



# SIBIS

## Slovakia

*Country Report No.9*

No.9

## Preface

This report represents an important deliverable of the project 'Statistical Indicators Benchmarking the Information Society' (SIBIS), running from January 2001 to September 2003 and funded by the European Commission under the 'Information Society Technology' Programme. 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-Employment 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 the Slovak Republic comparing it to the other NAS but also to EU-15 countries, Switzerland and the USA, for which the same survey was already carried out in 2002. The document has two main objectives, namely 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 ten chapters. The first three chapters are designed to give the reader an idea of the main outcomes (Executive Summary) and the context (introduction to the country and the topics). The core of the report is the analysis of indicators, provided in chapters 4 to 9. Those chapters focus on an analysis of ICT infrastructure and security issues, e-society and social inclusion, the e-economy, e-education, e-work and e-government. Important findings are presented in the body of the document and additional data is shown in the annex.

The intended audience are policy makers and statistical offices at all levels (national, and supranational), industry leaders and researchers in the domains and those involved and interested in benchmarking the domains throughout Europe and the world. Those institutions should consider the questions and the subsequent indicators developed by SIBIS 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 society programs.

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 was aimed at setting the scene on the topics, identifying existing indicators for the several topics that already exist in the Slovak Republic and defining the gaps in the statistical coverage.

SIBIS is led by Empirica (Germany), and includes the following project partners: RAND Europe (The Netherlands), Technopolis Ltd. (United Kingdom), Databank Consulting (Italy), Danish Technological Institute (Denmark), Work Research Centre Ltd. (Ireland), Fachhochschule Solothurn Nordwestschweiz (Switzerland), University of Ljubljana (Slovenia), ASM Market Research and Analysis Centre (Poland), Budapest University of Economic Sciences and Public Administration (Hungary), Faculty of Management of the Comenius University Bratislava (Slovakia), "Dunarea de Jos" University (Romania), Institute of Economics at the Bulgarian Academy of Sciences (Bulgaria), Estonian Institute of

Economics at Tallinn Technical University (Estonia), Social Policy Unit (Sozialinnen Politicus Group) (Lithuania), Computer Science Institute of the University of Latvia (Latvia), SC&C Ltd. Statistical Consultations and Computing (Czech Republic).

The Faculty of Management is one of the schools of the Comenius University – the oldest and largest University in the Slovak Republic – at Bratislava. The Faculty of Management has been established in 1991 i.e. after the historical changes in the Central and Eastern Europe and after the demise of the socialism as a modern school of management modelled according to the similar schools in the EU and the USA in order to be able to prepare for the country's newly developing market economy a new breed of managers. As in general the language of business is English language, a part of curriculum in the school has been delivered in English by visiting faculty from the partner Universities in the EU and the USA. An integral part of the overall program of the school has been also the research and especially its international dimension carried out in close cooperation with partner Universities from the EU and the USA. Among such important international research and development projects belongs also this Joint Project e-Europe+ that is linking together 10 NAS countries, 15 EU member states and also the USA and Switzerland.

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## CONTENTS

1. Executive Summary .....	5
1.1 ICT Infrastructure and Security .....	5
1.2 e-Society and Social Inclusion .....	5
1.3 e-Education and Life-long-learning .....	5
1.4 e-Economy and e-Commerce .....	6
1.5 e-Work .....	6
1.6 e-Government .....	7
1.7 e-Health .....	7
1.8 Ideas for future research .....	8
1.9 Conclusions .....	8
2. Introduction .....	9
2.1 Background.....	9
2.2 Country and Topic Areas .....	9
2.3 Overview of the Report .....	11
3. General Information about the Slovak Republic.....	13
4. ICT Infrastructure and Security .....	14
4.1 Telecommunications and Access .....	14
4.2 Security.....	17
5. e-Society and Social Inclusion .....	19
6. e-Education and Life-long-learning .....	24
7. e-Economy and e-Commerce .....	30
8. e-Work.....	34
9. e-Government and e-Health.....	38
10. Conclusions.....	44
References .....	48
ANNEX 1: Methodology .....	49
Methodology of the GPS 2002 survey .....	49
Methodology of the GPS-NAS 2003 survey .....	51

## 1. Executive Summary

This particular SIBIS – WP5: Country Topic Report, Country: Slovak Republic has been prepared as one of ten such reports on the basis of the results achieved in all NAS countries including the Slovak Republic as conducted under the framework of the SIBIS – Statistical Indicators Benchmarking the Information Society (IST-2000-26276) as well as on the basis of some additional information gathered by the Statistical Office of the Slovak Republic.

### 1.1 ICT Infrastructure and Security

In the ICT Infrastructure and Security the situation in the Slovak Republic could be characterized as relatively good vis-à-vis the NAS-10 countries. In some cases being even in the leading position as e.g. regarding the numbers of households connected to the cable TV. In some other areas such as the total number of PCs per one household, the Slovak Republic was below the average of the NAS-10 countries, the same also in the general knowledge of the Internet, etc. In some other areas the position of the Slovak Republic is even less favourable, as in case of household density with connection to the Internet. For example according to the information from the Ministry of Transport, Post and Telecommunications of the Slovak Republic it has been only 3 per cent while for example in the Czech Republic it was 17 per cent. As far as security is concerned, the Slovak Republic has been on the average of the NAS-10 countries i.e. around 10 per cent. In general we could conclude that the position of the Slovak Republic in this sector has been on average or below it, to some extent the better performance has been hampered by the fact that the fees for utilization of Internet, etc. have been still rather too high for an average family and thus most people were using Internet only either in their work places or in schools, etc.

### 1.2 e-Society and Social Inclusion

As far as the e-Society and Social Inclusion is concerned, the first part of our analysis regarding the digital divide and education divide, the focus has been on four risk groups according to gender, age, education and income. In this respect the Slovak Republic achieved a lower value than is the average of the EU-15 but a slightly higher value than is the average of the NAS-10 countries.

In the second part of our analysis, indicators regarding the barriers to use of Internet have been analysed such as e.g. requirements for more advanced computer skills and a local indifference. The results of this analysis are about the same as in other problem areas i.e. the Slovak Republic is substantially behind the EU-15 average and on or above the average of the NAS-10.

As far as the social exclusion without Internet is concerned, the Slovak respondents are somewhere between the EU-15 and NAS-10 averages.

### 1.3 e-Education and Life-long-learning

In preparing this particular Country Topic Report the following four basic types of skills in using and questioning the Internet have been used and defined as the skills of digital literacy measured by COQS index of digital literacy what are the first letters of Communicating with others, Obtaining, downloading and installing appropriate software on a computer Questioning information search on the Internet, Searching for the required information

In general, the SIBIS survey shows rather big differences in the level of digital literacy also among the surveyed EU-15 countries. Their COQS index varies between 0.5 and 1.4 with the average of 0.8.

The estimated value of digital literacy in the Slovak Republic falls to the level of COQS index of about 0.4, although this value could be changed within the next years, when statistical surveys on ICT will take place also in the Slovak Republic and thus the more reliable figures on digital literacy will be available. The statistical data on information technologies will be collected in the Slovak Republic for the first time in statistical surveys in 2003, so the first results will not be for disposal until the year 2004. The core of the Internet usage as one of the main areas of digital literacy is in the Slovak Republic still mostly at schools by pupils, students and teachers and at work places by employees as well as management of enterprises. The communications via e-mail have been carried out in most cases also at jobs related to schools and education in the Slovak Republic. The same results have been achieved also regarding creation of personal web pages on Internet as an important indicator on the higher skills in using Internet.

One of the main reasons for this rather unfavourable situation is that the costs of Internet related expenditures are rather too high in the Slovak Republic. That is also the main reason why there is still not enough schools connected to the Internet. Another problem related to rather low digital literacy is that PC teachers are on a short supply and have to be hired on external basis as their salaries as teachers are too low and they prefer rather jobs outside education.

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

As also this SIBIS survey has demonstrated, the Slovak Republic has been in this problem area seriously delayed behind the member states of the EU-15 and unfortunately to some extent also behind some more developed NAS-10 countries. The development of e-Commerce is closely related to the overall informatisation of the society.

In e-Commerce as well as in the overall informatisation of the society the key role has been played by the state in general and the government in particular. Their main role has been to create all necessary legislative preconditions and to remove all other various objective reasons for the further and more dynamic development of the e-Commerce also in the conditions of the Slovak Republic. First of all it is necessary to harmonize our particular legislation with the legislation of the EU. In this respect it is necessary to prepare a legislation on e-Commerce, to create various economic stimuli for the support of the e-Commerce as e.g. tax and customs incentives for purchasing and import of modern information technology, advertisement and promotion campaign regarding the further development of the e-Commerce. All these important tasks are parts of the Action Plan of the Strategy of Informatisation of the Society in the Conditions of the Slovak Republic that by itself is a follow up to the Strategy of the Informatisation of the Society in the Slovak Republic and to the Initiative of the e-Europe+ in which also the Slovak Republic has been actively participating. For the time being there are no official statistical data on the e-Commerce in the Slovak Republic hence for the future it will be necessary to prepare and introduce an official statistical survey on this modern development trend in e-Economy and e-Commerce.

#### **1.5 e-Work**

Changes taking place in the development of the economy of the Slovak Republic have found its reflection also in the development of employment. In the initial phase of the economic reform the main reasons for a decrease of employment were conversion in the armament industry, an increase of inputs from import in raw and material demanding productions and

mainly the collapse of the Eastern markets. Besides restructuring of economy within the transformational process of the economic system the development of employment and unemployment in the Slovak Republic was affected also by the demographic factor of high growth of population in productive age.

As far as the e-work is concerned i.e. an application of the latest information and communication technologies on the labour market of the Slovak Republic, the situation is about the same as in the case of e-Government in general. There have not yet been any systematic attempts to utilize to the larger extent informatisation of the particular agenda on employment and unemployment in practice. Although there has been a high interest in various forms of teleworking also from home or through mobile phones especially among the young people, their practical utilization has been mainly hampered by various organizational reasons on the side of employers as well as by technical problems needed for these modern forms of works.

## **1.6 e-Government**

In general we could state that the e-Government in the Slovak Republic belongs among the oldest areas of informatisation in the country but it has not yet been implemented to the larger extent. Although some necessary legislative steps have already been made the practical application e.g. of utilization of the electronic signature, etc. has been almost non-existent. The most of agenda where the principles of e-Government have to be implemented as a kind of the pilot applications like in tax reporting, driving licences, passports, ID cards, etc. have not yet for various reasons (legislative, technical, organizational, etc.) even started.

The results of the SIBIS survey clearly demonstrate that there has been still long way to go in order to achieve in the Slovak Republic about the same standard in various e-Government agendas as in the EU-15. Especially it requires removing various administrative obstacles preventing so far a wider utilization of these modern communications between citizens and Government agencies. For example it is not supporting wide utilisation of e-tax returns if then they have anyhow be submitted also in the printed form on the classical standard forms.

## **1.7 e-Health**

In this report we have included the problem area of e-Health under the more general chapter on e-Government as the health services in general has still been one, and at the same time also most complex agendas of the Government of the Slovak Republic. As yet there is no official statistical information on the e-Health in the Slovak Republic that could enable any more reliable international comparisons with the EU-15 or NAS-10 countries.

