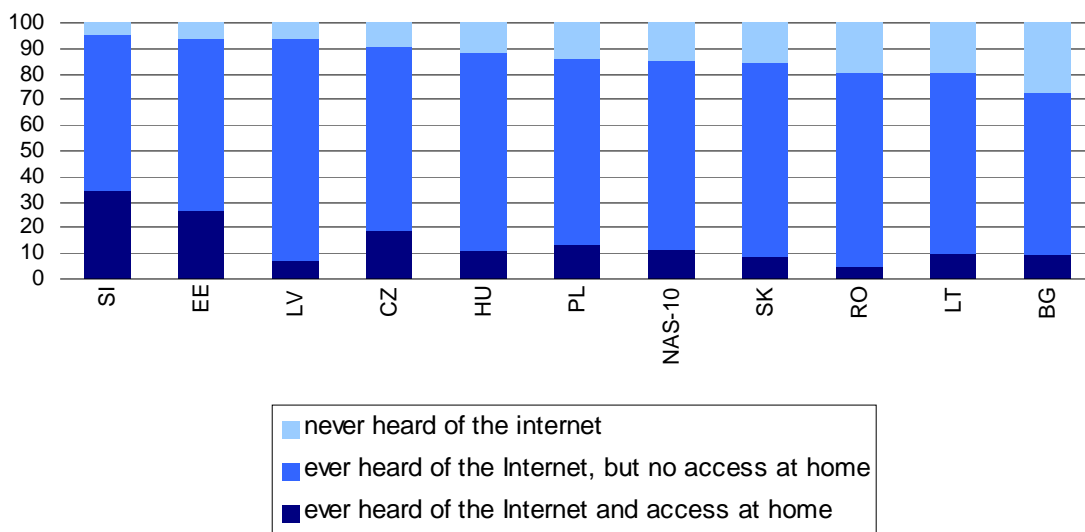


CHART 4.11.  
Base: all respondents, weighted column percentages  
Questions: A5a, A5b  
Source: SIBIS 2003, GPS-NAS

The tariffs charged for Internet access are an important determinant of demand for Internet services. Lithuania has the most expensive Internet access of three Baltic States<sup>6</sup>. The high cost of personal computers and Internet cost are important reasons behind the fact that Internet usage at work dominates Internet usage by location in Lithuania (which is not typical for the EU countries). (CHART 4.12.). (Lithuania has one of the lowest number of households with PCs and Internet). According to the survey Information Technologies in Lithuania conducted by the Department of Statistics in first half of 2002, 48% of households who have computer used Internet at home. Of all households 5.9% used Internet at home (3.2% in 2001). For large cities the proportion was 10.2%, for towns- 4.4% and for rural areas 1.7%. Rural-urban gap is a crucial component of digital divide in Lithuania.

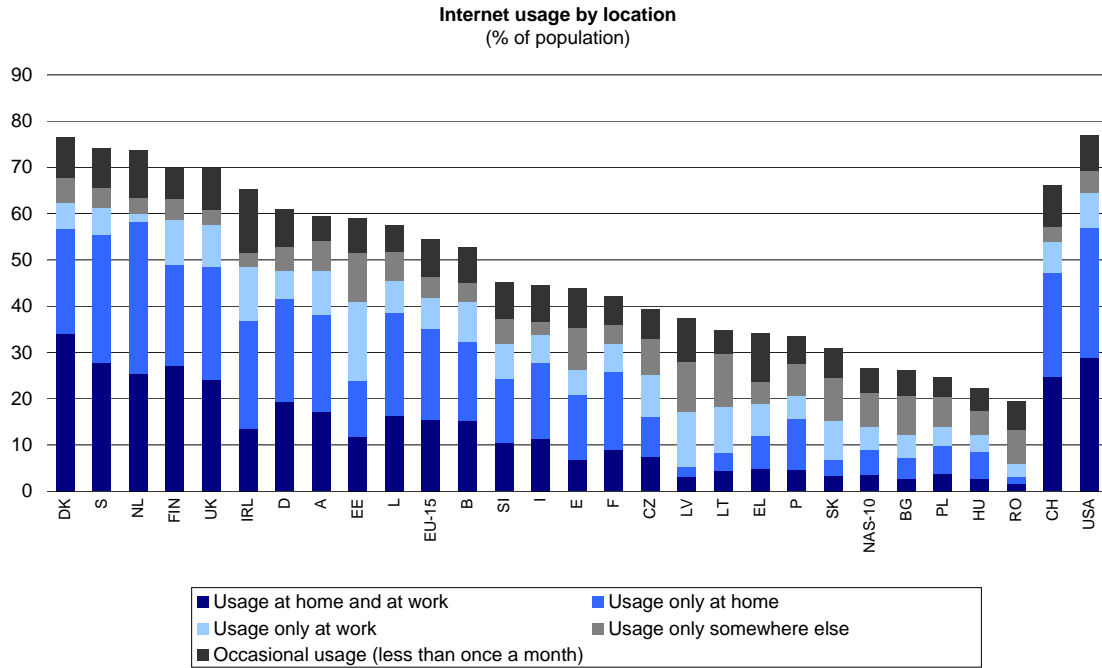
Summing up it could be stated that among most important reasons behind low Internet usage and penetration are unawareness of the Internet or little knowledge about it and high access costs.

Effort has been made to provide information and communications technology to all basic schools: by October 2002, 70% of these schools had dial up access and 10% were online. The need to include information and communications technology skills in curriculum is generally accepted and new curricula have been formulated and adopted. But, there is less agreement on the role of information and communications technology in new pedagogical processes and in the actual teaching and learning process. There are still no recommendations on the use of Internet and PCs in learning process developed by the Ministry of Education and Science. Lithuania is aware of the need for new pedagogy and e-learning and is taking steps to address them in the formal education sector and in community settings. The introduction of information and communications technology in learning process must be supported by, and supportive of, complementary reforms of the education system. EU countries are looking at information and communications technology and e-learning as key ways to promote learning for the knowledge economy.

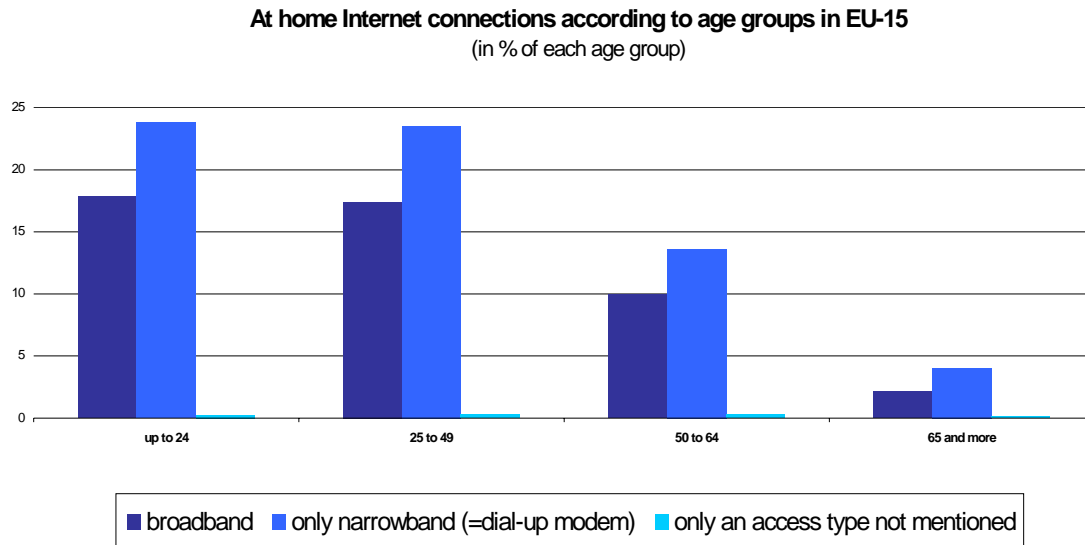
OECD concludes that the effect of information and communications technology on learning has at least as much to do with factors independent of the technology as it has to do with the technology.

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<sup>6</sup> Lithuania. Aiming for a Knowledge Economy, the World Bank, Europe and Central Asia region, 2003



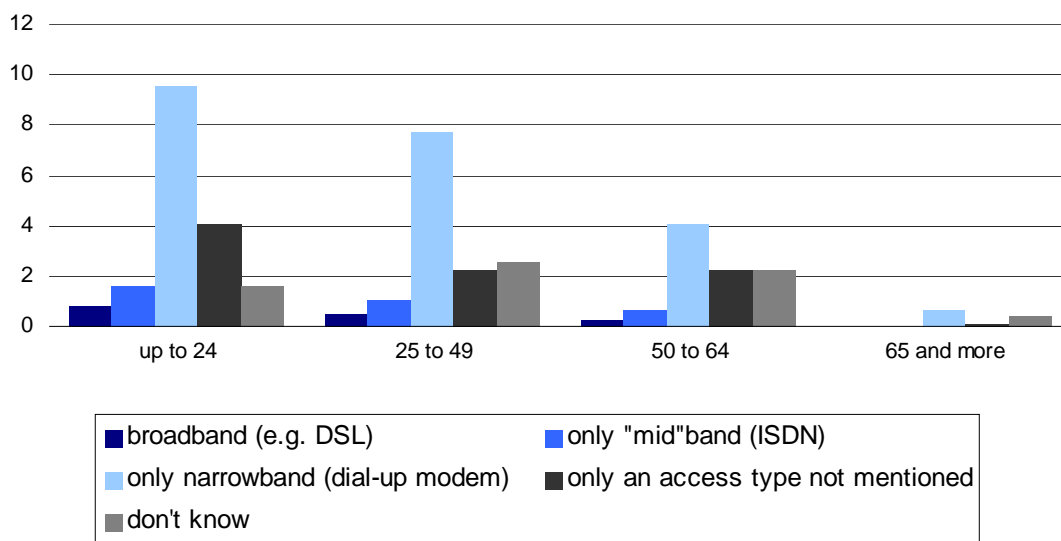
**CHART 4.12.**  
 Base: all respondents, weighted column percentages  
 Question: A9  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS



**CHART 4.13.**  
 Base: all respondents, weighted column percentages  
 Questions: IN1, A11b  
 Source: SIBIS 2002, GPS

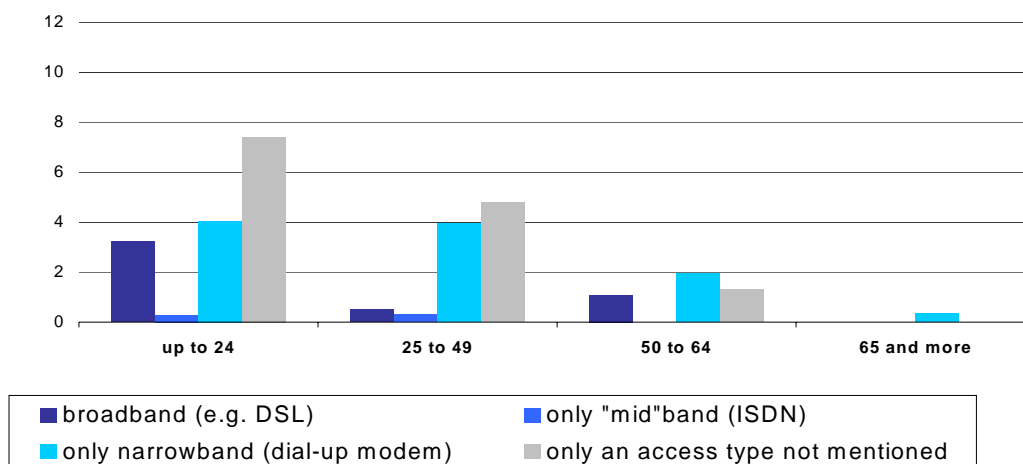
Except for absolute differences (% of the population) the pattern of the Internet connection by age group in Lithuania is similar to those of the EU and NAS averages. (CHARTS 4.13-4.15.).

**At home internet connections according to age groups in NAS-10**  
(in % of population)



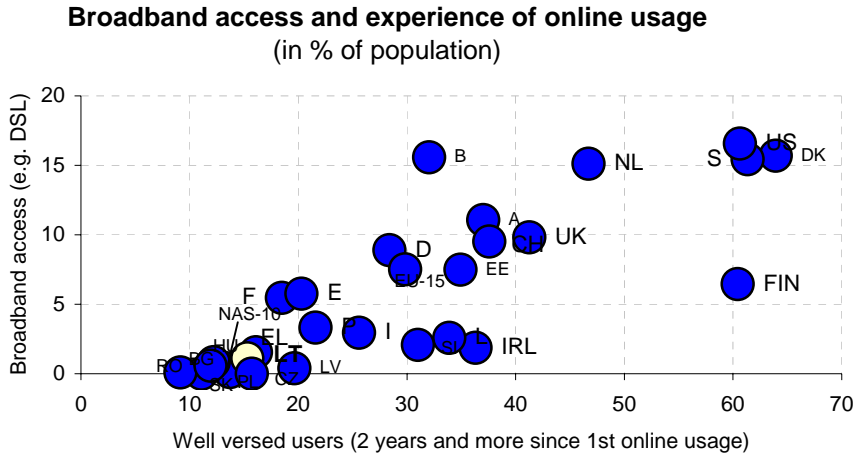
**CHART 4.14.**  
Base: all respondents, weighted column percentages  
Questions: IN1, A11b  
Source: SIBIS 2003, GPS-NAS

**At home Internet connections according to age groups in Lithuania**  
(in % of each age group)



**CHART 4.15.**  
Bases: all respondents, weighted column percentages  
Questions: IN1, A11b  
Source: SIBIS 2003, GPS-NAS

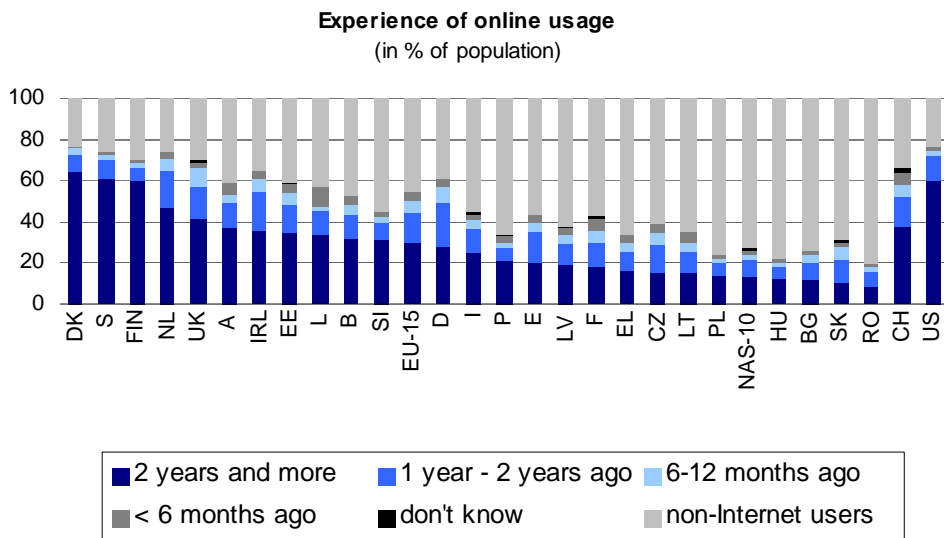
Although broadband access is low in Lithuania compared to the EU average. (CHART 4.11), the introduction of flat access rates and broadband services proved to be a positive factor for Lithuanian Internet market development.