In principle this situation is closely related to the overall standard of informatisation of the society in the Slovak Republic. As in various other problem areas also in the e-Health, the Slovak Republic has been behind of the member states of the EU but in general in comparison with the NAS countries, it has been above their average. In spite of the high interest of the Slovak users of Internet for this kind of services, the development of the e-Health has mainly been hampered by the rather limited availability of Internet for the general public, households, etc. Another serious problem has been that there has been an insufficient Internet infrastructure among the providers of the primary as well as secondary health services. Another problem has been related to the insufficient interfaces between national and regional health infrastructures as well as their links to the particular databases as well as public health networks in the EU.

Again as in case of the e-Commerce and other similar sectors of informatisation of the society in the Slovak Republic the qualitative changes are expected especially from the



above mentioned Action Plan of the Strategy of Informatisation of the Society in the conditions of the Slovak Republic.

## 1.8 Ideas for future research

Unfortunately, as also the results of the particular SIBIS survey has demonstrated there still exists a rather considerable qualitative gap and digital divide between the EU-15 countries on the one side and the NAS-10 countries as far as the informatisation and digitalisation are concerned. As far as the Slovak Republic is concerned it is in general above or on the level of the average of the NAS-10 countries.

In this respect the particular analyses were to some extent hampered by the incompleteness of the SIBIS survey data as according to our statistics the availability of data and/or graphs for comparative analyses was as follows:

Graphs for the EU-15 and the NAS-10 countries were completely available only in case of 50 out of the total of 100 graphs delivered for this analysis i.e. only 50 per cent of the graphs enabled mutual and the most relevant analyses between the Slovak Republic on the one hand and the EU-15 or NAS-10 countries on the other hand

- 30 graphs were available only for the EU-15 what unfortunately was very limited source for comparative analyses as in the most cases there was not possible to find out comparative data on NAS-10 and the Slovak Republic from other sources and/or surveys
- 14 graphs were available only for the EU-7 countries what could not be used for any kind of comparative analyses
- 6 graphs according to our analysis were available only for NAS-10 countries what also has had only rather limited potential for various comparative analyses.

In view of the above, for the future it will be of utmost importance to secure a 100 per cent comparability of data for all three main objects of comparative analyses i.e. the EU-15, NAS-10 and the Slovak Republic. In this connection it would be most desirable to conduct a research and development in this problem area to such an extent that as its main result there would be a system of statistical surveys applicable in all countries concerned that would be producing mutually comparative statistical data on these key aspects of the future development of e-Europe and e-Europe+ Initiatives as approved by the Lisbon Summit of the EU.

## 1.9 Conclusions

The SIBIS surveys and their processing have produced a lot of invaluable statistical information on the current status of the informatisation and digitalisation in the EU-15 and the NAS-10 countries. The most valuable have been the particular comparative analyses that have produced a lot of very relevant information – in the most cases the very first ever such comparative ones - for the future decisions on the further development in the implementation of the e-Europe and e-Europe+ Initiatives in the current member states of the EU as well as the NAS countries i.e. in the candidate countries that in less than one year from now will become the new members of the enlarged EU-25. In this connection it would be very much desirable to utilize the results of these surveys, analyses and reports for the acceleration of the development in the informatisation and digitalisations in the NAS countries to such an extent that by their accession to the EU-25 they will have clear national strategies how to narrow in the near future the existing gap between them on the one side and the EU-15 on the other side in order to become a part of the most competitive economy in the world as envisaged by the particular Lisbon e-Europe Initiative and/or strategy until 2010.

## 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, 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

One of the specifics of the Slovak Republic vis-à-vis its current development trends towards the informatisation of the society as well as its future participation in the e-Europe has been that it has had a rather complex and not always the most favourable historical development in the terms of computerization and informatisation in general. In this connection we have first of all to take into account the following main features:

- As a part of the former Czecho-Slovak Federation and its asymmetric model, as in various other problem areas also in computerization it has been less developed than the Czech Republic as a territory where all federal as well as Czech institutions were based so also the concentration and utilization of the available computer technology has been correspondingly higher than in the Slovak Republic. For example in 1993 when the two republics separated from each other, the index of personal computers per 100 inhabitants (EU-15=100) was in the Czech Republic 27 but in the Slovak Republic only 17 and/or in absolute figures 2.9 against 1.9 per 100 inhabitants or the eighth lowest among the current NAS countries.

- The overall technological basis for computerization under the former socialist regime has been less developed and it could be characterized as a basis consisting of all various types of information and communications technologies that offered only rather very limited opportunities for any type of connectivity, compatibility and mutual integration. An attempt to overcome this evident technological handicap through introduction of the so-called EC (Unified System of) computers produced on the collaborative basis by all former socialist countries was also not a successful one, as the new EC computers were technically not reliable and to the large extent depended on the components from "the West" as e.g. in the disk memory units, etc.

- However, in spite of this evident technological shortcomings, there has been achieved in some areas of computerization quite a remarkable and also internationally recognized achievements as e.g. in the state statistics, where thanks to the technical assistance from the UNDP there has been in the 1960s established a Computing Research Centre in Bratislava as a research and development centre for the former Federal Statistical Office in Prague. Some of the research projects and outputs have become important contributions to the programs of statistical computing even under the framework of the UN Economic Commission for Europe in Geneva especially in such projects as ISIS – Integrated Statistical Information System, METIS – Metainformation system for Statistics (since that time being further developed under the program of the EU Eurostat, and also as a METANET Network of Excellence funded by the EU, etc.).

- The modern personal computers and telecommunications have been introduced only after the historic political changes in the end of 1980s and mainly during the next decade of 1990s.

In view of this historical development the start of the Slovak Republic as an independent state on 1 January 1993 has been in the terms of computerization and informatisation to the large extent affected quite negatively by consequences of the above previous historical development especially as far as the technological and communications bases are concerned. However, on the other hand the new statehood has given to the new country a good chance to start with the programs of computerization and informatisation in many cases from scratch i.e. in the new state institutions with the new latest computer and telecommunications technology without necessity and time consuming process of the transformation and/or upgrading from the old technological basis to the new one, etc.

As we have already mentioned it above, the building of the new state has been in many cases at the same time also the process of introduction of the new information and communications technology into the practice of the new state institutions as well as to other sectors of the society. As a result, in the application area, the first years of independence have become also years of launching and/or continuation of several ambitious computerized projects that to some extent later on could serve as a good starting basis for the country's drive towards contemporary trends in informatisation of the society. Of such projects especially the following ones have to be mentioned: the GOVNET as a project of networking the government institutions into an integrated networked information system, the State Treasury of the Ministry of Finance, the SIS – State Information System, the ASIS – Automated Statistical Information System of the Statistical Office of the Slovak Republic, the INFOVEK – a web based Educational system for elementary and high schools and the SANET as a non-profit data network of universities, the Slovak Academy of Science and other research institutions and various other similar projects in individual ministries and other central government institutions. As a results by the end of 1990s practically all government ministries and other institutions and agencies have had developed their own web based information systems offering the basic information on the particular institutions as well as giving opportunity to access and approach them in the way of the on-line communication. The particular web sites of individual ministries and other governmental but also non-governmental institutions and agencies can be found on the following web site:

Most of the particular web sites are also in English language versions but there is to some extent a problem with the practical utilization of them given by the fact that all of them have been created without any specific unified model hence every particular web site has its own different internal structure and logic what to some extent makes their practical utilization less efficient than if they would have been developed according to the same model.

In connection with the ongoing global trend in all developed countries worldwide, regarding informatisation of the society, also the Government of the Slovak Republic has by its resolution No. 558/1999 of the 30 June 1999 decided and has delegated to the minister of transport, posts and telecommunications a responsibility to prepare in cooperation with all

other central organs of the state administration a consistent “Strategy of the Development of Information Society in the New Millennium (in the Slovak Republic)”. This task has been a direct follow up to the negotiations of the Government of the Slovak Republic with the Slovak Rectors Conference and also to the conclusions of ministerial forums of the candidate countries of the Central and Eastern Europe devoted to the issues of the development of the informatisation of society under the Lisbon strategy on e-Europe as adopted by the EU.

By the amendments in the so-called Competence Law (on the responsibilities of the Ministries and other central organs of the state administration in the Slovak Republic) effectively since 1 January 2000 the competencies in the field of informatics have been transferred from the Ministry of Transport, Posts and Telecommunications to the Ministry of Education of the Slovak Republic. Accordingly, on the basis of that changed situation, the Ministry of Education of the Slovak Republic has prepared a strategic document no. 1401/2001 in June 2001 for the Government of the Slovak Republic named “Politics of Informatisation of the Society in the Slovak Republic”. The particular strategic document has been based and has adopted and elaborated on the national level all the basic principles of all strategic documents as adopted by the member states of the European Union at their Lisbon European Council summit in March 2000 as well as all subsequent strategic documents including the e-Europe Action Plan and the conclusions of the Warsaw Ministerial Conference initiating the common strategy of the candidate countries and the EU in the form of the “e-Europe+ Action Plan”. The document has been submitted to the session of the Government of the Slovak Republic on 13 June 2001 and the resolution No. 522 has been adopted by the Government of the Slovak Republic that has approved: the politics of informatisation in the Slovak Republic and also joining the e-Europe initiative by the Slovak Republic.

In this respect then this particular SIBIS and SIBIS+ Projects (IST-2000-26276) under the framework of the e-Europe and e-Europe+ Initiatives dealing with the Statistical Indicators Benchmarking the Information Society funded by the European Commission is an extremely important international contribution to the effort of the Slovak Republic on the national level to prepare the country for its soon-to-be carried out accession to the EU on the 1<sup>st</sup> May 2004 also in the terms of its preparation in overall informatisation, computerization and digitalisation. International comparisons of the Slovak Republic in some selected problem areas of informatisation as ICT Infrastructure and Security, e-Society and Social Inclusion, e-Education and Life-long Learning, e-Commerce and e-Economy, e-Work and e-Government as covered also by this Country Topic Report are of an extreme importance for further proceeding in this preparations as they are offering invaluable information on the situation in other candidate countries as well as in the European Union and thus giving an unique opportunity to define also the place of the Slovak Republic vis-à-vis its regional partners as well as all other 24 partners in the future enlarged EU.

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

This SIBIS+ - WP5: Country Topic Report for the Slovak Republic according to the adopted standard layout consists of the following three main parts:

The first part contains:

Preface

Executive Summary

Introduction with the Background Information, the Country and Topic Areas and the Overview of this Report

The second part consists of the main body of the Report i.e. the chapters 3 through 9 where are processed results of the analyses of the following topics:

3. General Information about the Slovak Republic
4. ICT – Information and Communication Technology Infrastructure and Security
5. e-Society and Social Inclusion
6. e-Education and Life-long learning
7. e-Economy and e-Commerce
8. e-Work
9. e-Government including e-Health

The results of chapters 4 through 9 are based on the analytical processing of the results of the SIBIS 2003 survey conducted in each and every NAS country including the Slovak Republic and to the large extent it gives also an opportunity to compare the results with the results from the similar SIBIS 2002 survey conducted in all EU-15 member countries and in addition also in Switzerland and the USA for the needs of some comparisons with the global trends outside the EU-15.

The third part of the report consists of:

10. Concluding chapter with the general Conclusions and Recommendations

References

Annex 1: Methodology

This report as such is the 49 pages abridged so-called “only publication” version of the full 97 pages so-called “national” version of this report. In this respect this abridged version contains only some selected analyses for individual sectors as listed above in connection with chapters 4 through 9. In case of interest in the full “national” version of the report, please contact us on the address as stated in the end of Preface to this report on the page 4.