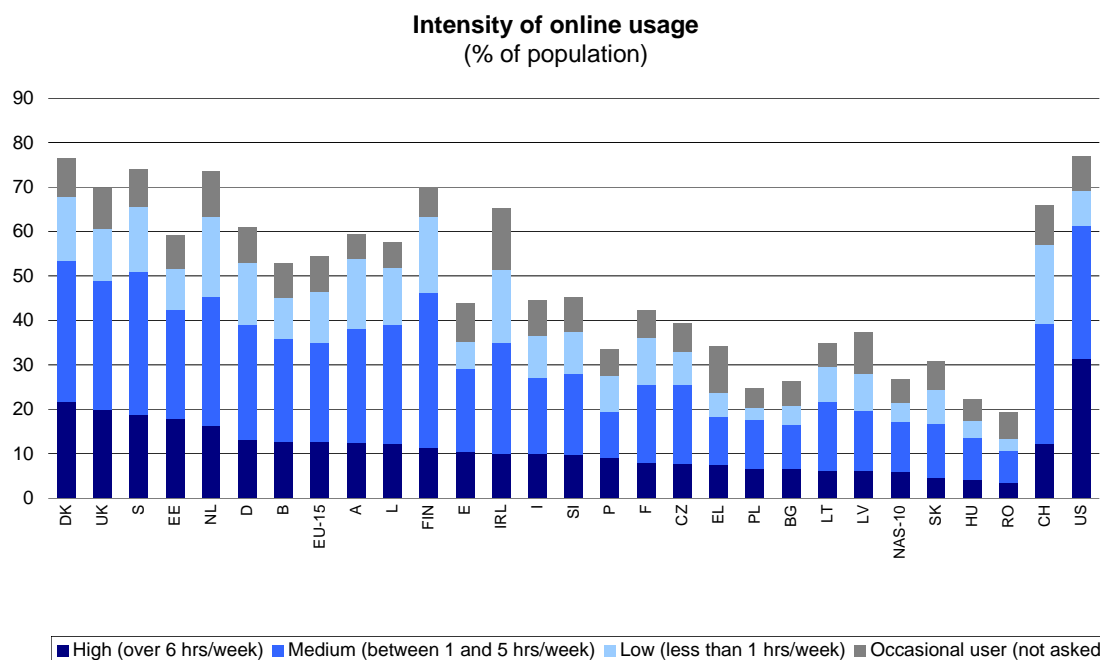
**CHART 4.16.**  
 Base: all respondents, weighted column percentages  
 Questions: A10.4, A11b.2  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

By experience of online usage Lithuania is close to the NAS average. Non-Internet users dominate the 'pattern of experience'. The proportion of those who use Internet from one year to two years and two years and more are almost equal.

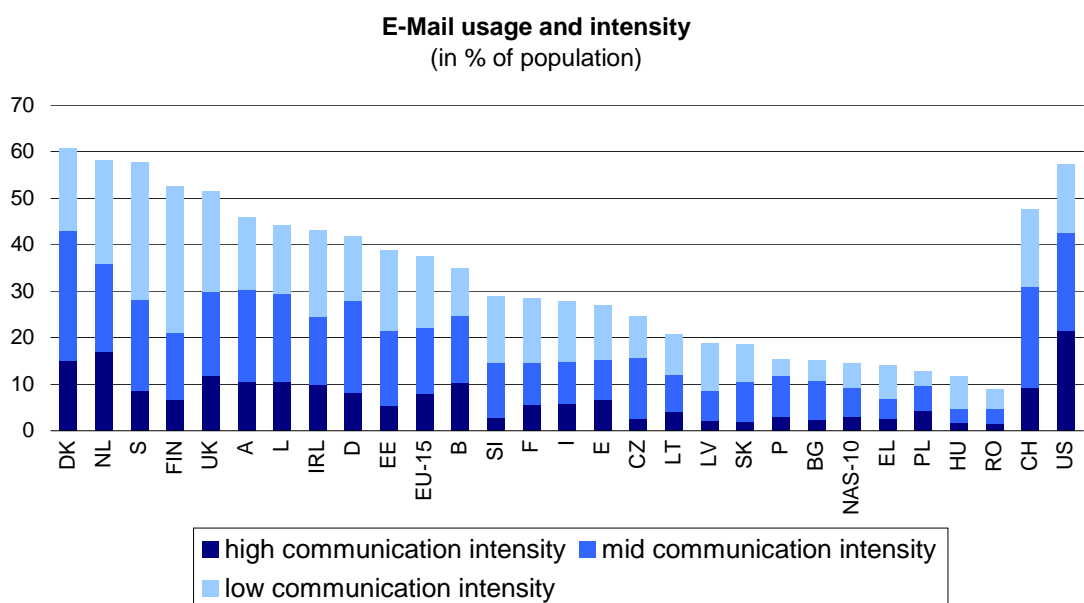
The majority of Lithuanian Internet and e-mail users (CHARTS 4.17-4.19.) belong to the category of medium intensity level users. Given that the majority of people in Lithuania use Internet at work one may assume that Internet is intensively used for work purposes. Although for benchmarking information society is important to know about the purposes for which Internet is being used. GSP-NAS does not contain questions on the purposes for the Internet use (work, leisure, learning...).



**CHART 4.17.**  
 Base: all respondents, weighted column percentages  
 Question: A10  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS



**CHART 4.18.**  
 Base: all respondents, weighted column percentages  
 Question: A9  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS



**CHART 4.19.**  
 Base: all respondents, weighted column percentages  
 Question: A4a  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Lithuania is relatively rich in electronic and information networks, but these resources have not achieved their full potential. A disaggregated analysis of the performance of Lithuania’s telecommunications sector reveals weak country’s integration with the global economy. Table 4.1. presents comparative data on two indicators of the performance of the Internet and its contribution to the economy—international Internet bandwidth (which measures the capacity of a country’s connection to the World Wide Web) and Internet hosts per 10,000 people.

Table 4.1. International Internet Bandwidth and Internet Hosts, 2001<sup>7</sup>

	International bandwidth (Mbps= megabits per second)	Internet (Mbps= megabits per second)	Internet hosts (per 10,00 population)
Lithuania	95		52
Latvia	262		99
Estonia	517		322
Bulgaria	192		130
Czech Republic	11,467		162
Hungary	2,979		187
Poland	2,337		133
Romania	1,418		20
Slovak Republic	6,821		74
Slovenia	320		174
Finland	7,820		1,771
Sweden	60,390		1,695
United Kingdom	238,074		681

The significant differences in international capacity indicate that Lithuania is less integrated with the World Wide Web than many NAS countries. And the lower density of Internet hosts points to a relative scarcity of local Web servers.

The low level of integration indicated by the data on international Internet bandwidth and Internet hosts is also implied by data on international telephone traffic for the three Baltic States. Although Lithuania has the largest population of the three Baltic States, it generates the fewest minutes of international telephone traffic and subscribers make substantially fewer international calls (measured in minutes) than do those in the other two Baltic countries.<sup>8</sup>

All these trends manifest themselves in economic performance of the telecommunications sector. As the largest of the Baltic States by population, Lithuania generates the largest telecommunications revenues. But the revenues per line and as a share of GDP are the lowest of the three states. This raises a concern about the ability of the sector to generate sufficient finance to fund universal service obligations.

## 4.2. Security

According to the GPS Lithuania belongs to the countries least concerned about both on-line privacy and confidentiality and data security. (CHART 4.20.). In Czech Republic and Estonia Internet users are slightly more concerned about on-line security than in Lithuania. However, taking into account significant differences in the intensity of Internet usage and its penetration (CHART 4.9., 4.10., 4.18) between Lithuania and these countries, concerns over on-line security in Lithuania seems to be relatively high. Lithuanians use Internet much less frequent

<sup>7</sup> Lithuania. Aiming for a Knowledge Economy, the World Bank, Europe and Central Asia region, 2003

<sup>8</sup> Lithuania. Aiming for a Knowledge Economy, the World Bank, Europe and Central Asia region, 2003

than inhabitants from Czech Republic and Estonia, however, they are almost equally concerned about on-line security. So, in absolute terms concern about security is low in Lithuania, but given less 'intense' use of the Internet it is relatively high. A possible explanation to the relatively high concerns about security in Lithuania may be linked to many factors. For example to the poor knowledge of the Internet and insufficient experience of on line usage.

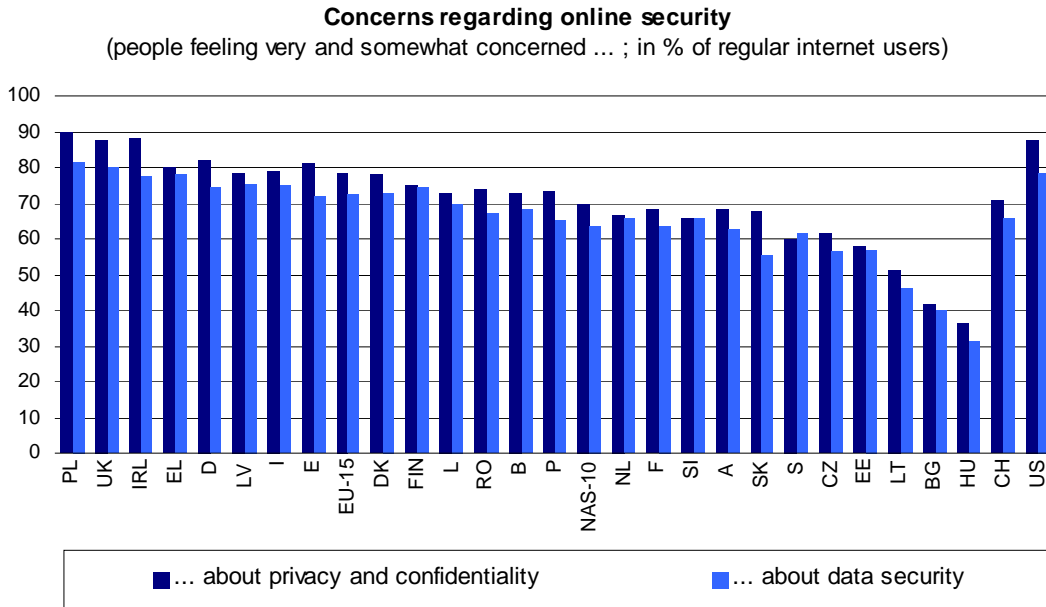


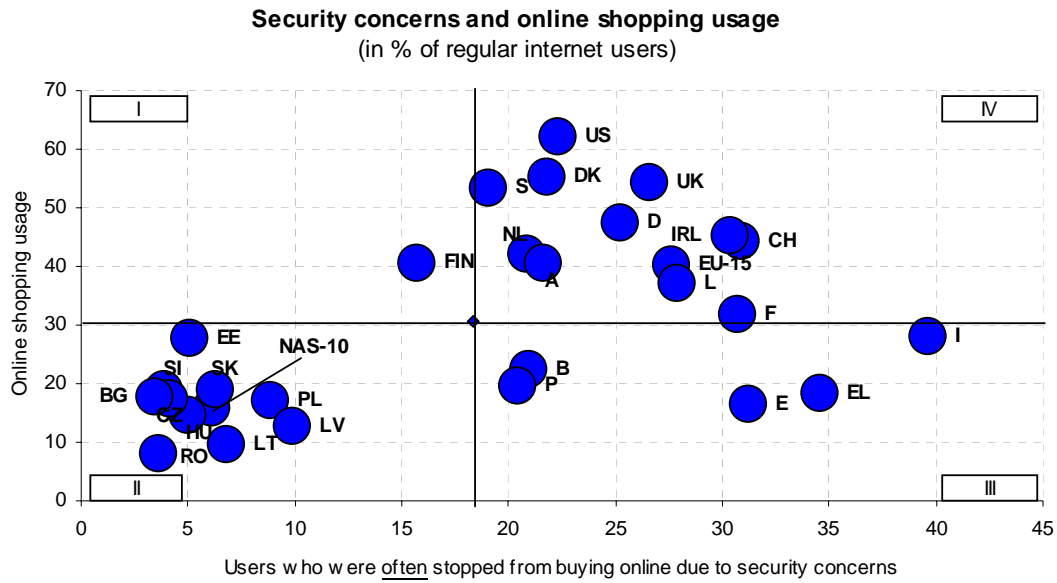
CHART 4.20

Base: regular Internet users, weighted column percentages

Questions: J1a, J1b

Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Security concerns about on-line shopping is low in Lithuania as in all NAS countries (CHART 4.21.) compared with the EU-15. This obviously could be ascribed to the significantly smaller scale of shopping on the Internet in NAS countries compared with the countries of the EU. It was observed that in 2001 out of the total population of Internet users only about 3% were regularly shopping on the Internet in Lithuania. It was also revealed that the majority of e-customers were non-residents.



**CHART 4.21**  
 Base: regular Internet users, weighted column percentages  
 Question: J2  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

## 5. e-Society and Social Inclusion

The majority of Lithuanians think that Internet requires advanced computer skills (CHART 5.1). This perception may be closely linked to insufficient knowledge of the Internet and low PC penetration. However, despite the low knowledge of the Internet and its insufficient use people in Lithuania still do not reject it blindly 'as something not for them' (CHART 5.2.) and agree (somewhat agree) that living without Internet will increase the feeling of social exclusion. (CHART 5.3.). Although social exclusion is a complicated notion, sensitive to individual perception and before asking about it the interviewer should have clarified what is meant by social exclusion in this case. For example, social exclusion may be understood as a manifestation of unemployment, or lack of interpersonal communication, as well as limited access to different information.

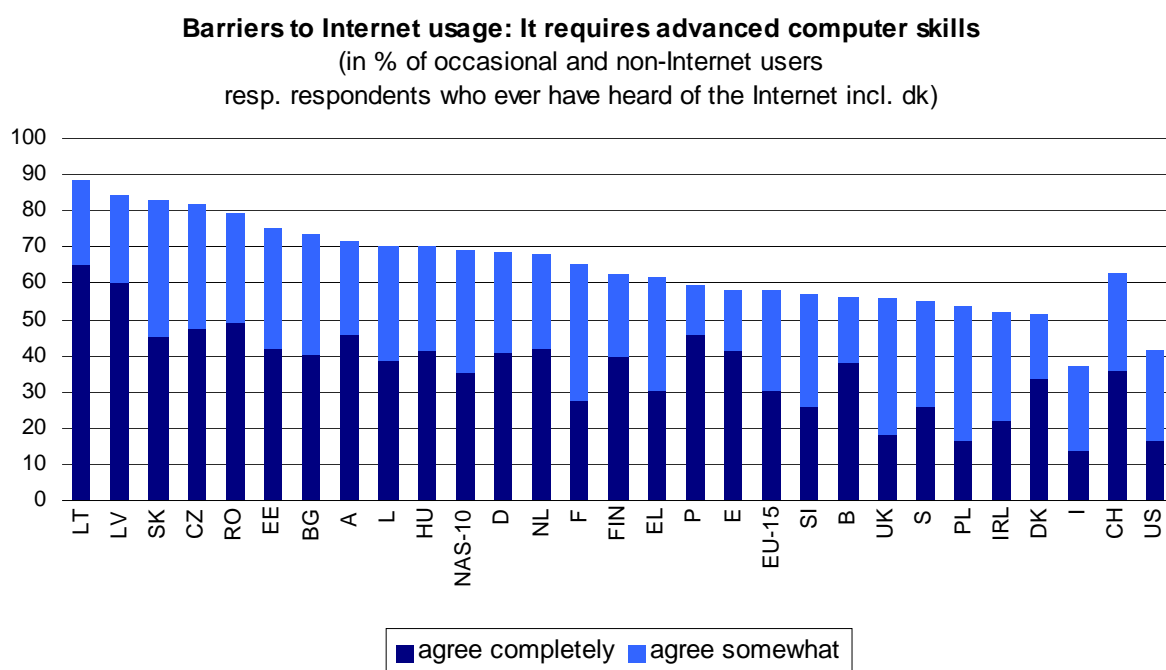


CHART 5.1.