### 3. General Information about the Slovak Republic

The Slovak Republic is an independent country since January 1<sup>st</sup> 1993 when it declared its independence after a peaceful separation from the Czech Republic as another independent state created from their former common Czech-Slovak Federative Republic. The total area of the Slovak Republic is 48.845 square kilometres and the total population of 5.4 million citizens. The capital of the country is Bratislava with about 450 thousand inhabitants. The Slovak Republic is a landlocked country in Central Europe and has common borders with the Czech Republic, Austria, Hungary, Ukraine and Poland. The national currency is the Slovak koruna and its exchange rate is currently about 41.40 SKK/1 Euro. The total GDP in the Slovak Republic was estimated in 2002 at US\$66 billion and the growth in the same year was 3.5 per cent. The inflation for year 2003 has been predicted to be between 8 to 9.5 per cent and the biggest problem of the country has been a very high unemployment at around 18 per cent of the total work force and the negative balance of the foreign trade that in 2002 dropped to 96 billion SKK after the record high level of about 105 billion SKK in 2001. The country has been in the first group of candidate countries for accession to the EU and as such has to join the EU on the 1<sup>st</sup> May 2004 together with another nine candidate countries. The country is also a member of the OECD and a candidate for joining the NATO in 2004.

General information for Slovakia:

<b>Area</b>	48.845 square km	
<b>Population</b>	5.4 million	
<b>Exchange rate</b>	1 € = 41.40 SKK	
<b>Economy</b>	<b>2002</b>	<b>2003 est.</b>
- GDP growth	4.4%	3.7%
- Inflation	4.3%	8.5-9.5%
- Unemployment	18%	17%

Ratings:

Index	Rank	Source
<b>Information Society Index 2000</b>	34 of 55 countries	IDC
<b>Information and Communication Index 2001</b>	50 of 75 countries	WEF
<b>Technological Achievement Index 2001</b>	28 of 72 countries	UNDP
<b>Global IT IQ ranking 2002</b>	38 of 100 countries	Brain bench
<b>E-readiness ranking 2001</b>	48 of 60 countries; (score: 3.38 out of 10)	Economist Intelligence Unit and Pyramid Research
<b>Network Readiness Index 2001-2002</b>	53 of 75 countries (score: 3.38 out of 10)	Centre for International Development, Harvard University

## 4. ICT Infrastructure and Security

The following analyses not only in this chapter but also in all other chapters exploit the latest figures from the SIBIS GPS surveys as well as data from some other sources as e.g. from the Eurostat, the Ministry of Transport, Post and Telecommunications (MTPT) of the Slovak Republic, etc.

This specific chapter deals with analyses of two groups of issues viz. Telecommunications and Access and the Security regarding ICT respectively.

### 4.1 Telecommunications and Access

The development of ICT is closely connected with the development of the information and communication infrastructure. New, quickly developing communication systems create conditions for providing and applying of telecommunication infrastructure that were unimagined in the past, such as PC networks, the Internet, mobile phones.

Currently, the public telecommunication network represents the predominant part of ICT in the Slovak Republic. Its main features are gradual digitalisation, the entry of mobile networks providers, convergence of data and telecommunication networks and, in particular, Internet.

According to the statistical survey carried out in 1999-2001 by Eurostat, availability of data on ICT is substantially higher in the EU Member States than in the NAS countries. This is the case especially for households and enterprises. As for the public sector, data availability is more or less the same, and for the sector of providers it is even in favour of the NAS countries. The best position among the EU Member states was gained by UK, Finland, Sweden and Portugal. Among the Candidate Countries the best availability of data was presented by Slovenia, Hungary and Estonia. The Slovak Republic was just before the last country.

As regards the home access to ICT, telephone, PC, Internet, mobile phone, fax and cable TV they are the most exploited devices. Concerning these indicators, the Slovak Republic indicates the value over the average of the NAS states. As for ownership of telephones (80%), the Slovak Republic is on the third position, beyond Estonia and Slovenia. In ownership of mobiles, the Slovak Republic occupies the fourth position. Ownership of fax in households' ranges between 3% and 10% in the countries indicated. This is affected by the substantially higher usage of Internet.

As to the number of households connected to the cable TV, compared with NAS-10 states, the Slovak Republic is in the leading position along with Hungary and Bulgaria, followed by Poland, Lithuania and Latvia. According to the Ministry of Post, Transport and Telecommunications of the Slovak Republic.

In 1999-2000, the NAS showed the rate of the total number of PCs per one household 46%. Having the rate of 25%, the Slovak Republic was on the seventh position. As for enterprises, the rate of the total number of PCs indicated higher value (54%).

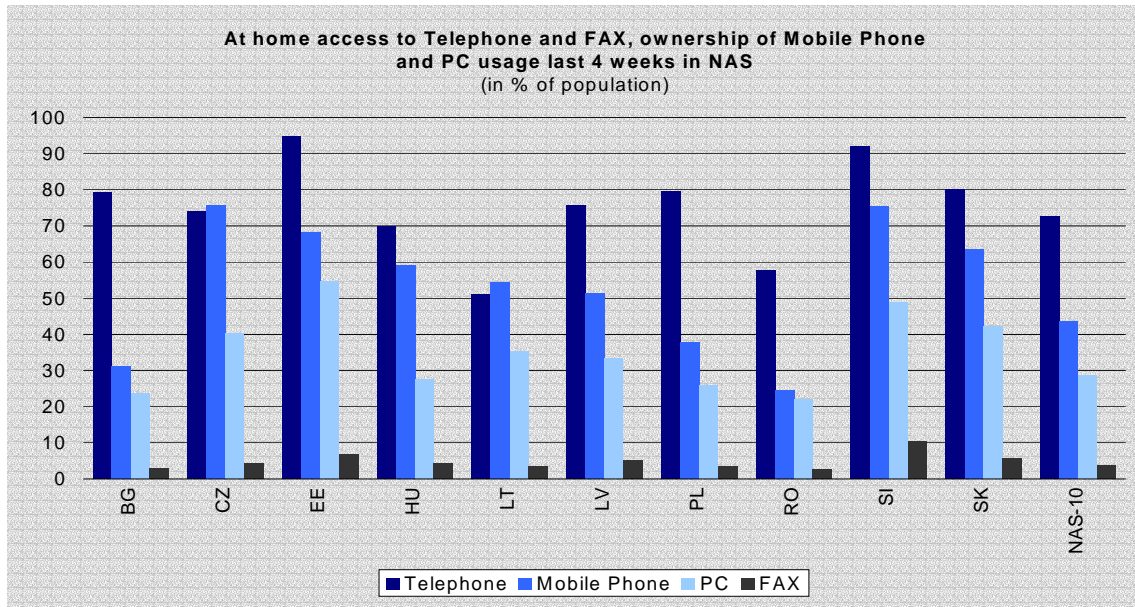


Figure 1: At home access to ICT  
 Base: all respondents, weighted column percentages  
 Questions: A19 a, b, c  
 Source: SIBIS 2003, NAS-GPS

The Internet is the most spread medium of ICT that shows also the highest growth. Comparing the general knowledge of the Internet, the Slovak Republic is on the seventh position from the NAS and as such it is below the average of NAS-10. Indicating not quite 10% of respondents with Internet access at home, the Slovak Republic is only on the unfavourable eighth position among the NAS states.

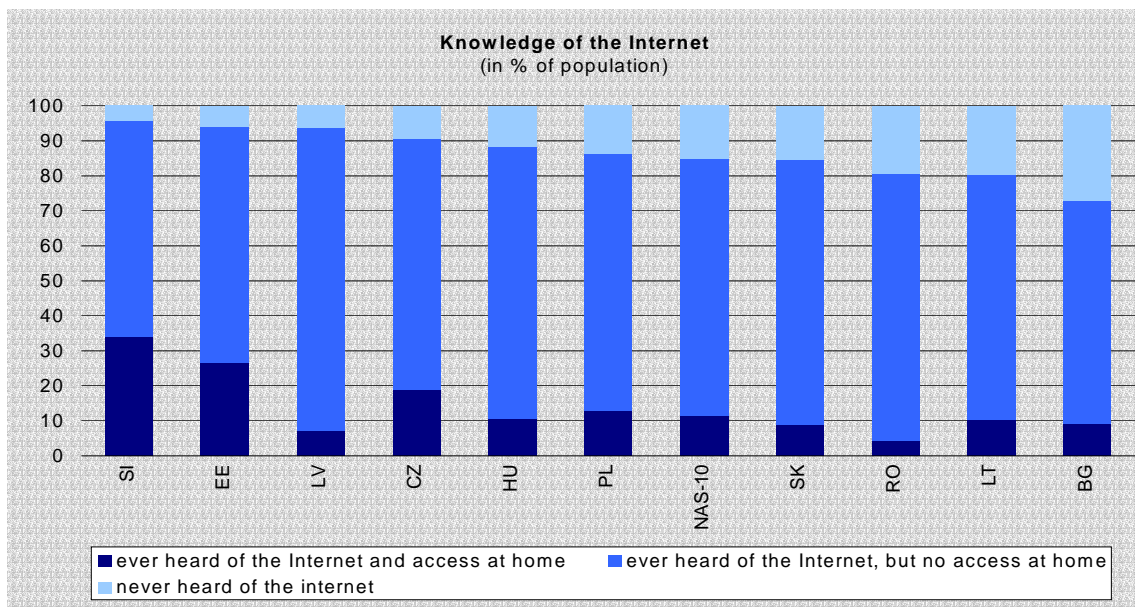


Figure 2: Knowledge of the Internet  
 Base: all respondents, weighted column percentages  
 Questions: A5a, A5b  
 Source: SIBIS 2003, NAS-GPS



In this regard, the Slovak Republic is above the average of NAS-10, and is followed by Bulgaria, Poland, Hungary and Romania.

Experience with the Internet is to a large extent connected with last years in the Slovak Republic. During the last couple of years, about 10% of the Slovak population have acquired their own experience with the Internet. As to making the experience in the period -more than two years ago-, the Slovak Republic is again only before the last country. In the field of the usage of the Internet measured by regular (i.e. at least once a month) and irregular (at least once a year) access, the Slovak Republic is on the sixth position among the NAS countries, that is above the average of the NAS indicated. About 7% of the Slovak respondents indicated that they did not use the Internet more than once a month.

The following part of our analysis is devoted to the comparison of usage of the Internet by its location (i.e. at work, at home, or somewhere else) in the European countries, the USA and Switzerland. The Slovak respondents use the Internet mostly at work or at somewhere else such as Internet Cafés. The usage of the Internet only at home comes only as the last option.

The combination "usage at home and at work" indicates a very low value in the Slovak Republic. As to this indicator, the Slovak Republic lags behind the average of the NAS-10 states.

An important indicator, which also characterizes readiness of respondents, is the amount of time spent at using of the Internet. We consider intensity of on-line usage as high if the time spent by using of the Internet exceeds 6 hours per week. Intensity of on-line usage is low if a respondent uses the Internet less than 1 hour weekly.

Internet users in the Slovak Republic mostly use the Internet in medium intensity of on-line usage, which equals to around 10%. On the 2<sup>nd</sup> position is low intensity, followed by high intensity in using the Internet.

Another type of survey (Source: the Ministry of Transport, Post and Telecommunications of the Slovak Republic) showed the highest density of households with connection to the Internet in Estonia (20%), the Czech Republic (17%) and in Slovenia (16%). According to this survey the Slovak Republic reports household density with connection to the Internet only 3%.