Base: EU-15 countries: occasional and non Internet users, NAS-10 countries: respondents who ever have heard of the Internet, weighted column percentages

Question:

A18a

Sources:

SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

**Barriers to Internet usage: Is not something for me**  
(in % of occasional and non-Internet users  
resp. respondents who ever have heard of the Internet incl. dk)

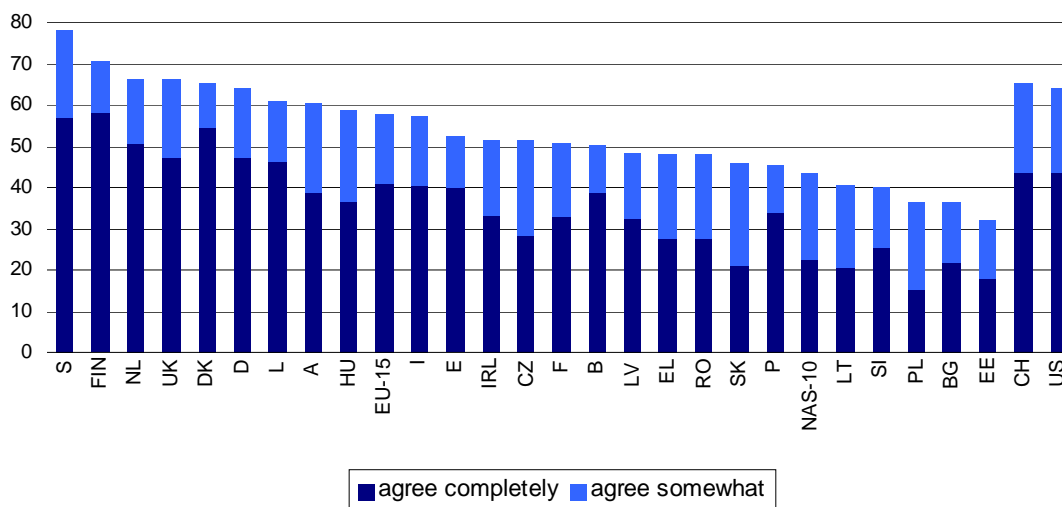


CHART 5.2.

Base: EU-15 countries: occasional and non Internet users, NAS-10 countries: respondents who ever have heard of the Internet, weighted column percentages

Question: A18f

Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

**Life without Internet: Would users feel socially excluded?**  
(in % of regular/all Internet users)

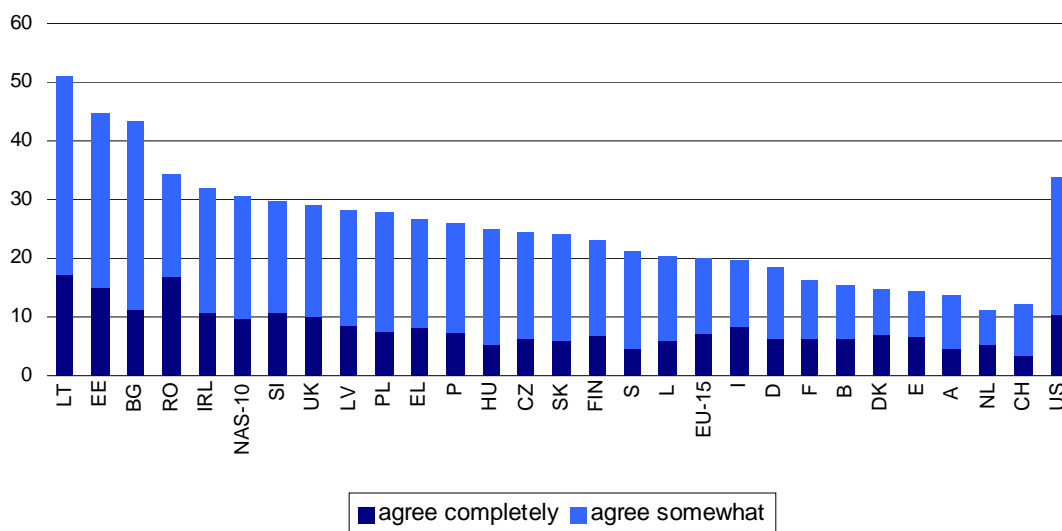


CHART 5.3.

Bases:

EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages

Questions: B5b

Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Lithuania has fewer Internet usage drop-outs than the EU average. (CHART 5.4.). The only GPS indicator where the result is better for Lithuania compared with the EU average. However, given that very few people use Internet at home in Lithuania the high proportion of real drop-outs may be relatively high (for example if to calculate the number of drop outs per 100 Internet users). Additional question about the reasons for dropping-out will be very useful for clarifying the situation.

**Internet usage drop-outs**  
(in % of population)

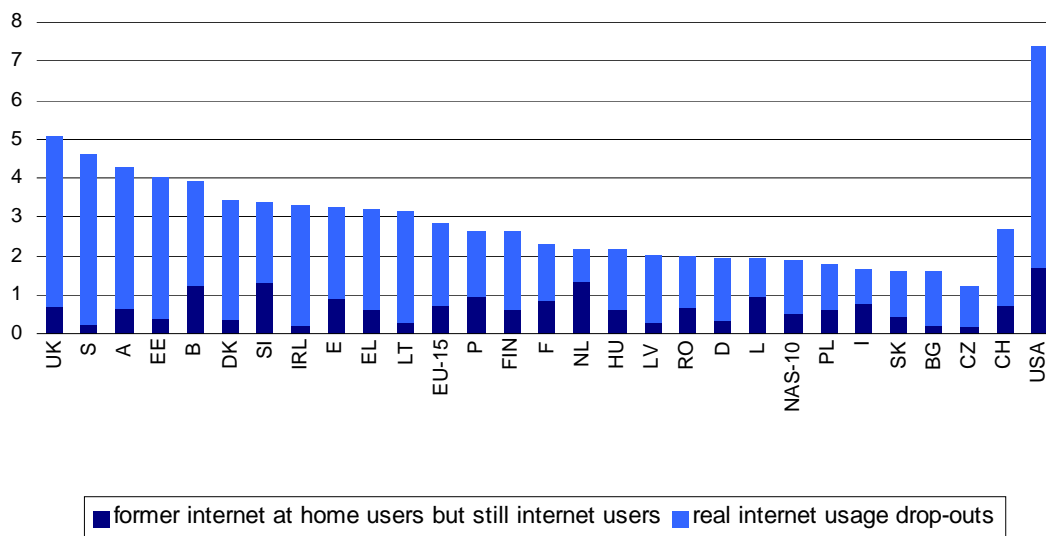


CHART 5.4.

Base: all respondents, weighted column percentages

Questions: A5a, A5b, A6

Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Digital divide (CHART 5.5.) is less informative for Lithuania since it does not reflect - distribution of access within countries (rural-urban gap).

**Digital Divide Indices for EU and NAS**

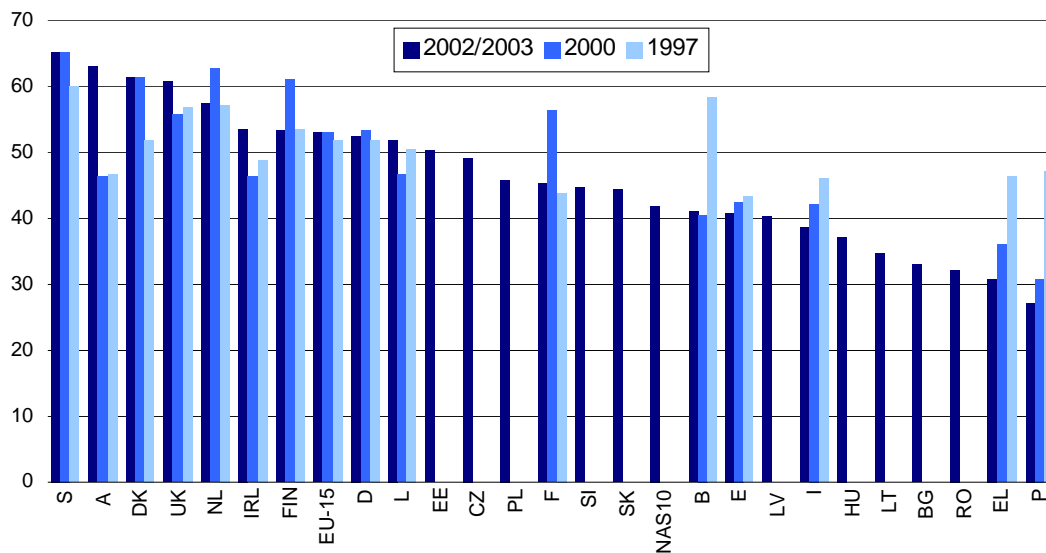


CHART 5.5.

Base: 1997, 2000: N=15,900, weighted by standard Eurobarometer country and EU-15 weights; 2002, 2003: all respondents, weighted percentages

Questions: 2002, 2003: IN1, IN3, Z19, Z21

Sources: 1997: Eurobarometer 47.0, Jan-Feb 1997; 2000: Eurobarometer 54, Oct-Nov 2000; 2002: SIBIS 2002, GPS; 2003: SIBIS 2003, GPS - NAS

One way to assess this is to look at the size of the largest city relative to the rest of the country, the share of fixed lines (and Internet penetration) in the largest city, and the teledensity in the largest city, the rest of the country, and countrywide. A comparison of these measures for the three Baltic states shows that Vilnius does not contribute to the same

concentration of population in Lithuania as Riga does in Latvia or Tallinn in Estonia—it accounts for less than half the population share of the other two capitals.<sup>9</sup> As in Latvia and Estonia, in Lithuania teledensity in the capital is higher than that in the country overall, and teledensity in the rest of the country is lower than that in the largest city and in the country overall. By this indicator, Latvia appears to have a more serious rural access or digital divide problem. As more large cities are added to the capital, teledensity in the rest of the country is likely to fall dramatically, widening the urban-rural gap in access. It is suggested that a thorough study be undertaken to determine rural teledensity in Lithuania.

The development of Lithuania's information society is hindered by limited Internet access in general and by inadequate telecommunications access in rural areas. There are two main reasons for these access gaps. The first is a market gap—the inability of the market to provide access on a commercial basis, where private investment plays a key role. The second is a pure access gap—customers who cannot be supplied by the market for reasons of location or affordability, where public policy plays a key role.<sup>10</sup> The pure access gap could be closed by designating operators to provide universal service in exchange for compensation from other market players or from the state budget for any financial losses. Alternatively, universal access to information and communications services—including the Internet—could be provided at public access points and telecenters in targeted communities. This approach could include “smart subsidies” and allow for local private or municipal participation in the operation of public telecenters.

An important impact on reducing the digital divide related to rural-urban gaps in Internet use is establishing if Internet access points (PIAPs). At the beginning of 2002 by the country's two biggest telecommunication companies, Lietuvos Telekomas and the mobile operator Omnitel, the two biggest banks, Hansa-LTB and Vilniaus Bankas, and two IT companies, Sonex and Alna started to establish PIAPs.

From 60 municipalities, 51 are already involved in the project. Municipalities are not only recipients – they are also responsible for the project's implementation.

The first usage results overcome all expectations. Up to 2,000 visitors are attending each PIAP every month. People register from early in the morning; almost all the time slots are booked several days ahead. Most local governments and communities have expressed great interest in the further development of new PIAPs. Some are already expanding their current capacities independently with additional computers and are even running local training programmes on Internet basics.

The World Economic Forum, in its Global Information Technology Report 2001/02, ranks 75 countries on their readiness for a “networked world.” Lithuania ranks 42nd, among the lowest of the EU candidate countries. This ranking is driven in part by current network use (or the current state of ICT adoption), on which Lithuania ranks 46th. The ranking is also driven in part by enabling factors likely to influence future development of an information society, on which Lithuania ranks 43rd. The enabling factors consist of network access (information infrastructure, hardware, software, support), network policy (ICT policy, business and economic environment), networked society (networked learning, ICT opportunities, social capital), and networked economy (e-commerce, e-government, general infrastructure). Lithuania does best on network access (31st) and worst on network policy (62nd).

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9 Lithuania. Aiming for a Knowledge Economy, the World Bank, Europe and Central Asia region, 2003

10 Lithuania. Aiming for a Knowledge Economy, the World Bank, Europe and Central Asia region, 2003

## 6. e-Education and Life-long-learning

The confidence in obtaining and installing digital tools is low among Lithuanians (CHART 6.1.) It is much lower than the EU average but slightly better than NAS-10. This fact could be linked to the low Internet penetration, insufficient knowledge of the Internet and perception that Internet usage requires advanced skills (see above).

Lithuanians are more confident regarding skills at communicating via Internet (CHART 6.4., 6.5.) than about identifying source of information (CHART 6.2, 6.3.). (However, in identifying the source of information (CHART 6.2.) and searching information through Internet engines (CHART 6.3.) those who are fairly confident dominate. It seems somehow contradictory since the majority of Internet users use Internet at work where normally search for information plays an important role. Additional questions on the purpose of the Internet use would have helped to understand this situation better.

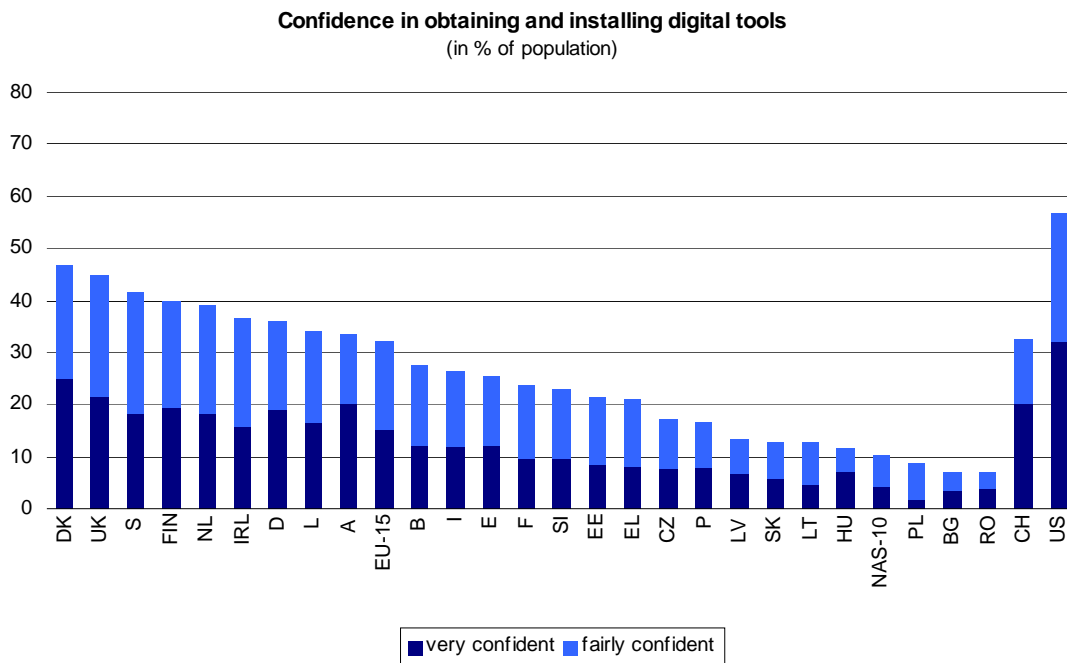


CHART 6.1.  
 Bases: all respondents, weighted column percentages  
 Question: D1g  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

Skills at identifying the source of information on the Internet  
(in % of population)

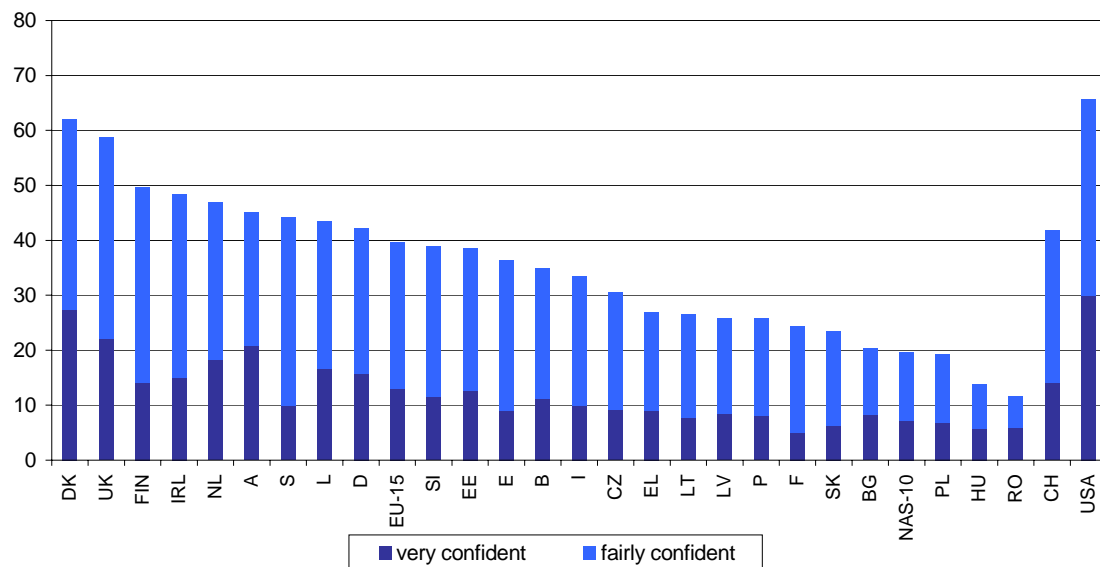


CHART 6.2.  
Base: all respondents, weighted column percentages  
Question: D1b  
Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

Skills at searching information through Internet search engines  
(in % of population)

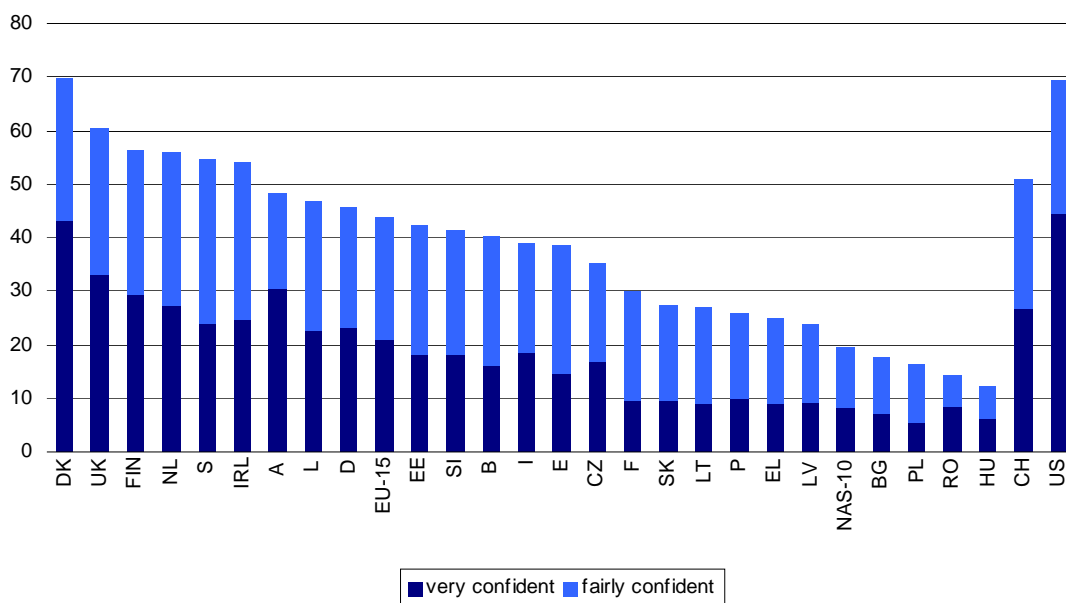
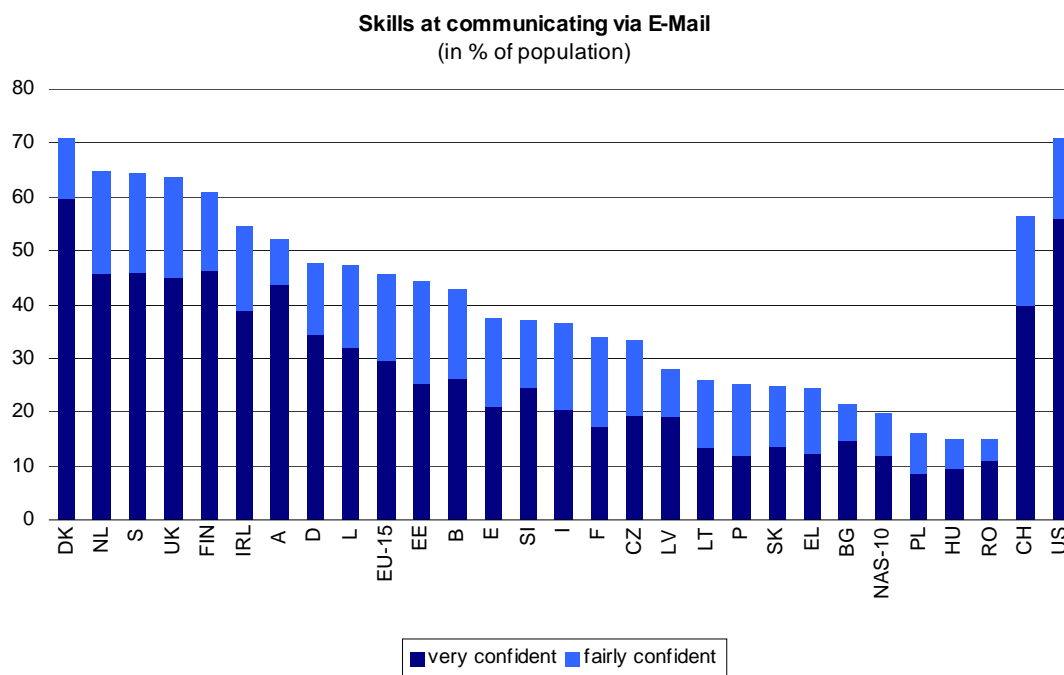
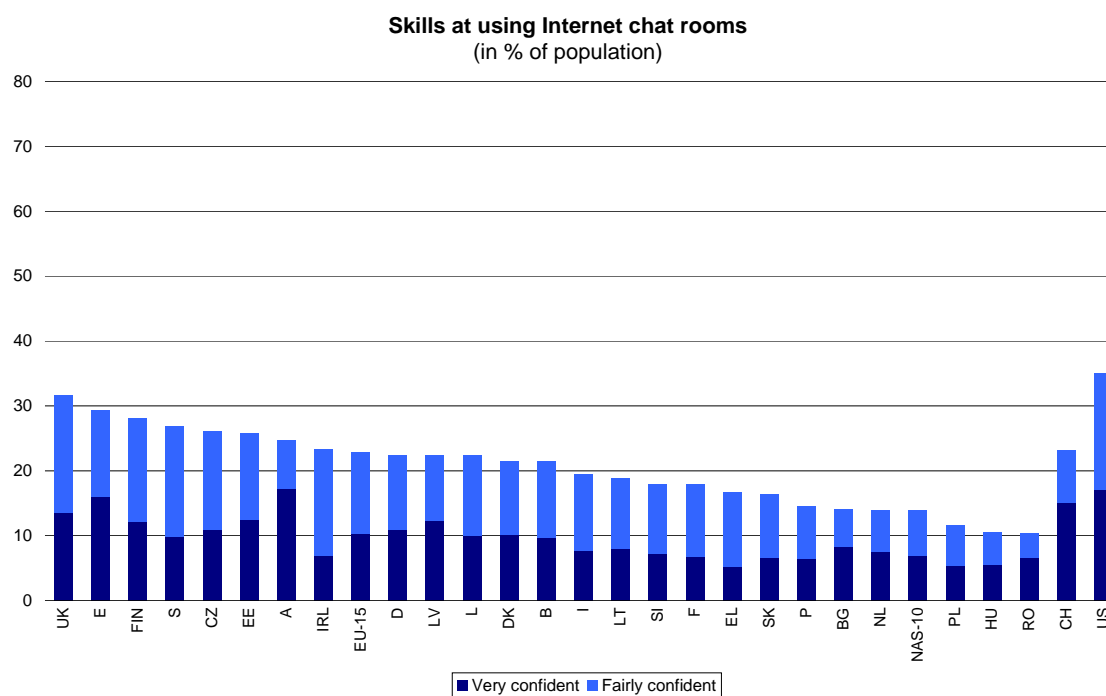


CHART 6.3.  
Bases: all respondents, weighted column percentages  
Question: D1a  
Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS



**CHART 6.4.**  
 Bases: all respondents, weighted column percentages  
 Question: D1c  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS



**CHART 6.5.**  
 Base: all respondents, weighted column percentages  
 Question: D1d  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

## 7. e-Economy and e-Commerce

According to all indicators of e-commerce (CHARTS 7.1.-7.4.) Lithuania is far behind the majority of NAS countries and its position is worse than the NAS average. It was observed that in 2001 out of the total population of Internet users only about 3% were regularly shopping on the Internet in Lithuania. It was also revealed that the majority of e-customers were non-resident Lithuanians. Although the number of e-commerce customers was growing, it remained rather small.

A plausible regulatory framework must be in place to ensure that electronic transactions can take place effectively and securely. The legal environment for e-business should include legislation on e-signatures, e-commerce, e-documents, and data and information collection, sharing, and use, and provide solid ground for protecting consumers' rights. In drafting and implementing relevant legislation, Lithuania is aligning with EU directives and standards to ensure consistency with the *acquis communautaire* in e-commerce. Despite initial steps to harmonize domestic legislation with international standards for electronic transactions, Lithuania failed to pass relevant regulations.

The Seimas passed an e-Signature Law in July 2001, but lack of supportive secondary legislation—relating mainly to the establishment of certification agencies—prevents the law from being fully implemented. A Law on Electronic Commerce is under preparation in the Seimas.

The Lithuanian government passed a law on legal protection of personal data in 1996 and has amended it in compliance with EU Directive 95/46/EC. The revised law on the Legal Protection of Personal Data came into force in January 2001. Moreover, in early 2001 the Seimas ratified the Convention of the Council of Europe for the Protection of Individuals with Regard to Automatic Processing of Personal Data.

**Online Interactive buyer by country: People who have ordered a product or a service, or have conducted online banking or bought financial products**  
(in % of population)

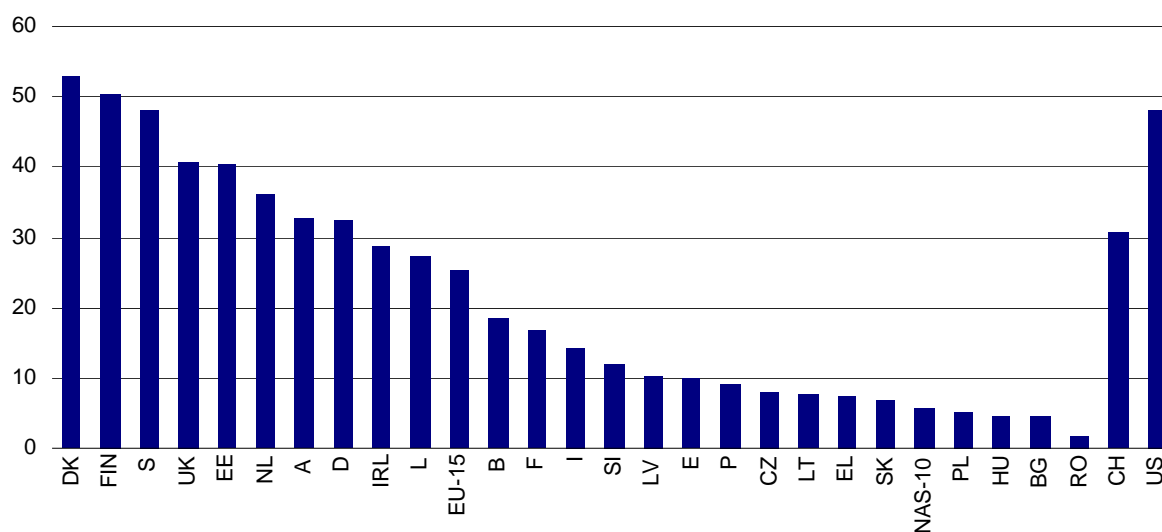


CHART 7.1.

Base: all respondents, weighted column percentages

Questions: B1b, B1c

Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

**E-Commerce users**  
(in % of population)

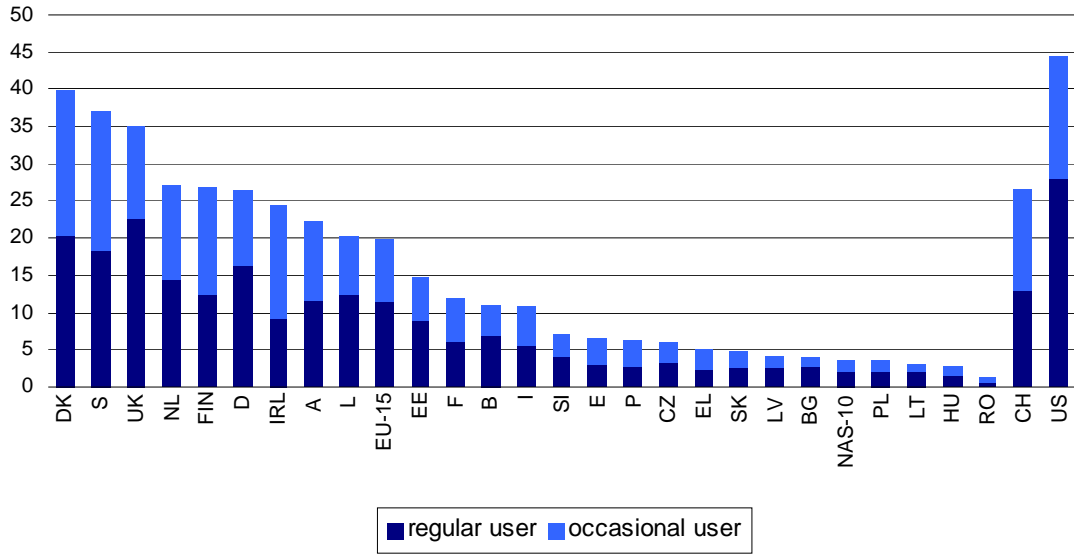


CHART 7.2.

Bases: all respondents, weighted column percentages  
 Questions: B1, A7, A8  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

**E-Commerce usage by age**  
(in % of population)

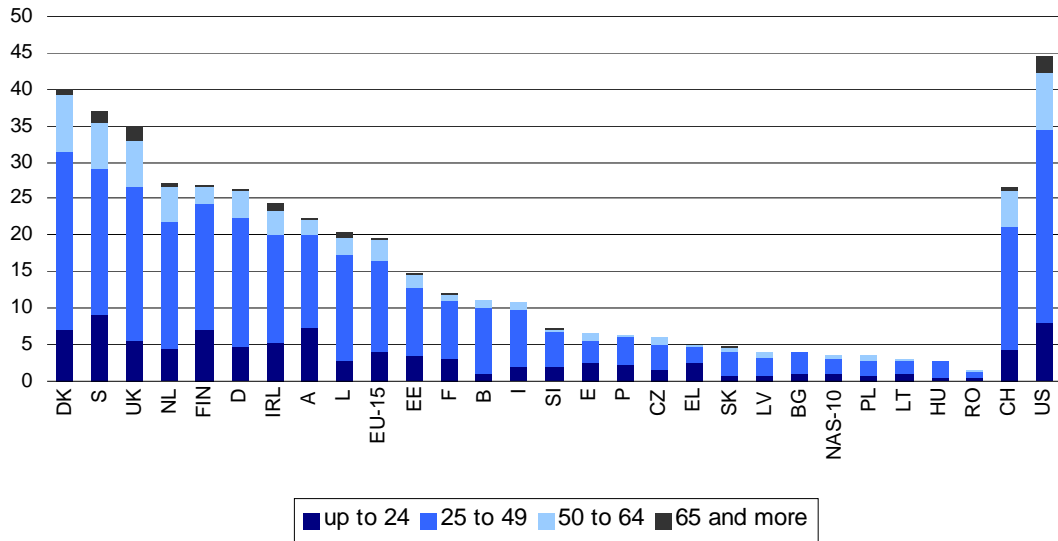
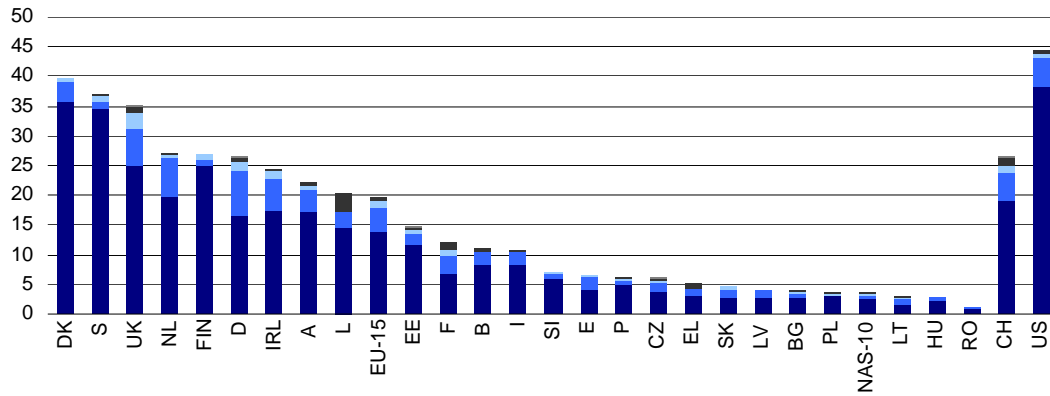


CHART 7.3.