The usage of the Internet at home strongly correlates with the users' age in the NAS countries. The same tendency is evident also in the Slovak Republic, although more precise survey results are not available.

In general the youngest age group up to 24 years uses the Internet most intensively. This is affected by substantially better skills concerning work with PC as well as by their interest to gain more information via Internet. The respondents of the age group 25 - 49 years come next. The oldest age group (over 65 years) uses Internet the least.

As far as the mobile phones are concerned, in the NAS-10 countries there are around 43% of mobile phones owners. Mobile phone ownership is significantly affected by the age of users.

Young people in the age group up to 24 years use mobile phone communication considerably more often (62%) than people of the age group from 50 to 64 years. There are about 12% of mobile phone owners in the age group 65 and more. Young people use all the services of mobile phones. In the oldest age group the usage of advanced services is lower and this way of communication seems to be complicated for them.

In Slovakia the number of mobile phones per 1000 inhabitants has increased from 35.7 in 1997 to 399.2 in 2001. Largest increases were recorded in 1998 (+156%) and 2001 (+94%). (Source: The Statistical Office of the Slovak Republic.)

The use of SMS corresponds with the situation in the field of mobile phone ownership and depends on the users' age. The largest number of SMS users is in the youngest age group. In the age group up to 24 years 92% of mobile phone users use SMS; in the oldest age group it is only 30%.

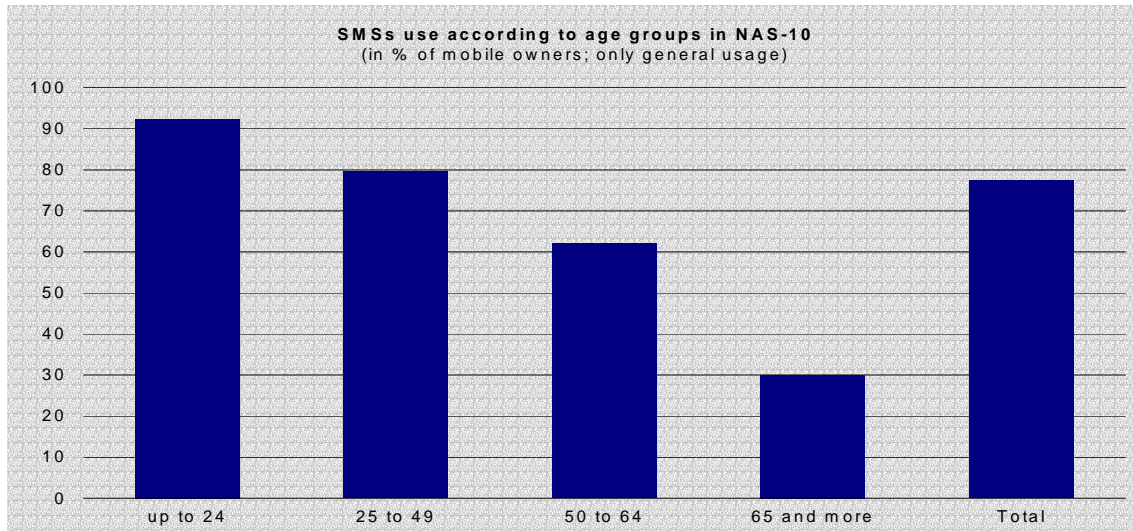


Figure 3: SMS use according to the age groups

Bases: mobile phone owners, weighted column percentages

Questions: A27

Source: SIBIS 2003, NAS-GPS

## 4.2 Security

Approximately 70% of regular Internet users in Slovakia are concerned about privacy and confidentiality over the Internet; about 60% are concerned about data security. Among the NAS-10 countries Lithuania, Poland and Romania stand in front of the Slovak Republic; Slovenia reaches approximately the same level. The average of the NAS-10 countries is 70%, EU indicates almost 80% on average. The inhabitants of the USA feel even more concerns about the protection of confidential data (almost 90%).

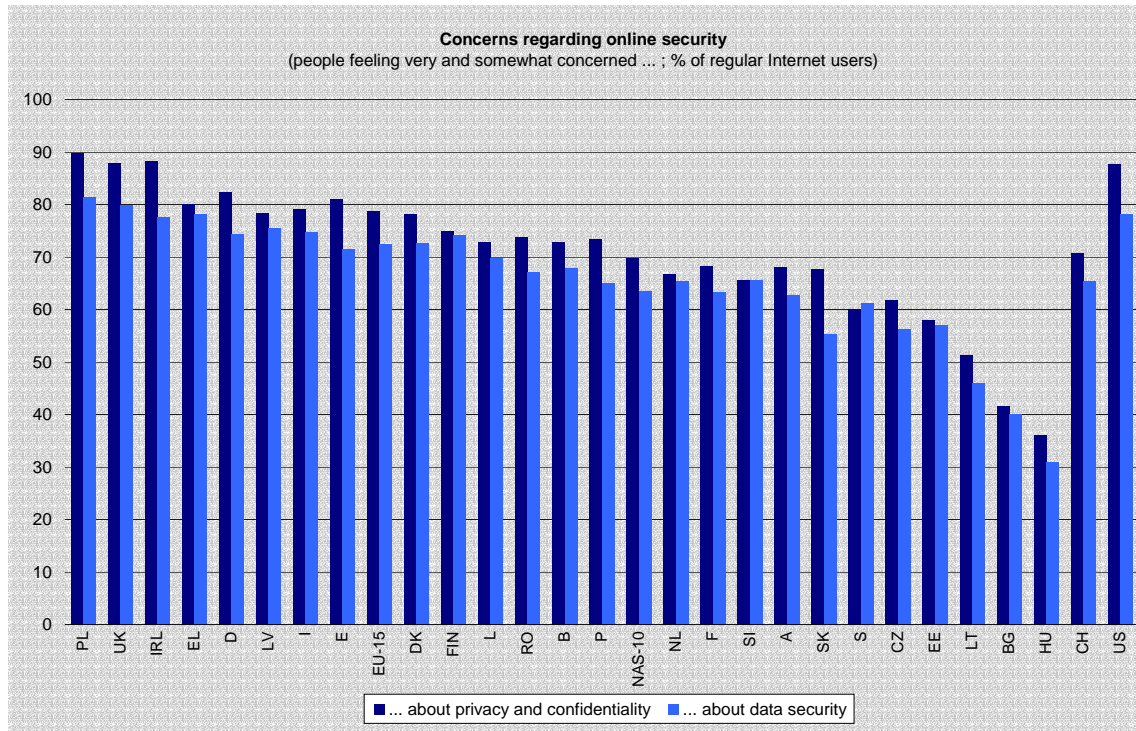


Figure 4: Concerns regarding on-line security

Bases: regular Internet user, weighted column percentages

Questions: J1a, J1b

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

## 5. e-Society and Social Inclusion

Main analyses of this Chapter are dealing with such various aspects of e-Society and Social Inclusion as are digital divide, education divide, barriers to Internet usage, website accessibility, etc. In this connection the following indicators from the SIBIS surveys in the EU-15 and NAS-10 have been included into the particular analyses:

- Digital Divide Indices (DIDIX) for total NAS-10
- Digital Divide Indices for total EU and NAS
- Education Divide Index
- Barriers to Internet usage: It requires advanced computer skills
- Barriers to Internet usage: Is not something for me
- Life without Internet: Would users feel socially excluded?

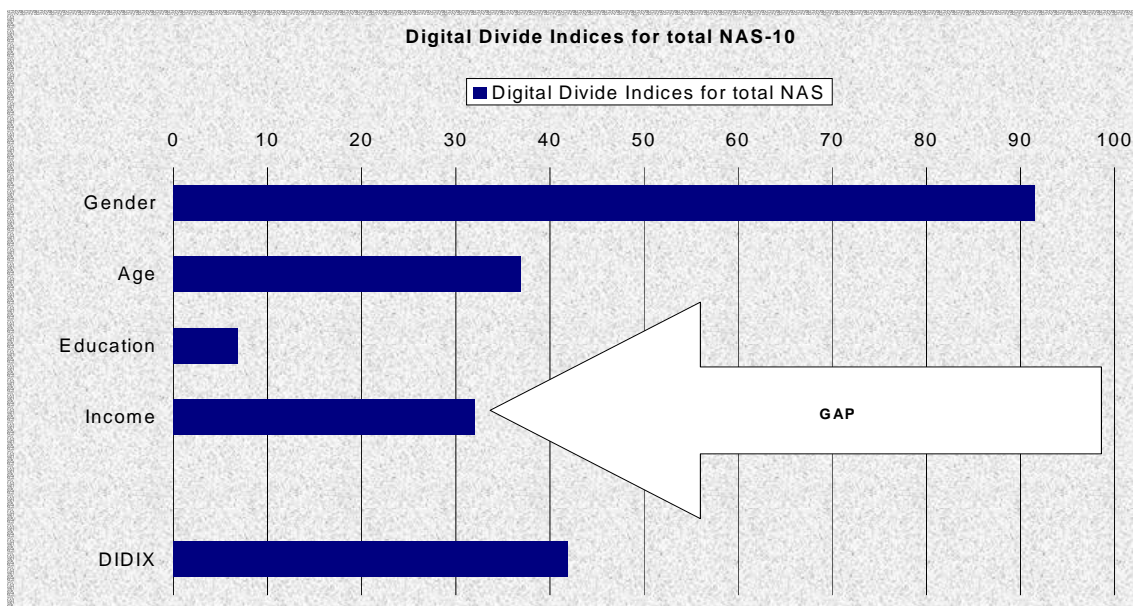


Figure 5: Digital Divide Indices for total NAS-10  
 Base: all respondents, weighted percentages  
 Questions: IN1, IN3, Z19, Z21  
 Source: SIBIS 2003, GPS – NAS

Main characteristics of the particular indices from the above Figure 5:

- DIDIX index (Comparison of disadvantaged group to total population: ratio of users) reached value 41.9 in the NAS-10 countries in 2003 and 44.4 in the Slovak Republic

By the individual subgroups:

- Gender Divide Index: relative gap (Comparison of women to total population: ratio of users) reached value 91.5 in NAS-10 countries in 2003 and 93.9 in the Slovak Republic
- Age Divide Index: relative gap (Comparison of 55+ to total population: ratio of users) reached value 36.9 in NAS-10 countries in 2003 and 32.5 in the Slovak Republic

- Education Divide Index: relative gap (comparison of low education group to total population: Average difference for indicators in percentage points) reached value 6.9 in NAS-10 and 32.5 in 2003 in the Slovak Republic
- Income Divide Index: relative gap (comparison of low education group to total population: ratio of users) reached value 32.1 in NAS-10 in 2003 and 29.0 in the Slovak Republic.