Base: all respondents, weighted column percentages  
 Questions: B1, IN1  
 Source: SIBIS 2003, GPS-NAS

**Online E-Commerce usage and experience**  
(in % of population)



■ 2 years + ■ 1 year - 2 years ■ 6-12 months ■ < 6 months ■ don't know

CHART 7.4.

Base:

all respondents, weighted column percentages

Questions:

B1, A10

Sources:

SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

## 8. e-Work

A knowledge economy requires as its foundation an educated, skilled population able to create, use, and share knowledge. Lifelong learning—from ages 4–80, in formal, non-formal (enterprise training), and informal (life experience) learning environments—is essential to this foundation. Low participation in life-long learning (CHART 8.1.) and any learning (CHART 8.2.) reflect the situation when demand in continuous vocational training for adults in Lithuania exceed supply. [Terms ‘life-long learning’ and ‘any learning’ were included in questionnaire. It is difficult to tell the difference between them, each learning may become dead-end or life-long depending on many circumstances] Despite the fact that much of Lithuania’s high unemployment is due to workers’ low or inadequate skills, between 5 and 10% of the labour force in Lithuania is in continuous adult vocational education while in the EU-40%. %.

Although Lithuania’s education system faces growing demand, it has limited capacity to respond to changing circumstances and enable lifelong learning. Moreover, resources to improve education access and quality are scarce. Governments at various levels and economic actors must transform formal education systems and link them with non-formal education, improving overall performance. Responsibility for managing learning in the knowledge economy needs to be increasingly demand driven and based on individual needs.

**Participation in lifelong learning**  
(in % of labour force)

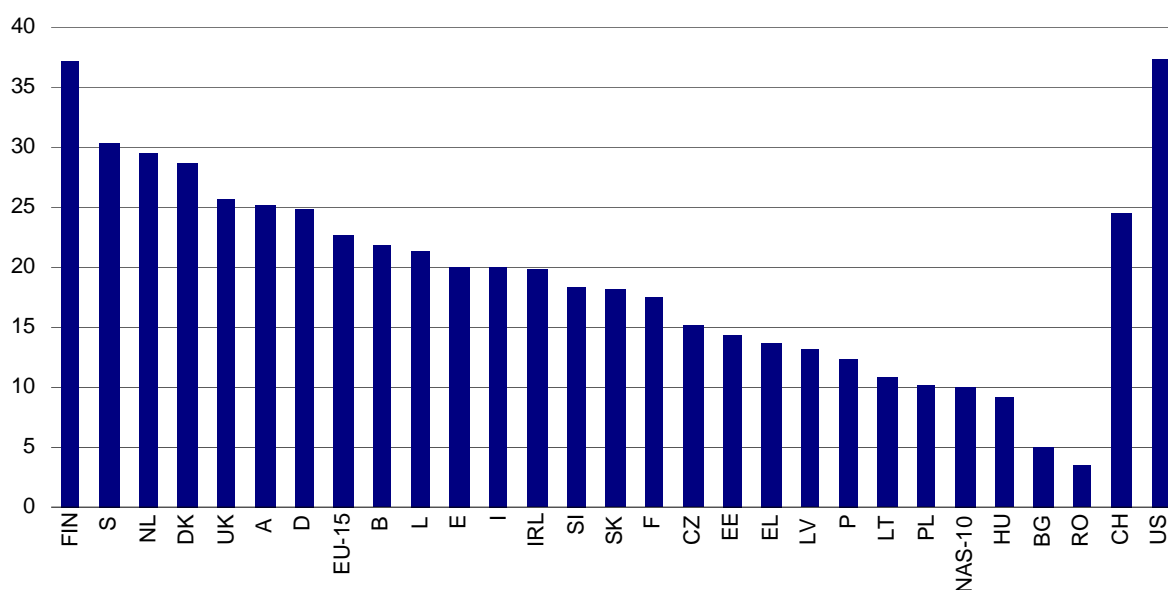


CHART 8.1.

Base: labour force, weighted column percentages  
 Question: C2  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS



CHART 8.2.

Base: labour force, weighted column percentages  
 Question: C18a  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Situation with self-directed learning looks somewhat better (CHART 8.3.), however it seems contradictory because of low participation in any training and there is no evidence on the prevalence of self-directed learning from other sources to support this. In reverse, labour force survey reveals that self-directed learning is not popular in Lithuania. It may happen that respondents did not properly understand what does it mean 'self-directed learning'.

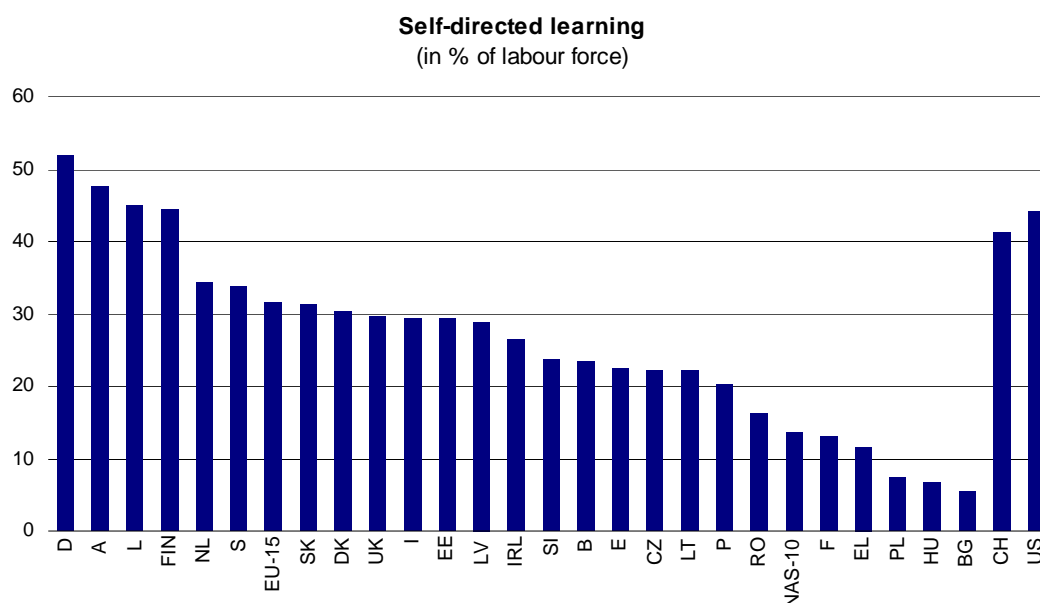


CHART 8.3

Base: labour force, weighted column percentages  
 Question: C14a  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Participation in e-learning (CHART8.4.) is very high in Lithuania under the background of low Internet usage. The main explanation to this fact may be successful implementation of

programme on distance learning (LieDM),<sup>11</sup> and “Information Technologies For Science And Education 2001-2006” (ITMis).

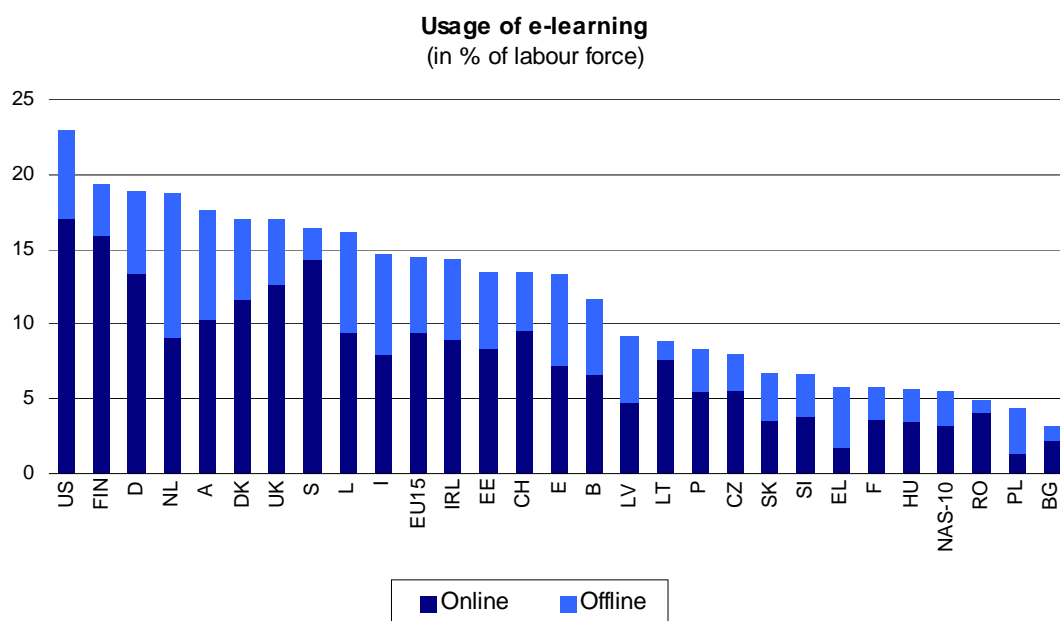


CHART 8.4.

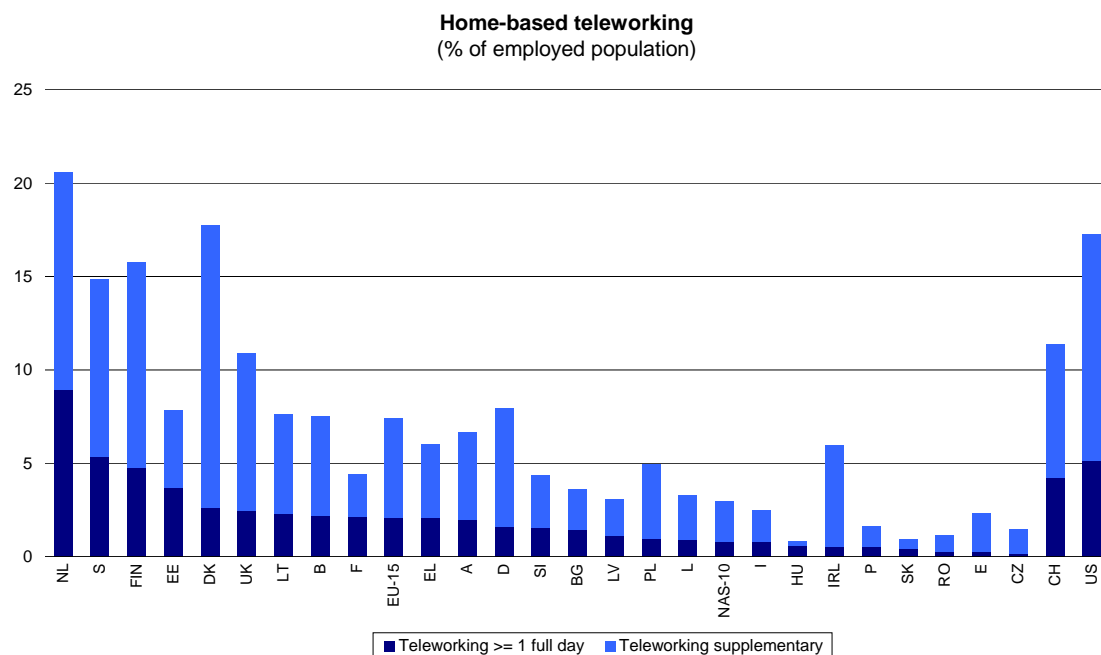
Base: labour force, weighted column percentages

Question: C19a

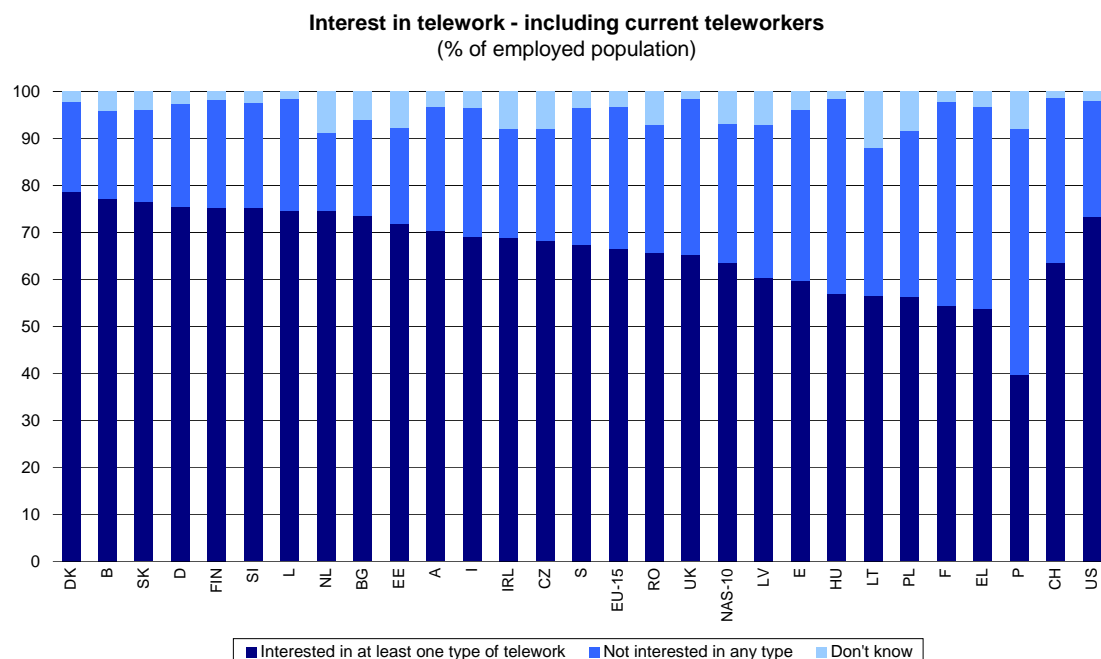
Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

According to GPS (CHART 8.5.) home-based teleworking is widely spread in Lithuania. The proportion of home based teleworkers among working population in Lithuania is much higher than NAS-10 and exceeds EU average. This result is very contradictory, given the low Internet penetration, dominant usage of Internet at work and small proportion of ‘computerised’ households. The definition of teleworking included in GPS questionnaire may be to blame for this. It is more feasible to surmise than teleworking is supplementary to traditional forms of employment (which is absolutely natural given the level of access to telecommunications and skills and knowledge of the Internet). The low interest in teleworking (bellow the NAS average (CHART 8.6.) could be ascribed to little knowledge of the nature of teleworking and its advantages. Feasibility of teleworking (CHART 8.7.), proportion of self-employed teleworkers (CHART 8.8) are sensitive to the definition of teleworking and particularly home based teleworking as well as to the composition of respondents and data are not very informative and reliable unless appropriately weighted.

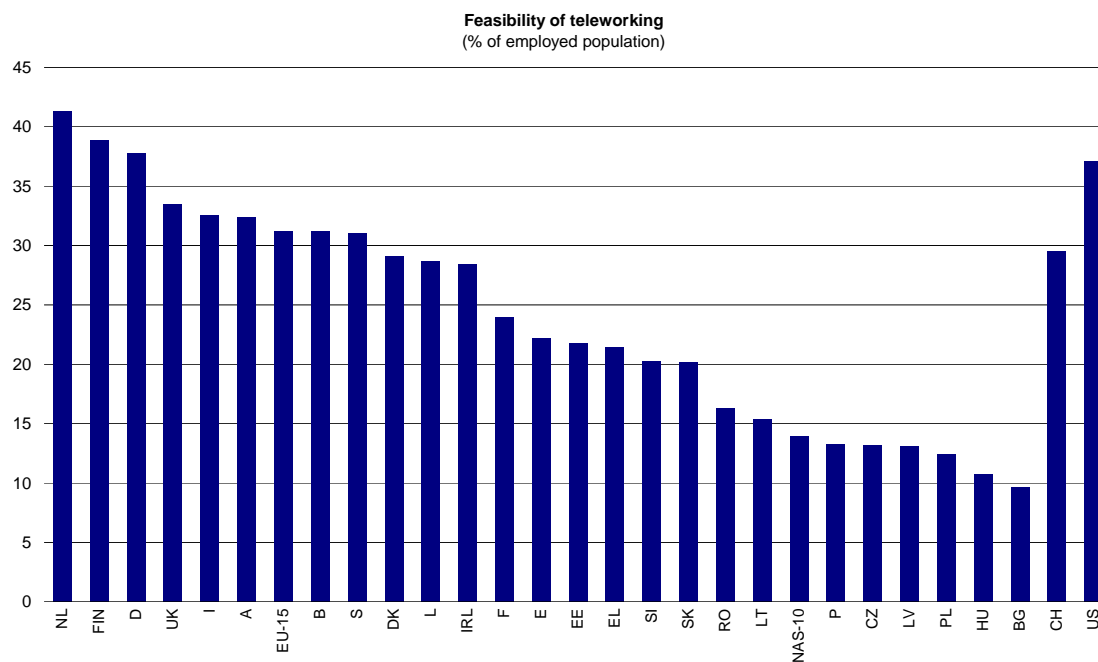
<sup>11</sup> ([www.LieDM.It](http://www.LieDM.It))



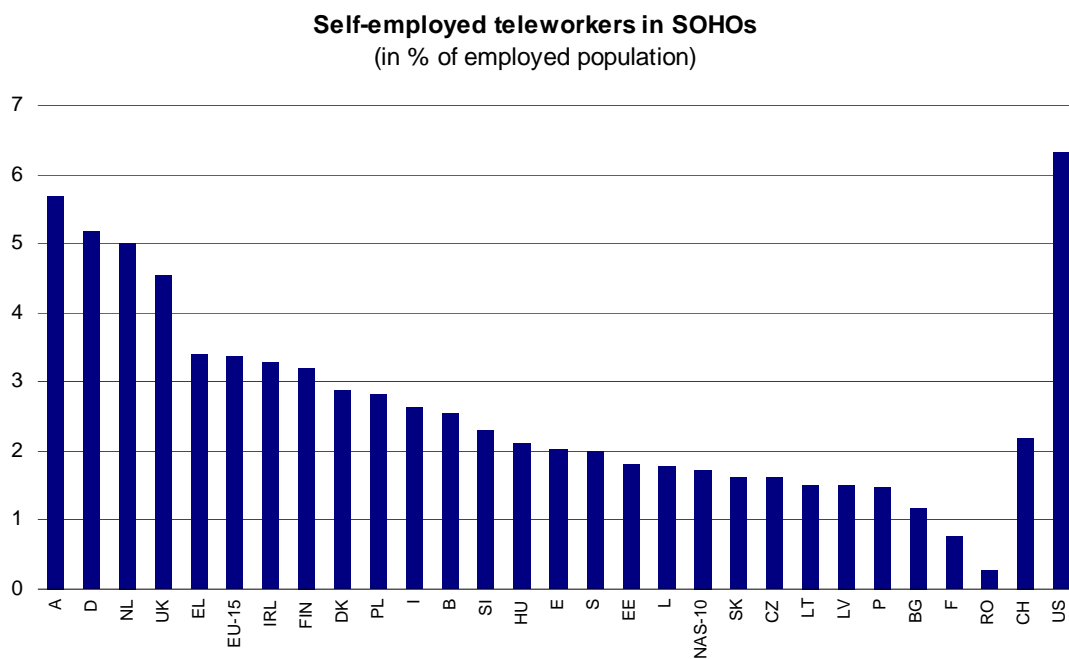
**CHART 8.5.**  
 Bases: All persons employed, weighted column percentages  
 Question: E4  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS



**CHART 8.6.**  
 Base: All persons employed, weighted column percentages  
 Question: E8  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS



**CHART 8.7.**  
 Base: All persons employed, weighted column percentages  
 Question: E9a  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS



**CHART 8.8.**  
 Base: All persons employed, weighted column percentages  
 Questions: IN6, E2  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

## 9. e-Government

Data on tax declaration and filling the income tax return (CHART 9.1.) for Lithuania is not comparable to the EU countries (and hardly comparable to NAS) because only a certain group of the population is obliged to declare its income and submit tax declaration. However it looks encouraging that the majority of respondents would prefer to use Internet for this purpose. However an opinion of those who never saw tax declaration might be irrelevant in this context. In Lithuania not all citizens are obliged to declare their income. Among those who are eligible to tax declaration are: politicians, MPs high ranking officials and their close relatives and spouses, directors of enterprises or their owners and others. So, it will be difficult to conduct sociological survey among those who are obliged to submit tax declaration. Besides such a sample is too biased to allow for correct international comparisons.

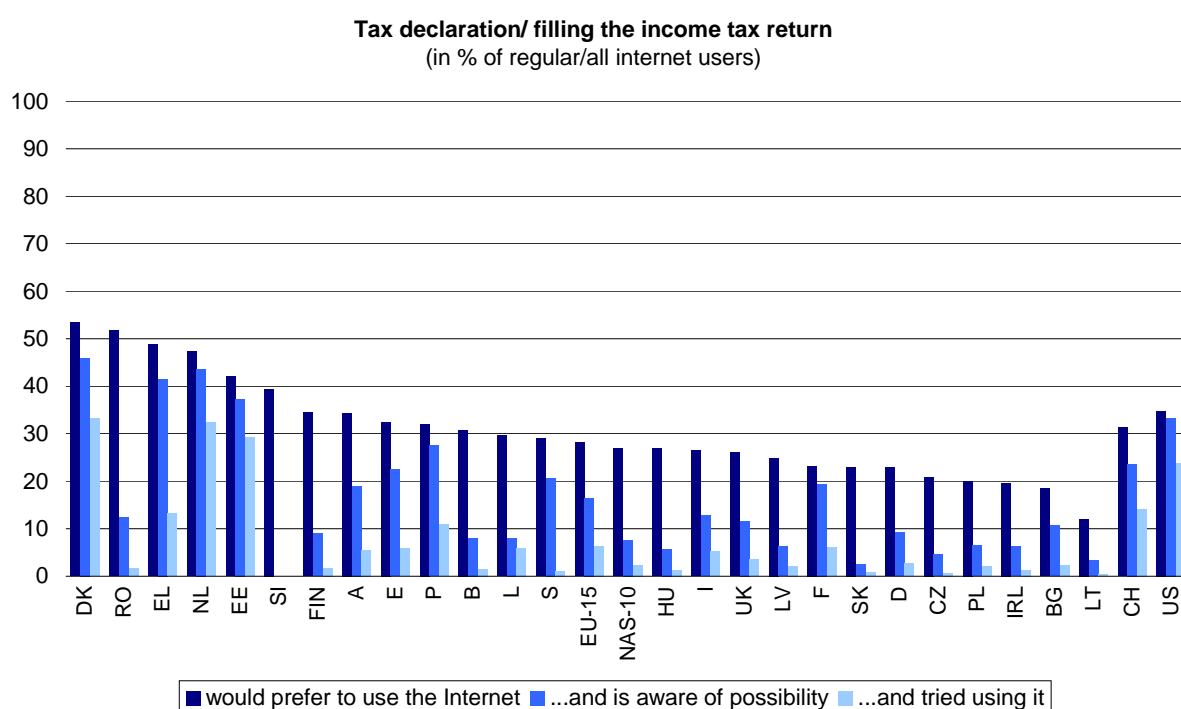


CHART 9.1.

Base:

EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages

Question:

K1a

Sources:

SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

Relatively good performance of Lithuania in job searching (CHART 9.2.) could be ascribed to well developed on-line job search network maintained by Lithuanian Labour Exchange and Labour market Training Authority.

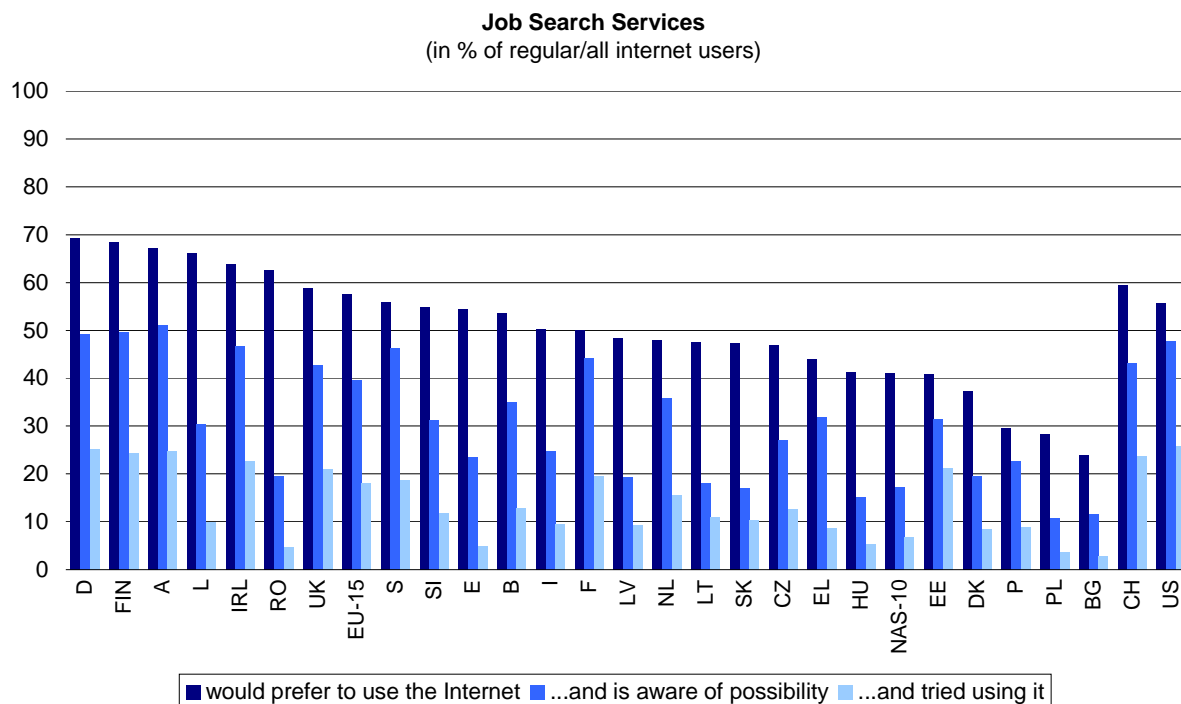


CHART 9.2.

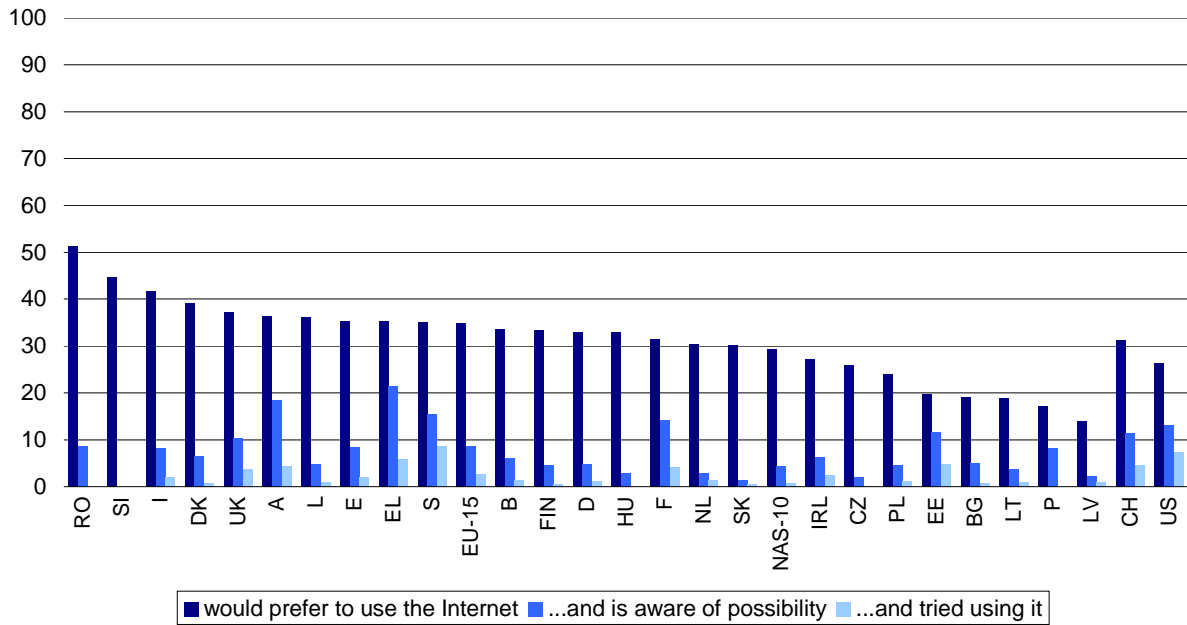
Base: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages

Question: K1b

Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

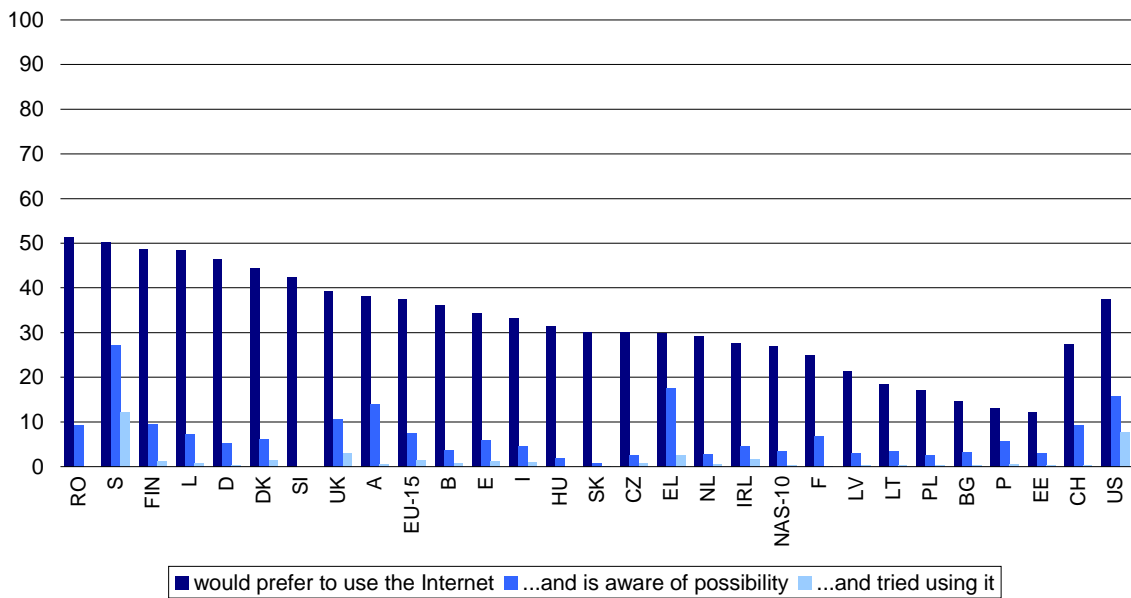
Request for passport, drivers licence or other documents (CHART 9.3.-9.5., 9.7.) is not widely spread and its insufficient use depend not only on the ability (skills) of Internet users or access, but largely on other factors. For example, according to the survey Information technologies in Lithuania in the first half of 2002 only 50.1% of central government and municipal institutions had own Websites with information on on-line service provision.