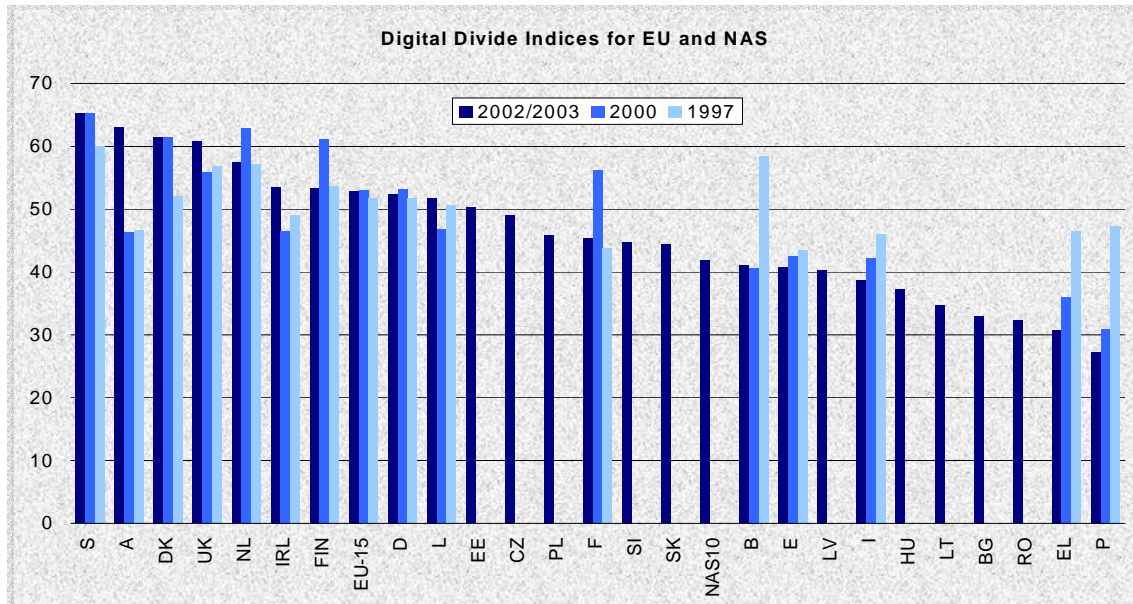


Figure 6: Digital divide indices for EU and NAS

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

The chart above that analyses indicator DIDIX2 - The Digital Divide Index - Composite Index: Gender, Age, Education, Income for EU-15 and NAS-10 countries for the years 1997-2000 and 2002/2003 suggests that the index in the Slovak Republic showed value 44 what is comparable with France, Poland and Slovenia, it is lower than the EU-15 average (53) but higher than the NAS-10 average (42).

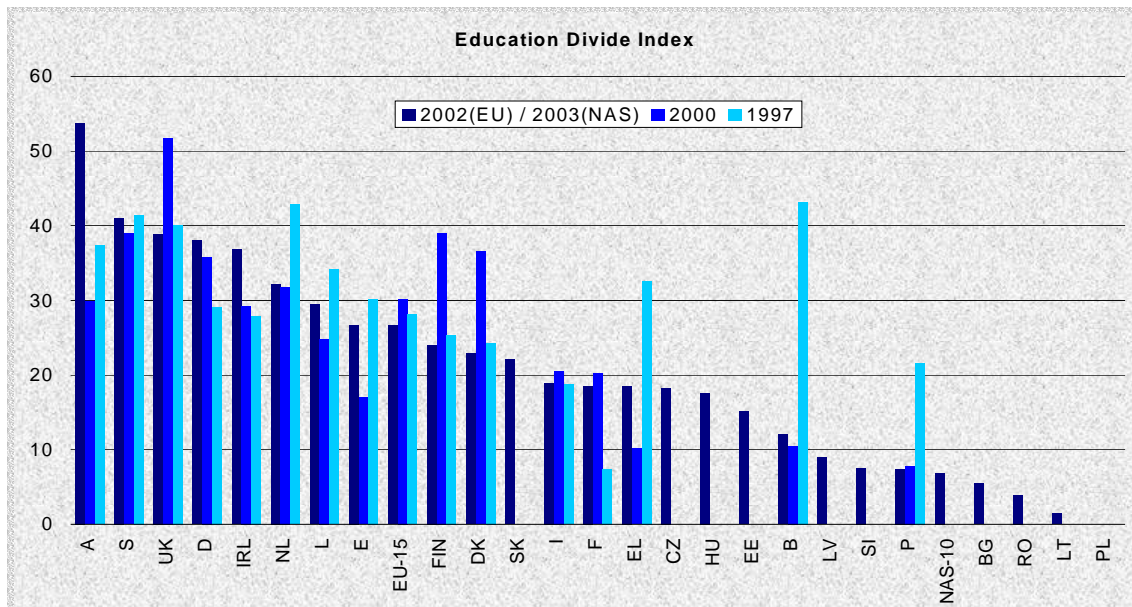


Figure 7: Education divide index  
 Base: 1997, 2000: N=15,900, weighted by standard Eurobarometer country and EU-15 weights; 2002, 2003: all respondents, weighted percentages  
 Questions: 2002, 2003: IN1, IN3, Z19, Z21  
 Sources: 1997: Eurobarometer 47.0, Jan-Feb 1997; 2000: Eurobarometer 54, Oct-Nov 2000; 2002: SIBIS 2002, GPS; 2003: SIBIS 2003, GPS – NAS

The chart above analyses indicator DIDIX5 – Education Divide Index for EU-15 and NAS-10 for the years 1997, 2002 EU-15 countries and 2003 NAS - 10 countries shows that the index in the Slovak Republic achieved the value 22.1 that is comparable with Finland and Denmark, lower than the EU-15 average (by 5) but 3.2 times higher than the NAS-10 average (6.9).

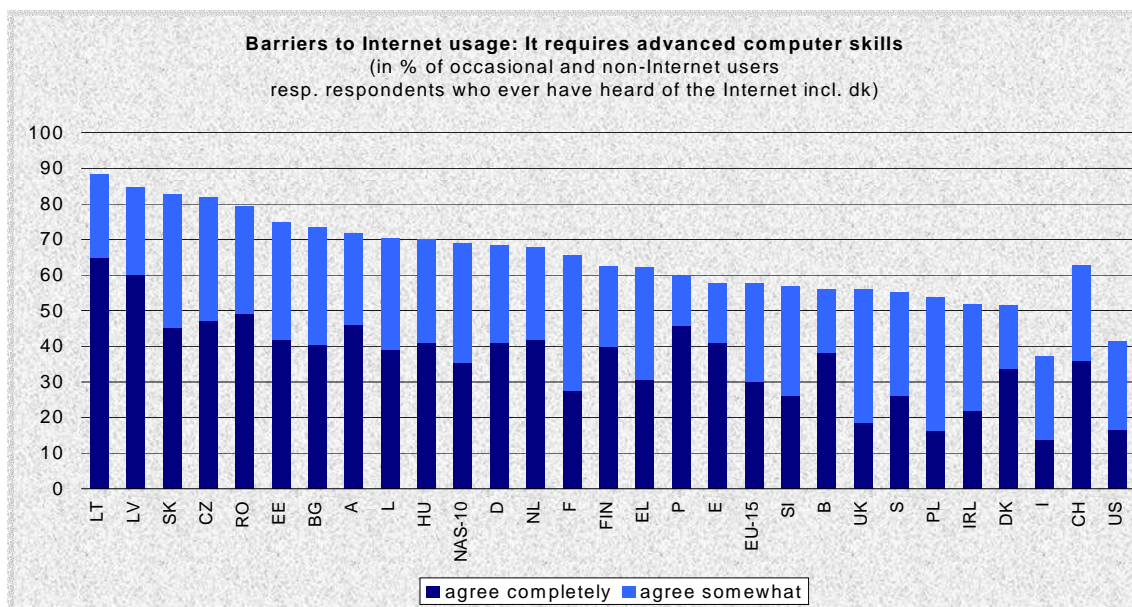


Figure 8: Barriers to Internet usage regarding computer skills  
 Bases: EU-15 countries: occasional and non Internet users; NAS-10 countries: respondents who ever have heard of the Internet (incl. don't know); weighted column percentages  
 Question: A18\_a  
 Source: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

The chart above analyses the indicator ‘Barriers to the Internet usage from the point of view that it requires advanced computing skills (in percentage occasional and advanced users)’ and it suggests that with the statement ‘agree completely’ would agree 45.3% in the Slovak Republic, on average only 35.4% in NAS-10, around 30.2% in EU-15. With the statement ‘agree somewhat’ would agree 37.5% in the Slovak Republic, 33.5% in NAS-10, 27.6% in EU-15.

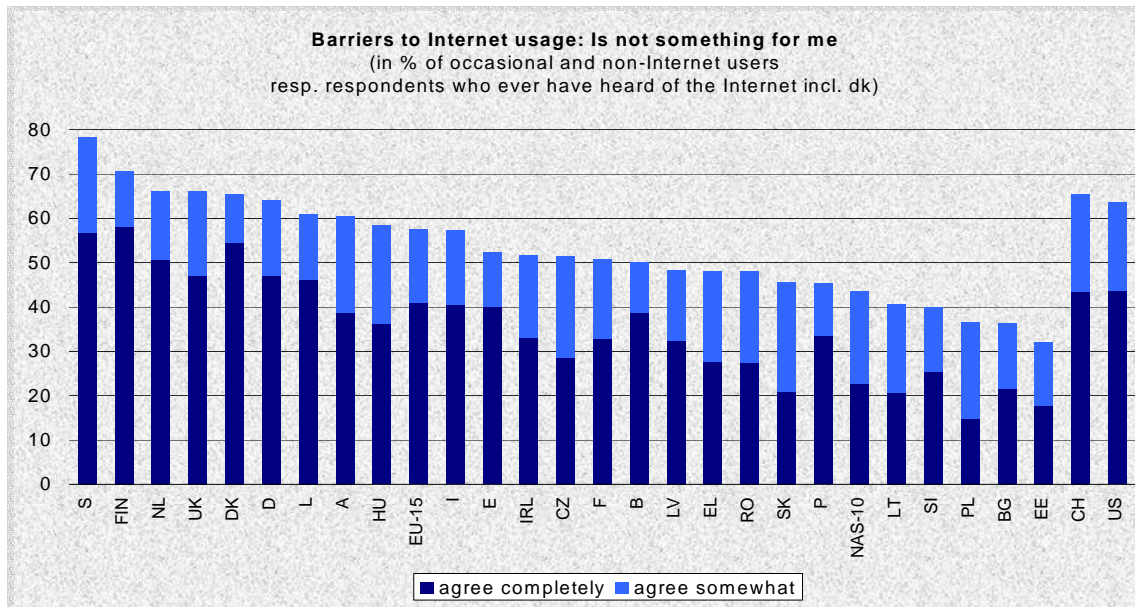


Figure 9: Barriers to Internet usage regarding personal indifference  
 Bases: EU-15 countries: occasional and non Internet users; NAS-10 countries: respondents who ever have heard of the Internet (incl. don't know); weighted column percentages  
 Question: A18\_f  
 Source: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

The above chart analyses indicators on ‘Barriers to Internet usage – is not something for me (in percentage occasional and non -internet users)’ shows that with the statement ‘agree completely’ would agree in the Slovak Republic 20.8%, in NAS-10 countries 22.8% on average, on average 41% in EU-15 and least in Poland (15%). With the statement ‘agree somewhat’ would agree in the Slovak Republic 24.8%, 20.9% in NAS-10, around 16.6% in EU-15.



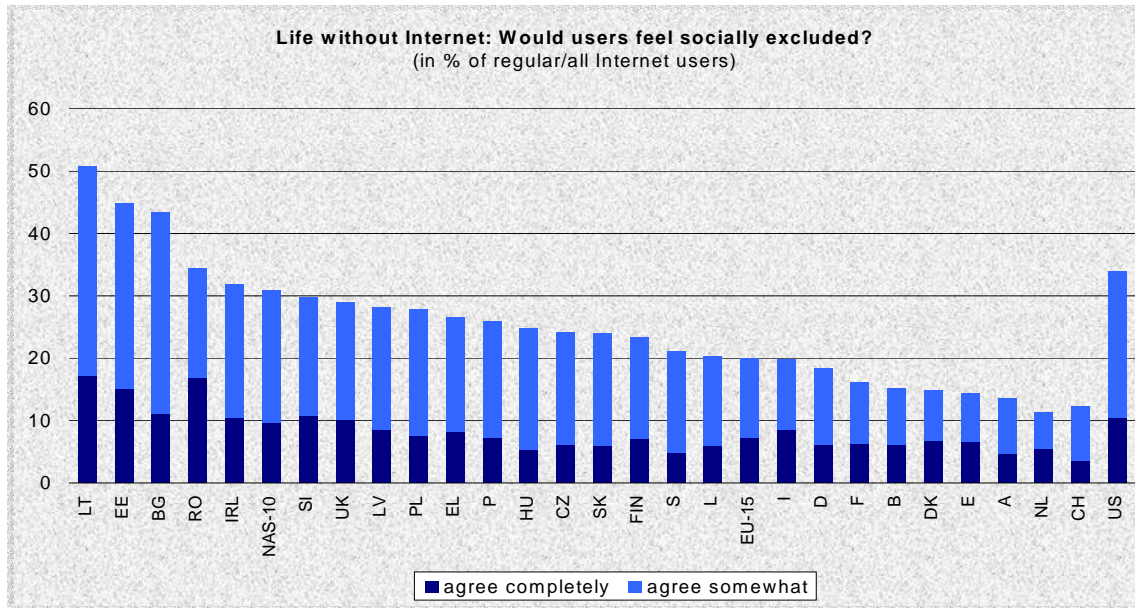


Figure 10: Life without Internet

Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users

Question: B5b

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

Chart above analyses indicators 'Life without Internet: would users feel socially excluded? (In percentage regular/all internet users)' shows that with the statement 'agree completely' would agree 6.1% in the Slovak Republic, 9.6% in NAS-10, on average 7.3% in EU-15. With the statement 'agree somewhat' would agree 18% in the Slovak Republic, 21.2% in NAS-10, around 12.7% in the EU-15.



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

This chapter is dealing with the results of analyses of several aspects of e-Education as e.g. digital literacy, skills in using computers via Internet, skills in using e-mail as well as with skills in identifying information on Internet and in using search machines.

In the information society digital literacy is as important as reading and writing. Digital literacy is here defined as ability to communicate digitally, find and install software, identify information sources, select among the huge amounts of information available and find information at the Internet. The Digital literacy indicates the readiness of the population to use the Internet for work and to become active participants in the information society. As far as the Digital Literacy in countries of EU in comparison with the Slovak Republic is concerned it has to be taken into account that the level of digital literacy varies strongly also within the countries of the EU, measured by the COQS index (running from 0 to 3 with a full digital literate population). In the EU the national scores varies between 0.5 and 1.4, with 0.8 as average.

Unfortunately, the level of Digital Literacy measured by the COQS index in the Slovak Republic can only be estimated to be similar to Greece and Portugal with the index of about 0.4.

In general, the skills at communicating via the Internet currently belong among the main, dominating skills in using computers.

The Internet is built to communicate. The ability to communicate with others via the Internet is one of the basic skill in Europe as an Information Society.

The level of skills at communicating via Internet in Slovak Republic reaches 27% including e-mails, Internet chat and personal web pages, it is 8% higher than at NAS-10 (19%) but 18% lower than at EU-15 (44%).

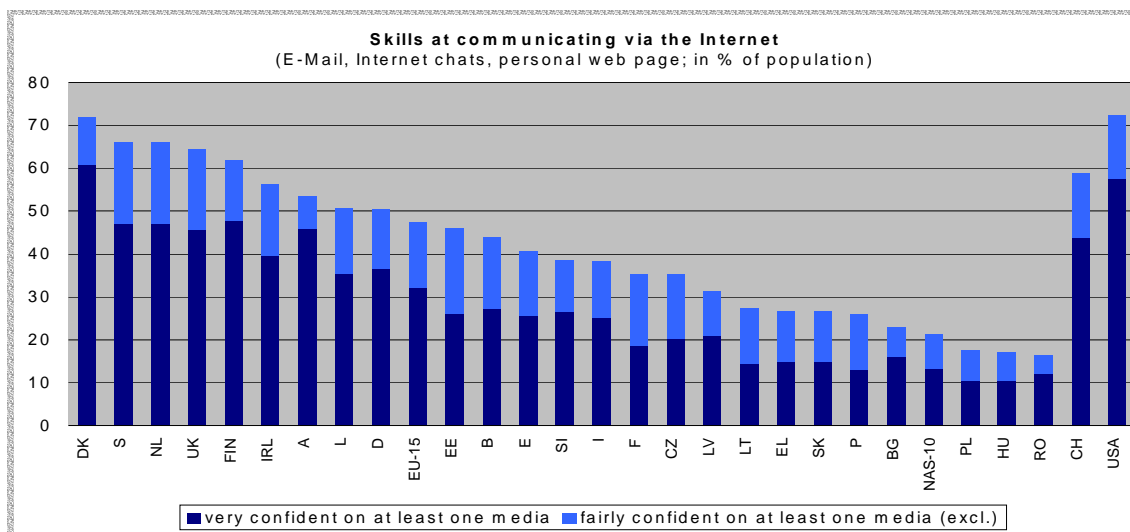


Figure 11: Internet communications skills

Bases: all respondents, weighted column percentages

Question: D1c, D1d, D1f

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

The communication via e-mail uses to be carried out in most cases at jobs or schools in the Slovak Republic. Europe average of skills by using e-mails is 47% with very high confidence

and fairly confidence together, the level of skills in the Slovak Republic lays about 26 andl is by 5% higher than the average of NAS-10.

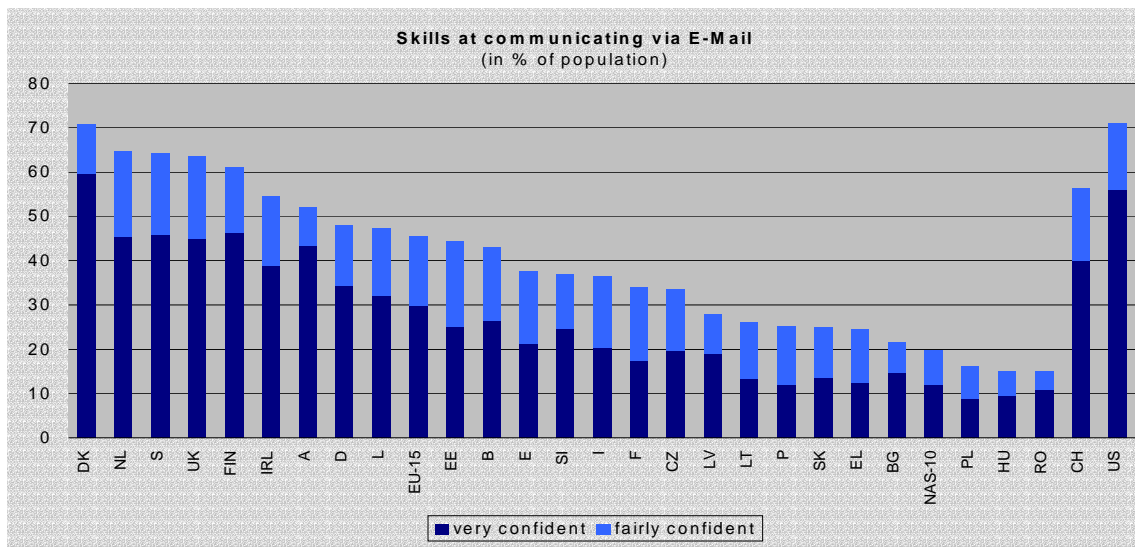


Figure 12: E-mail communication skills  
 Bases: all respondents, weighted column percentages  
 Question: D1c  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

An Information Society often uses the Internet as a medium to communicate. One of the ways to achieve that is also creating a personal Internet page. The Slovak Republic belongs in this respect to the lower half of level of skills at creating a personal Internet sites with theirs 10%, while average level of EU-15 is 13%. The main reason is that except students and fresh graduates nobody else is able to demonstrate this skill in practice.

Especially students from secondary schools in the Slovak Republic often use their skills at creating personal Internet pages, which represent their class or school, although absence of skilful teachers can be observed.

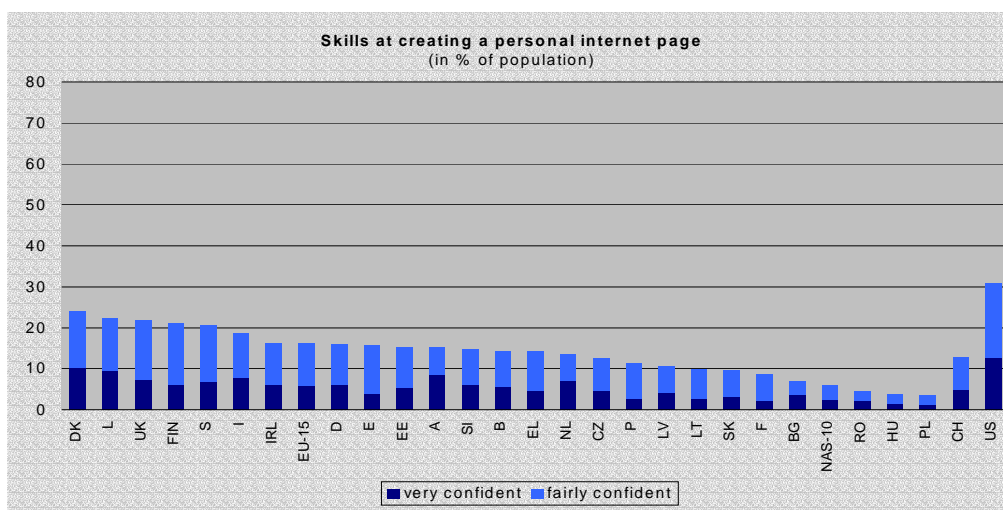


Figure 13: Internet page creating skills  
 Bases: all respondents, weighted column percentages  
 Question: D1f  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

The skill in identifying information on Internet is one of the most critical as it helps in selecting proper information among huge amounts of information on the Internet. The first step is to identify the source of information. This skill means some kind of confidence in identifying the source of information on the Internet.