**Request for passport, drivers license, birth certificates or other documents**  
(in % of regular/all internet users)

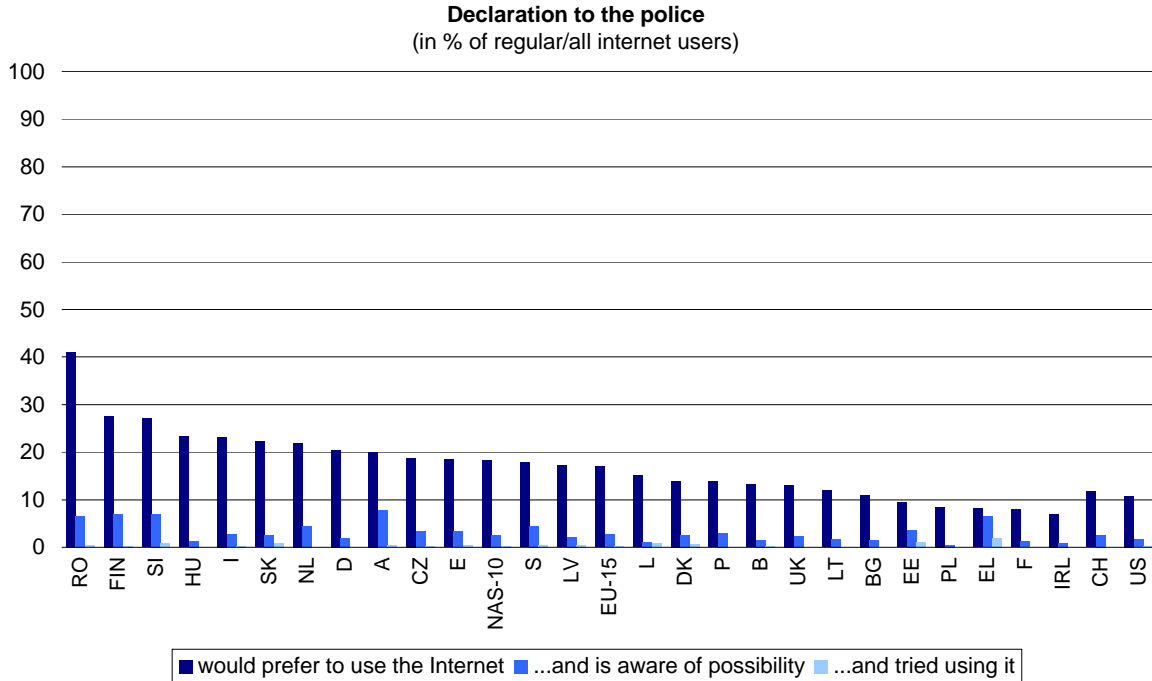


**CHART 9.3.**  
 Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
 Question: K1c  
 Source: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

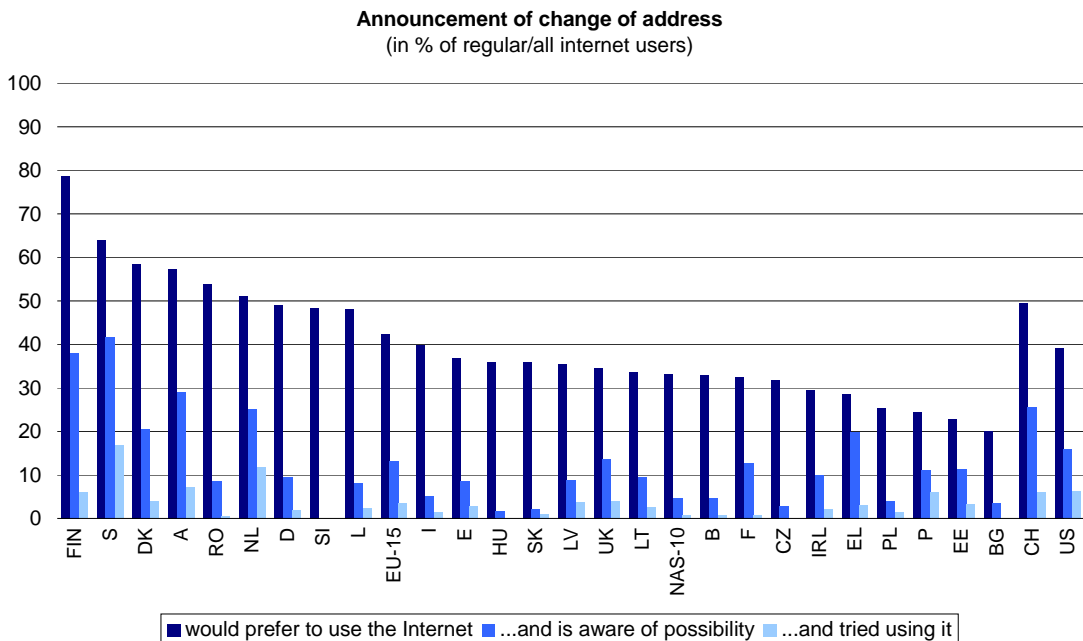
**Car registration**  
(in % of regular/all internet users)



**CHART 9.4.**  
 Base: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
 Question: K1d  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

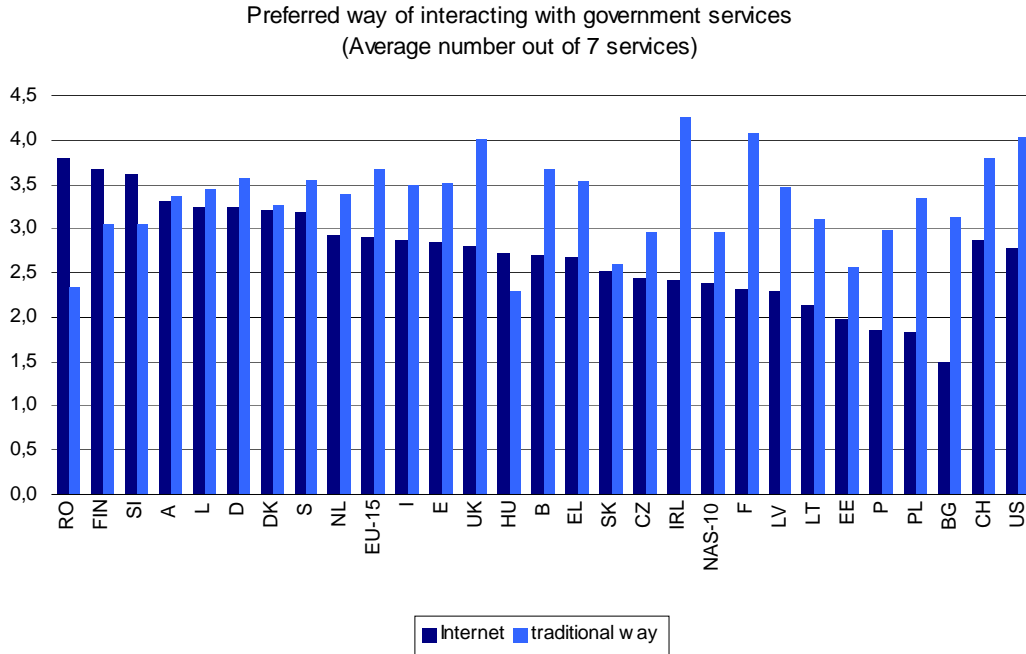


**CHART 9.5.**  
 Base: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
 Question: K1e  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

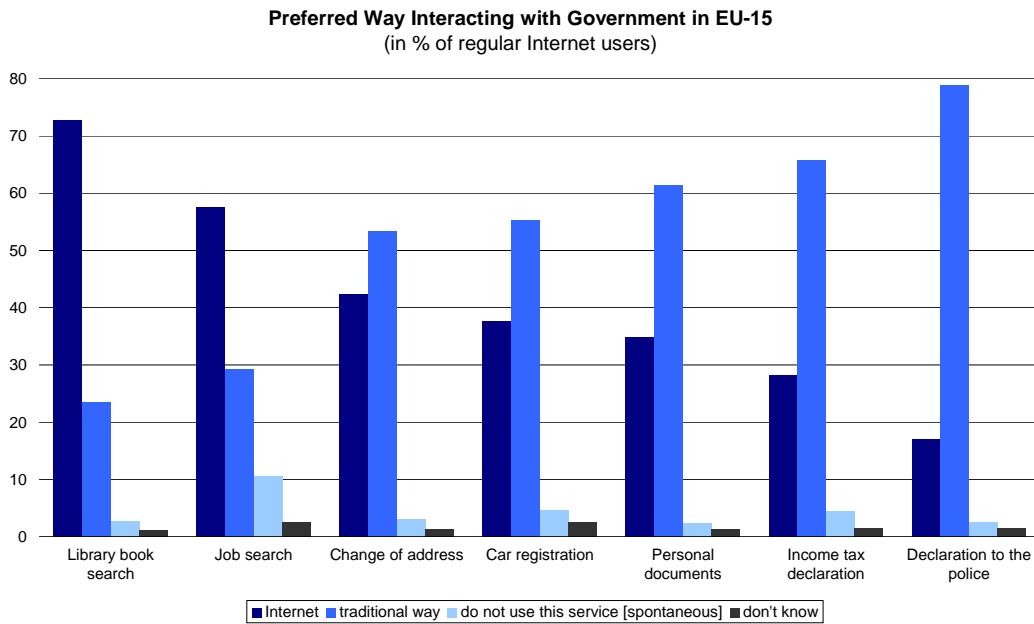


**CHART 9.7.**  
 Base: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
 Question: K1g  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

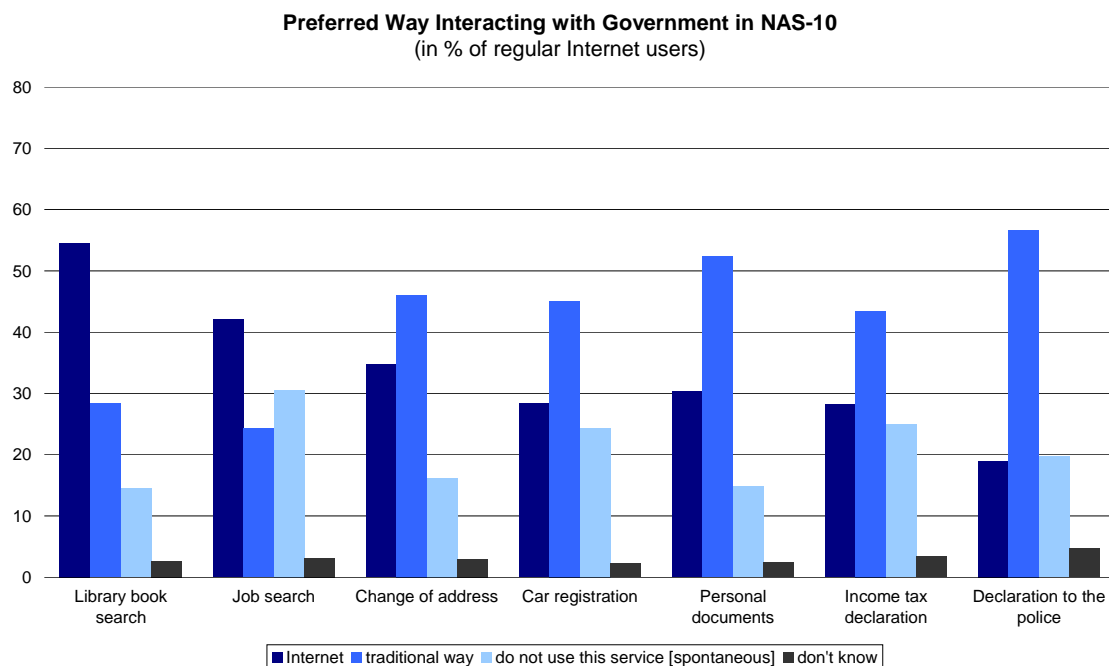
It is logical that the majority of respondents prefer traditional way of interacting with the government (CHART 9.8.-9.10, 9.11.) given the scarce supply of on-line e-government services and low internet usage and skills factor.



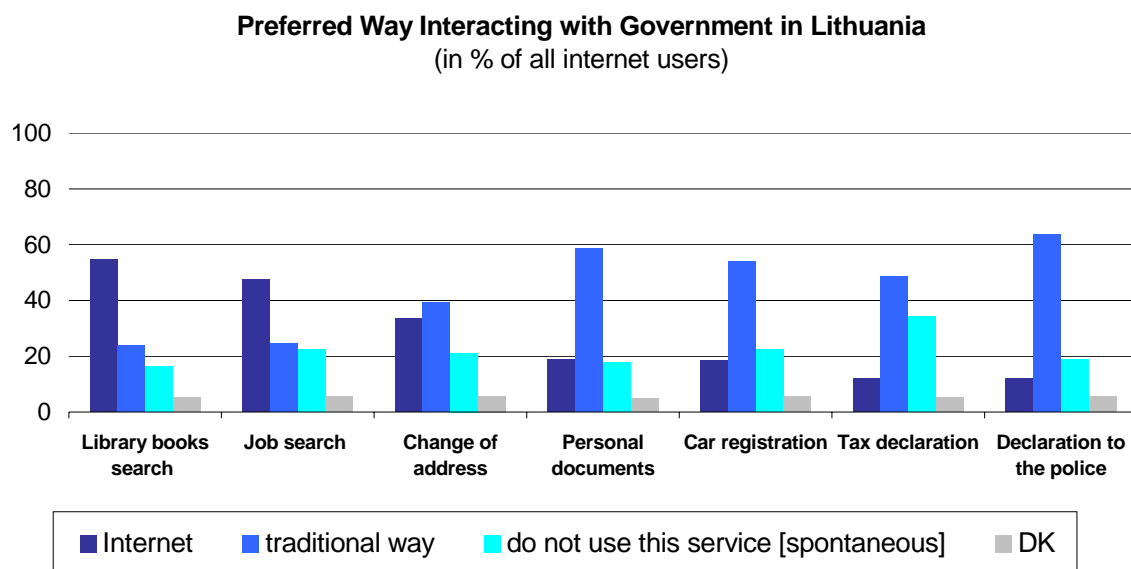
**CHART 9.8.**  
 Base: regular Internet users, weighted average number of services  
 Question: K1  
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS – NAS



**CHART 9.9.**  
 Base: regular Internet users, weighted column percentages  
 Questions: K1a, K1b, K1c, K1d, K1e, K1f, K1g  
 Source: SIBIS 2002, GPS



**CHART 9.10.**  
 Base: regular Internet users, weighted column percentages  
 Questions: K1a, K1b, K1c, K1d, K1e, K1f, K1g  
 Source: SIBIS 2003, GPS – NAS



**CHART 9.11.**  
 Base: regular Internet users  
 Questions: K1a, K1b, K1c, K1d, K1e, K1f, K1g  
 Source: SIBIS 2003, GPS – NAS

Searching for books in public libraries (CHART 9.6.) is relatively widely spread in Lithuania. Although searching for on-line books gradually crowd-out searching for traditional books.

**Searches for books in public libraries**  
(in % of regular/all internet users)

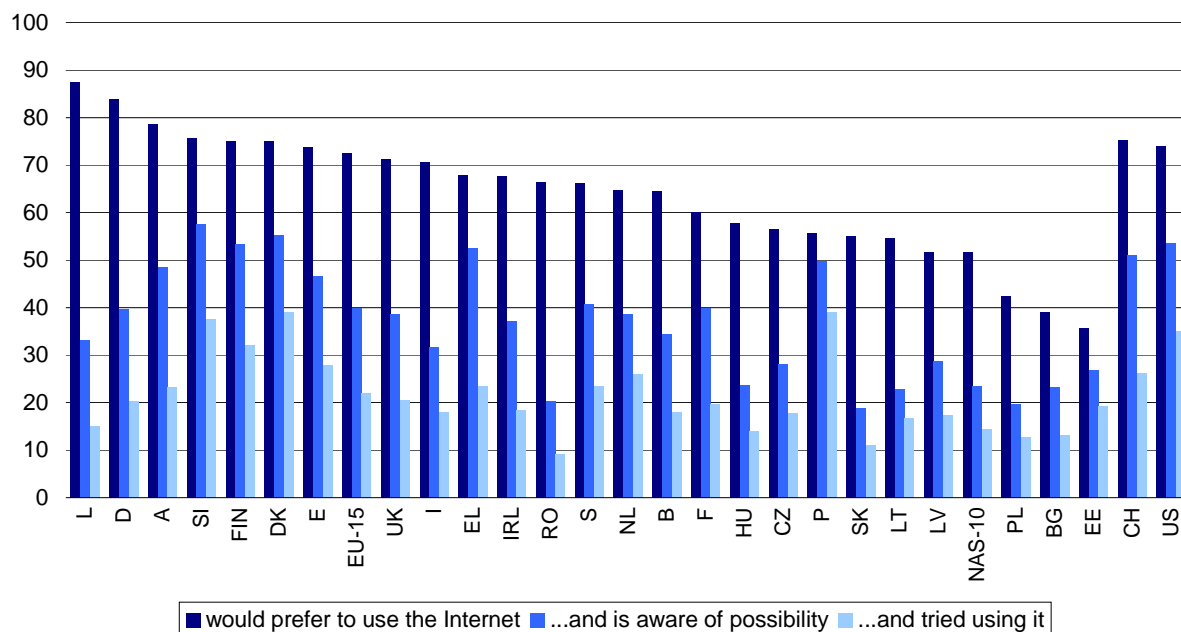


CHART 9.6.