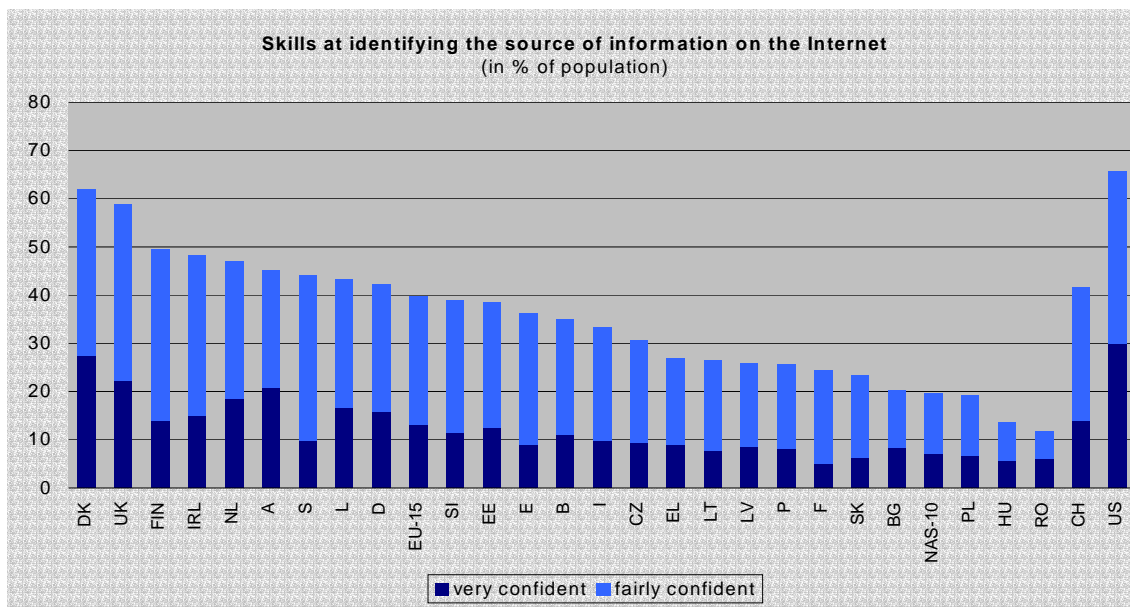


Figure 14: The skills at identifying source of information

Bases: all respondents, weighted column percentages

Question: D1b

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

In order to use the Internet effectively, one should be able to search – and find - the needed and required information on the Internet. This is to the much extent demonstrated as a confidence in using an appropriate search engines to find requested information. In this connection in the Slovak republic the most experienced users are at schools among students and teachers Students use search engines as a part of e-Learning what means using study materials, downloaded files, or searched information from the Internet, which need students or pupils to their study.

Unfortunately data on the Slovak Republic are not available yet, but in accordance with general opinion about 40-50% of students in the Slovak Republic are using PC in their studies in searching materials, using search engines, downloading or installing software and searching required information. This applies for students at both universities and high schools. In general it means that in this respect the Slovak Republic is on the level of the EU-15 average. However, the main difference is that there are not so many special national study web sites as in the countries of the EU-15.

One of the exemptions to this unfavourable situation is the INFOVEK Project that started in 1999 as an initiative to prepare the young generation in Slovak Republic for the life in the future information society of 21<sup>st</sup> Century. It involves building adequate hardware infrastructure at the schools, preparing of teachers to be able to apply these modern information-communication technologies on school instruction.

Sofar under the framework of the INFOVEK Project approximately 500 schools by the end of year 2002 have been connected to Internet what is about 14% of the total number of schools in Slovak Republic. The progress of the project in this respect has been mainly hampered by the lack of funding connection the Slovak Republic shows 27%.

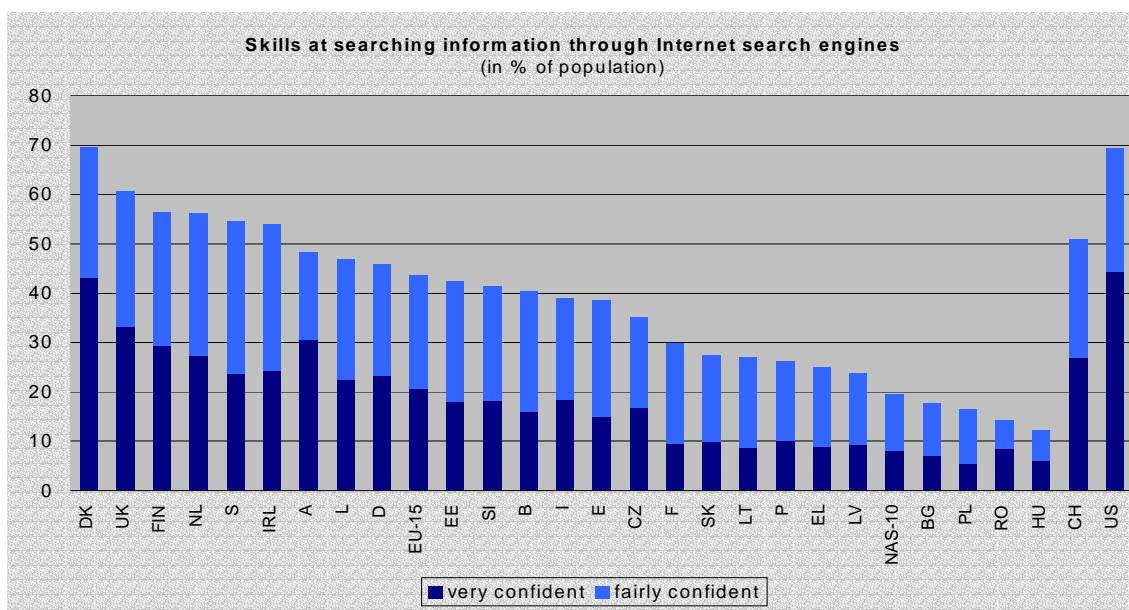


Figure 15: Skills in using searching engines

Bases: all respondents, weighted column percentages

Question: D1a

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

Important structural changes that have taken place in the Slovak economy in the period of transition from a centrally planned to a market economy also have modified the job opportunities together with the qualification demands. Insufficient relation between the education system and labour market has a negative impact on the development of unemployment in the Slovak Republic towards its increasing.

Social and economic changes arouse the significant reform in the education and training system that covers formal and also informal education, including lifelong learning. The rising importance of lifelong learning in connection with the labour market demands creates the new tasks for the statistical monitoring of this form of education.

According to the survey results, the share of persons in lifelong learning in total labour force in the Slovak Republic was 18.3%. This figure indicates quite high level mainly in comparison with other NAS-10 states. Within the NAS-10 the Slovak Republic together with Slovenia reported the considerably highest share which is by 8.4 percentage points more than the NAS-10, but by 4.3 percentage points less than the EU-15 average.

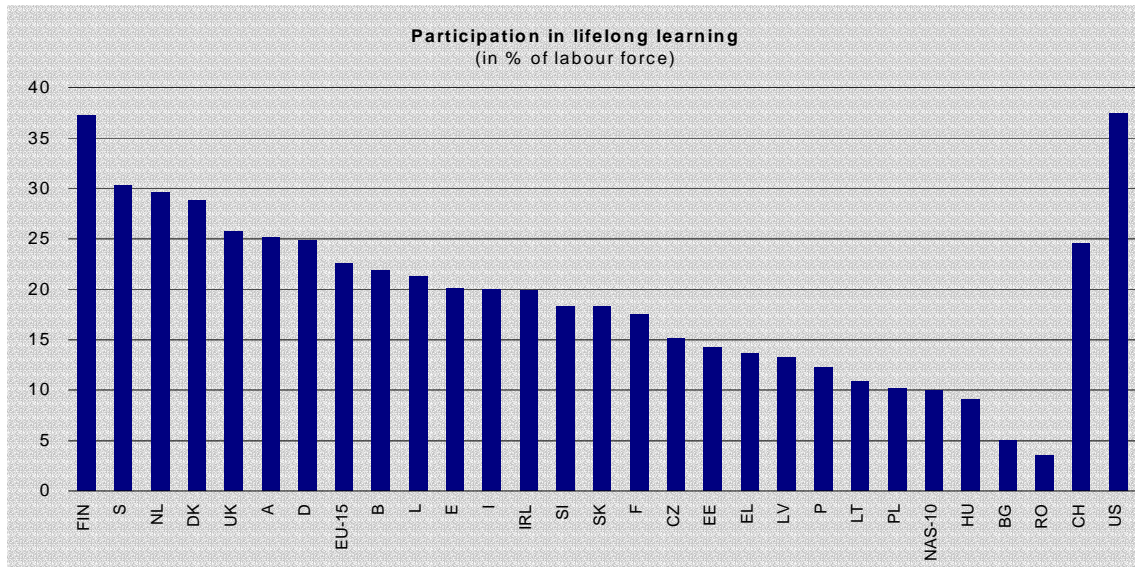


Figure 16: Participation in lifelong learning  
 Bases: Labour force; weighted column percentages  
 Questions: C2, C9b  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

The Slovak Republic held also the first position within the NAS-10 countries in the field of self-learning in which almost reached the EU level of 31.7%. Available data suggest that 31.3% of economically active respondents in the Slovak Republic practised the self-directed learning during the last 4 weeks preceding the survey. On the NAS-10 average the share of people with self-directed learning in total labour force lies at 13.6%. The Slovak Republic with a value by 17.7 percentage points higher than the NAS average is followed by the Baltic States, Estonia and Latvia, with shares of about 29%. At the other end of the spectrum, in Poland, Hungary and Bulgaria the share was below 10%.

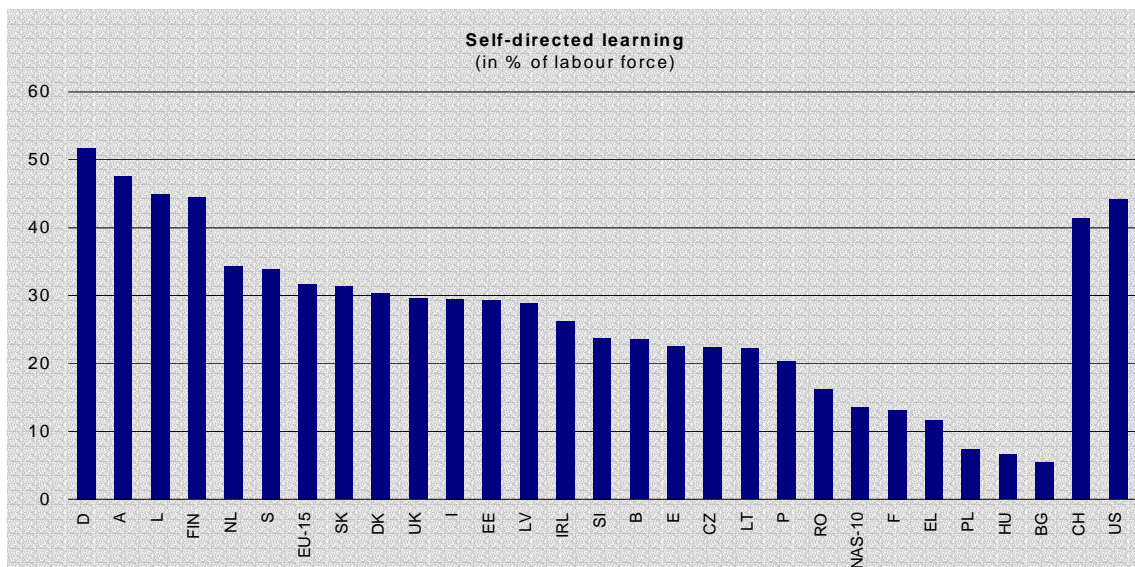


Figure 17: Self-directed learning  
 Bases: Labour force, weighted column percentages  
 Questions: C14a, C14b  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

The data concerning the e-learning reflects the using of information and communication technologies in the economy as a whole. Again, as in the case of teleworking and tele-cooperation, insufficient IT equipment (especially in educational institutions and households) and expensive access to the Internet in the Slovak Republic determine the very low share of e-learning in the total labour force. According to the survey results, the share represents only 6.7%, but it still lies above the NAS-10 average by 1,2 percentage points. Estonia, as the country with the highest share of 13.5% within NAS-10 countries, exceeded the Slovak Republic doubly.