Base:

EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages

Question:

K1f

Sources:

SIBIS 2002, GPS, SIBIS 2003, GPS – NAS

## 10. Conclusions

First results of the implementation of SIBIS+ showed that this project made an important contribution to benchmarking information society in Lithuania against NAS countries and countries of the EU. The idea of benchmarking information society in the countries of the EU and NAS according to common logical framework and system of indicators supported by GPS is relevant to Lithuanian context. In Lithuania information society is quickly gaining momentum in terms of political, legal and institutional readiness, however comprehensive statistics and approaches necessary for assessing and benchmarking information society have not been developed yet.

The General Population Survey (GPS) is an important tool for benchmarking information society (and often the only source of data for many information society indicators). Analysis of GPS results and their comparisons with existing IT-related data helps to better understand the process of development of information society and to identify areas for possible improvement of statistics and research.

All topics presented in GPS are relevant to benchmarking information society in Lithuania. However due to the fact that there is an essential difference between Lithuania and other countries-respondents in certain rules and regulation (for example, tax declaration - e-Government topic), survey results for some topics are less 'reliable' and comparable internationally.

Quality of questionnaire (preciseness and clarity of questions and definitions, their contextualisation with existing statistical indicators and household budget and labour force surveys) is crucially important for reliability of GPS results and consequently for their role in benchmarking information society. For example, according to the results of the GPS Lithuania is ahead of many countries (and the EU average) in home based teleworking (CHART 8.5). However, other data (proportion of computerised households, Internet penetration and Internet usage by location and other) give ground to doubt this fact.

Notions like 'life long learning' or 'social exclusion' are too complex and therefore open to personal interpretations, so their inclusion in GPS questions should be complemented by brief explanation of their meaning.

For Lithuania topic Telecommunications and Access is of crucial importance to benchmarking information society. Access to telecommunications has a broad impact on building e-inclusive information society. Therefore, assessment of access to telecommunications and its performance is key for benchmarking information society. In this context GPS survey plays an important role since it allows for deeper understanding and broader interpretation of statistical data and for 'revealing' causal links between indicators.

Unlike countries of the EU where total teledensity (fixed plus mobile per 100 population) exceeds 100%, for Lithuania it reached 73.9% in 2002. In the autumn of 2002 mobile communication penetration reached 47.1% thereby exceeding fixed telephony penetration which dropped to 26.8% (from 33.8% in 2000). Apart from Lithuania among NAS countries mobile penetration has exceeded fixed only in Czech Republic. Decline in fixed teledensity occurred mainly at expense of people with low income (many of whom live in rural areas) who often disconnect their fixed telephones in response to tariff growth without substituting them for mobile phones.

GPS data on Internet penetration and usage show that surge in mobile teledensity had a relative small impact on Internet access. This is an important value-added of SIBIS+ in this context. From the 'first glance' the mobile sector in Lithuania should have made a substantial contribution to access (Internet and telephony) in a comparatively short time. However, GPS data on the Internet penetration and use show that surge in mobile teledensity had a relative small impact on the Internet access. Mobile networks could have provided Internet access,

but this is not yet widely available at affordable prices in Lithuania. Thus the fixed network play a crucial role in access to the Internet.

GPS data 'confirm' official statistics on Internet usage and penetration and showed that these key indicators of information society in Lithuania are one of the lowest among NAS countries and only slightly exceed the NAS average. However, most important contribution GPS has made to the interpretation of these indicators. Important outcome of SIBIS+ in benchmarking information society in Lithuania is that it helped to make assumptions on the reasons behind low Internet penetration and usage beyond access to telecommunication and hardware.

Apart from insufficient teledensity (compared with countries of the EU and NAS where access to telephones and Internet usage and penetration are significantly higher than in Lithuania), GPS revealed that one of the most important reasons behind low Internet usage and penetration is unawareness of the Internet or little knowledge about it. The knowledge of the Internet in Lithuania is one of the lowest among NAS countries. The proportion of people among general population who have never heard about the Internet is much higher than the NAS average and only for Bulgaria the figure is worse.

Important impediment to Internet usage and penetration is poor computerisation of households and high Internet access costs. According to EUROSTAT and the Department of Statistics (Household Budget Survey conducted in first half of 2002), 12% of households in Lithuania and 36% in the EU have PC. In big cities 19% of households had computers in towns -11% while in rural areas less than 5% of households were 'computerised'. Besides, Lithuania has the most expensive Internet access of the three Baltic States.

The high cost of personal computers and Internet cost are important reasons behind the fact that Internet usage at work dominates Internet usage by location in Lithuania (which is not typical for the EU countries).

Insufficient access in general and gap between rural and urban population is most important impediment to information society in Lithuania (and possibly in many NAS countries).

A key issue in rural areas is the cost of access. The potential benefits of extending access and use of ICT to rural areas and are large for Lithuania. These benefits include better information flows, better opportunities for job searches and job creation, and communication that can enhance the democratic process, improve government services, and permit distance learning. A universal access policy proposed, by the government pursued through market processes with particular attention to the possibility of municipal- or community-based provision of universal access.

Approach to assessing rural-urban gap in access in broad sense beyond teledensity and computerisation of households (knowledge of the Internet) is very important for benchmarking information society in Lithuania and should be a topic for future research.

The majority of Lithuanian Internet and e-mail users belong to the category of medium intensity level users. Given that the majority of people in Lithuania use Internet at work one may assume that Internet is intensively used for work purposes. Internet as a contextualised social phenomenon influence economy, accumulation and dispersion of knowledge and forms of human association and communication. Crucial dimension of the Internet usage is purposes for which Internet is being used (work, leisure, learning...) and reasons for dropping-out (affordability, dissatisfaction...) from Internet usage. Some aspects like 'job searching' reflect the pattern of Internet usage but, in our opinion, SIBIS+ should strengthen this aspect of assessing Internet usage by adding additional questions to GPS.

According to GPS Lithuania belongs to the countries least concerned about both on-line privacy and confidentiality and data security. In Czech Republic and Estonia Internet users are slightly more concerned about on-line security than in Lithuania. However, taking into account significant differences in the intensity of Internet usage and its penetration between

Lithuania and these countries, concerns over on-line security in Lithuania seems to be relatively high. Lithuanians use Internet much less frequent than inhabitants from Czech Republic and Estonia, however, they are almost equally concerned about on-line security. So, in absolute terms concern about security is low in Lithuania, but given less 'intense' use of the Internet it is relatively high. A possible explanation to the relatively high concerns about security in Lithuania may be linked to many factors. For example to the poor knowledge of the Internet and insufficient experience of on line usage.

SIBIS+ laid down foundations for Europe-wide benchmarking information society initiative. Its first results are encouraging. However, there is a room for improvement.

For benchmarking information society in EU, and NAS countries data should be internationally comparable and relevant for all countries. Better to reduce the number of indicators by focusing on most important, grounded and comparable. SIBIS+ may suggest a separate system of indicators for benchmarking information society in selected countries or countries of the EU or NAS countries, but common system for all EU +NAS should be agreed upon and worked out with national statistics offices and EUROSTAT. For this purpose GPS should be significantly re-worked and improved.

A useful follow-up to SIBIS+ should be round-table discussion (with all participants and professional statisticians) on the advantages and disadvantages of the results obtained.

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## ANNEX: Methodology

### Methodology of the GPS 2002 survey

The survey was conducted in April-May 2002 (interviews were carried out between 4<sup>th</sup> April and 18<sup>th</sup> May) in all 15 EU Member States plus Switzerland and the US, using computer-aided telephone interviews. The survey was co-ordinated and executed by INRA Deutschland GmbH, Mölln. The population for this study is all persons aged 15 and over living in private households in the respective countries and speaking the respective national language(s). 11,832 interviews were successfully completed. The average interview length per country varied between 10 (Greece) and 20 minutes (Sweden).

Sampling: Target households were selected at random in all countries, either by random dialling techniques such as permutation of final digits or by drawing a random sample from official sources. Mostly a geographical stratification was implemented beforehand. For the selection of the target person common random keys were applied in all countries except for the UK where quota was used. In two cases (Spain, the US), screening had to be directed towards male respondents towards the very end of the field in order to gain gender representativeness.

There were three adjustments necessary in order to provide reliable data:

- Transformation from household sample to person sample. As only one person per household is interviewed, the described sample procedure provides a household sample, i.e. each household of the base population has the same likelihood of being in the sample but not each person. With the weighting stage of the transformation the equal likelihood of households is replaced mathematically by the equal likelihood of the individuals. To this end, each data set is multiplied by the amount of people in the household aged 15 or over. This number is subsequently divided by the average household size in order to obtain the actual case number.
- Adjustment of unweighted sample structure to the official statistic. Because random samples are not evenly distributed across all population strata, the distribution of unweighted samples regularly and systematically deviate from the population distribution from official statistics. Through the mathematical weighting the sample distribution was adjusted to the official statistics. The national weighting factor, which results from the iterative weighting, was included in the data material.
- Adjustment of weighted sample structure to the EU-15 Member States population. This weighting factor was necessary to calculate total figures according to the whole population of the European Union Member States. Furthermore it is useful to compare the EU with the US. Population sizes of each Member State are weighted to reduce the distortion based on the sample sizes in each country.

**NOTE:** The GPS 2002 questionnaire is available online and can be obtained from the SIBIS website: <http://www.sibis-eu.org/sibis/statistics/questionnaires.htm>.

### Sample characteristics GPS 2002

	Total		EU-15	
	unweighted	weighted	unweighted	weighted
<b>Total sample</b>	<b>11832</b>	<b>11832</b>	<b>10306</b>	<b>10306</b>
Country				
B	585	585	-	-
DK	501	501	-	-
D	1001	1001	-	-

EL	505	505	-	-
E	1015	1015	-	-
F	1000	1000	-	-
IRL	500	500	-	-
I	1000	1000	-	-
L	500	500	-	-
NL	530	530	-	-
A	500	500	-	-
P	500	500	-	-
FIN	669	669	-	-
S	500	500	-	-
UK	1000	1000	-	-
EU-15	-	-	10306	10306
CH	522	522	-	-
US	1004	1004	-	-
Age groups				
Up to 24	1964	2019	1731	1651
25 to 49	5511	5309	4817	4593
50 to 64	2515	2495	2191	2209
65 and more	1833	2000	1558	1839
Don't know	9	9	9	14
Terminal education age				
Up to 13	695	717	693	728
14	715	742	701	881
15 to 16	1794	1750	1641	1820
17 to 20	3587	3515	2997	2937
21 and more	3266	3275	2743	2495
Still studying	1687	1751	1463	1372
Don't know	88	81	77	73
Internet usage				
Total Internet use	6905	6908	5828	5610
Regular use (last 4 weeks)	5944	5948	4985	4781
Occasional use (last 12 months)	961	960	843	830
Non Internet use	5550	5643	4655	4548
Employment status				
Paid employment	4966	4853	4291	4133
Self-employed	935	941	809	799
Unemployed/ temporarily not working	701	683	621	631
In education	1687	1751	1463	1372
Retired or other not working	3441	3510	3034	3292
Don't know	102	94	88	80
Longstanding illness				
Existence of health limiting conditions	1898	1885	1645	1610
No existence of health limiting conditions	9868	9858	8607	8606
Don't know	66	90	54	90
Mobile phone usage				
Mobile phone owner	8202	8192	7301	7121

Teleworking				
Home based teleworkers	217	233	168	172
eHealth usage				
Searched for health-related info online	2712	2728	2149	2041
Searched and found health-related info online	2578	2592	2038	1916

## Methodology of the GPS-NAS 2003 survey

The survey was conducted in January 2003 (interviews were carried out between 1<sup>st</sup> January and 31<sup>st</sup> January) in the 10 Newly Associated States Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia and Slovakia, using personal aided personal interviews (PAPI). The survey was co-ordinated and executed by NFO AISA Czech Republic, Prague. The population for this study is all persons aged 15 and over living in private households in the respective countries and speaking the respective national language(s). 10,379 interviews were successfully completed. The average interview length per country varied between 20 (Romania) and 40 minutes (Lithuania).

Sampling: Target households were selected at random in all countries, either by multistage stratified random-route sampling or by drawing a random sample from official sources. Mostly a geographical stratification was implemented beforehand. For the selection of the target person common random keys were applied in all countries, i.e. the next birthday method and the Kish method, except for Bulgaria where quota was used.

There were three adjustments necessary in order to provide reliable data:

- Transformation from household sample to person sample in Poland and Slovenia. As only one person per household is interviewed, the described sample procedure provides a household sample, i.e. each household of the base population has the same likelihood of being in the sample but not each person. With the weighting stage of the transformation the equal likelihood of households is replaced mathematically by the equal likelihood of the individuals. To this end, each data set is multiplied by the amount of people in the household aged 15 or over. This number is subsequently divided by the average household size in order to obtain the actual case number.
- Adjustment of unweighted sample structure to the official statistic. Because random samples are not evenly distributed across all population strata, the distribution of unweighted samples regularly and systematically deviate from the population distribution from official statistics. Through the mathematical weighting the sample distribution was adjusted to the official statistics. The national weighting factor, which results from the iterative weighting, was included in the data material.
- Adjustment of weighted sample structure to the NAS-10 countries population. This weighting factor was necessary to calculate total figures according to the whole population of the Newly Associated States. Furthermore it is useful to compare the NAS with the EU. Population sizes of each of the ten states are weighted to reduce the distortion based on the sample sizes in each country.

**NOTE:** The GPS-NAS 2003 questionnaire is available online and can be obtained from the SIBIS website: <http://www.sibis-eu.org/sibis/statistics/questionnaires.htm>.

## Sample characteristics GPS-NAS 2003

	Total		NAS-10
	unweighted	weighted	weighted
<b>Total sample</b>	10379	10371	10379
Country			

BG	104	1008	-
CZ	1096	1096	-
EE	1001	1001	-
HU	1000	1000	-
LT	1017	1017	-
LV	1006	994	-
PL	1000	1000	-
RO	1054	1054	-
SI	102	1002	-
SK	1199	1199	-
NAS-10	-	-	10379
<b>Age groups</b>			
Up to 24	2036	1825	1736
25 to 49	4473	4604	4593
50 to 64	2402	2202	2234
65 and more	1468	1740	1816
<b>Long standing illness</b>			
Existence of health limiting conditions	2272	2386	2555
No existence of health limiting conditions	7961	7836	7688
Don't know	146	149	137
<b>Terminal education age</b>			
Up to 13	374	433	575
14	658	682	855
15 to 16	1099	1151	1099
17 to 20	4784	4816	4869
21 and more	1823	1833	1719
Still studying	1407	1213	1057
Never went to school	59	59	68
Don't know	175	184	138
<b>Employment status</b>			
Paid employment	4038	3999	3354
Self-employed	608	622	690
Unemployed/ temporarily not working	1272	1303	1506
In education	1407	1213	1057
Retired or other not working	3052	3231	3764
Don't know	2	3	9
<b>Internet usage</b>			
Never heard of the Internet (incl. don't know)	1349	1437	1506
Ever heard of the Internet	9030	8935	8773
Total Internet use	3700	3507	2773
Regular use (last 4 weeks)	3025	2852	2215
Occasional use (last 12 months)	675	655	559
Non Internet use	6679	6864	7606
<b>Mobile phone usage</b>			
Mobile phone owner	5763	5635	4534
<b>Telework</b>			
Home based teleworkers	162	162	120