## 7. e-Economy and e-Commerce

The main themes of this chapter are analyses of the situation in the Slovak Republic regarding e-Economy and e-Commerce as important factors of the modern contemporary market economy. In this respect e-Commerce is a new, rapidly developing domain of the Information Society. It represents one of the preconditions for enhancing competitiveness of the Slovak economy with potential to create jobs and to stimulate economic growth. Strengthening of competitiveness, cost minimisation, rapidity, efficiency and interactivity belong among the most significant merits of e-Commerce.

The development of e-Commerce in the Slovak Republic is only in its beginning. Limited access to the necessary infrastructure (uneven distribution of personal computers across households, low usage of the Internet in enterprises and households due to its high charges and price of computer technology), high investment costs (high prices of software), lack of complex approaches to e-commerce, and, finally, distrust to the Internet are main reasons of the slow development.

According to estimates, there are at present around 120 active Slovak virtual shops that sell products and services via the Internet. Contrary to the EU, it is mainly B2B (Business to Business) commerce, however, the final trading phase i.e. invoicing and payment are mostly performed in a traditional way. Although e-Banking has already also been available in the country, there has still been some lack of confidence in using these modern banking services to the full of the existing potential.

In general the Slovak users of the Internet show great interest in e-services, as confirmed also by the Survey on interest in new services of the Information Society conducted in September 2000 by the Research Institute of Communications within the project of Information Society in the Slovak Republic. The Charts below give a picture on respondents' interest in e-Banking (administration of banking accounts via the Internet, economic information and consultations), financial and insurance counselling via the Internet, buying via the Internet, consumer counselling and e-tourism (travel agencies' offers, orders, reservation of travel tickets).

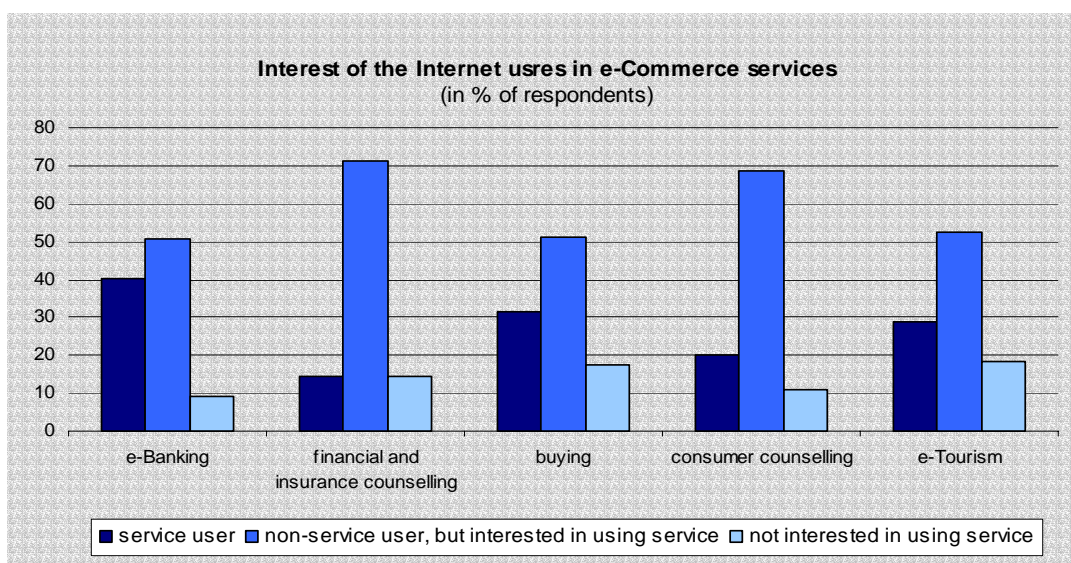


Figure 18: Interest of the Internet users in e-Commerce services

Base: (N=450)

Source: Research Institute of Communications: 'Survey of the Information Society in the Slovak Republic, 2000'

As regards the rate of e-Commerce users to total population, comparison of the Slovak Republic with other NAS-10 countries suggests that the Slovak Republic shows 1.2% more e-Commerce users than the NAS-10 average. In comparison with the EU-15, NAS countries show a significant lagging behind in using of e-Commerce. In the Slovak Republic, e-Commerce is used by only 15.5% of Internet users while in EU-15 by 36.3% on average.

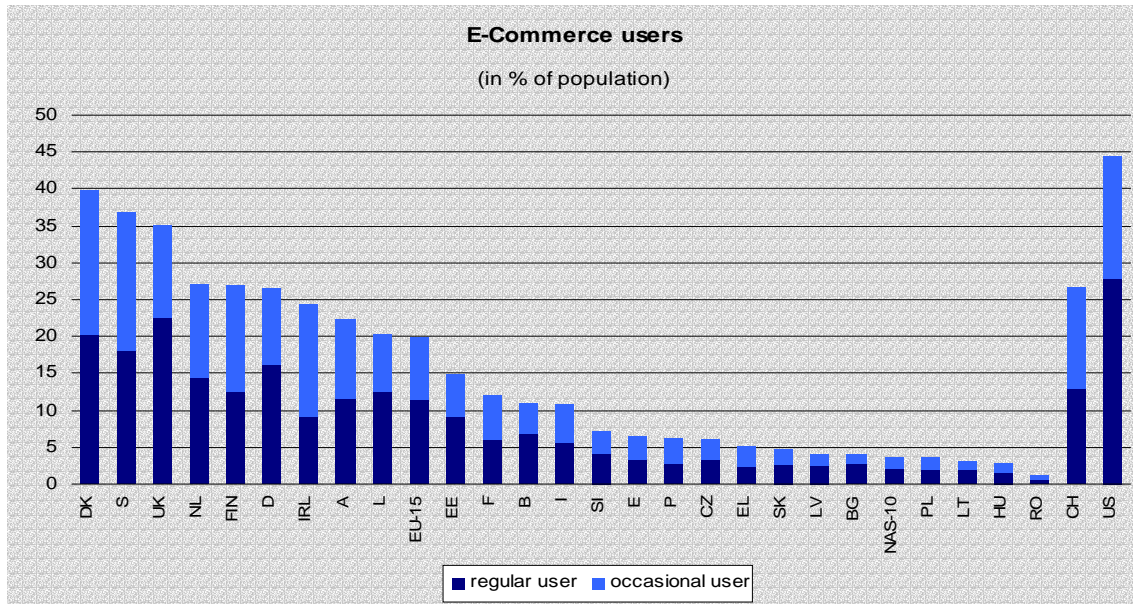


Figure 19: E-commerce users

Bases: all respondents, weighted column percentages

Questions: B1, B2

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

According to the age groups, similarly like in the EU-15, the vast majority of e-Commerce users (approximately two thirds), in the Slovak Republic and the NAS countries belong to the age group 25-49 years. Difference is in proportion of young people up to 24 years in which the Slovak Republic lags behind. On the contrary, the Slovak Republic shows higher proportion of e-Commerce users aged 65 and more (3.6%) which puts it in the fifth place among all the countries indicated in respective chart. The main reason for that could be that also more senior teachers and employees are using e-Commerce from their work places.



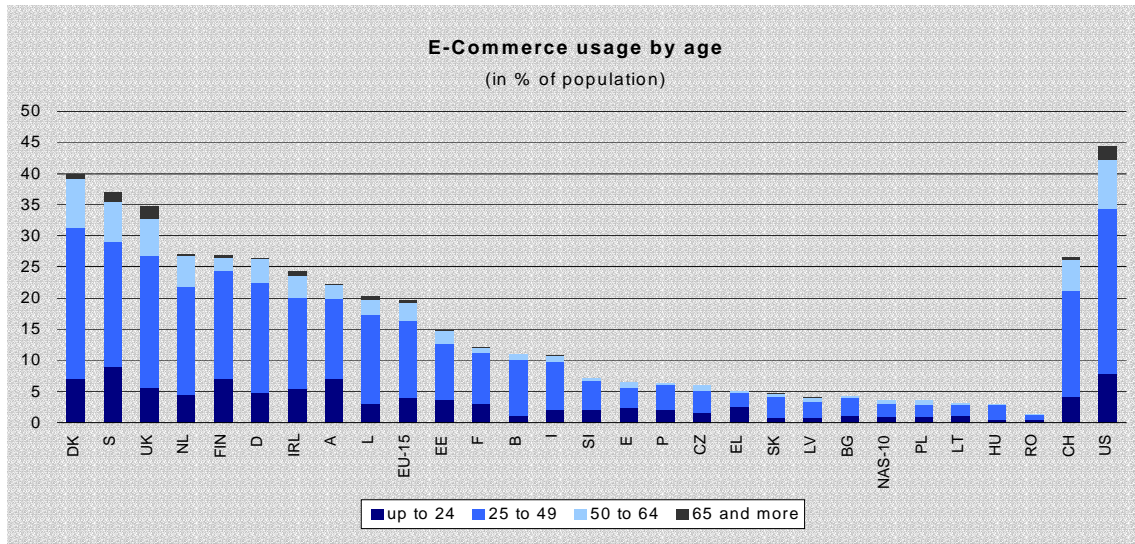


Figure 20: E-Commerce usage by age  
 Base: all respondents, weighted column percentages  
 Questions: IN1, B1  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

As regards the rate of “Online interactive buyers” i.e. people who have ordered a product or a service, or have conducted on-line banking or bought financial products’ to the total population, the Slovak Republic is in the sixth place among NAS-10 countries, but still 1.2% over the NAS-10 average.

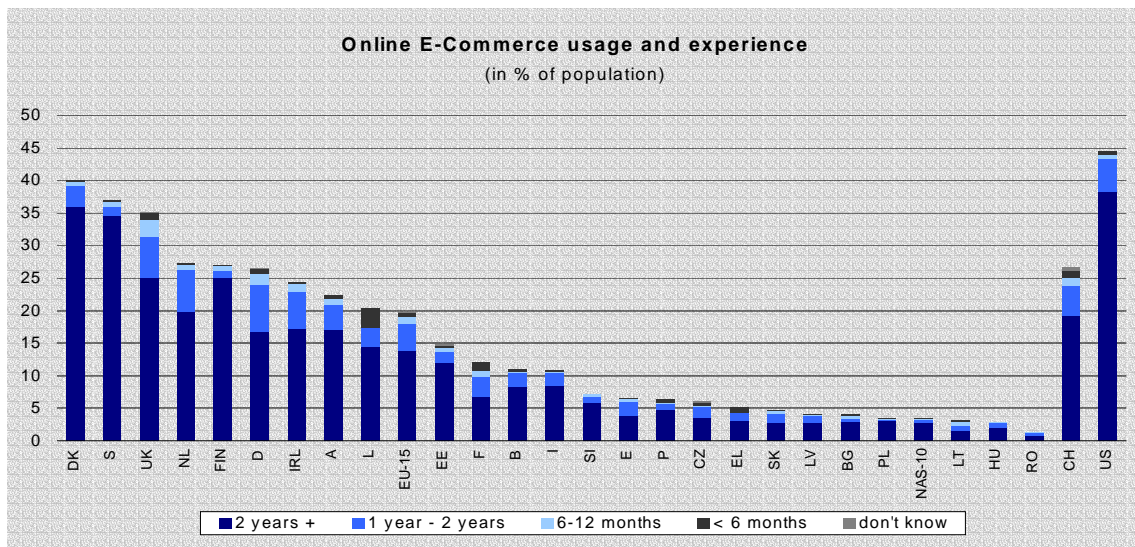


Figure 21: on-line E-commerce usage  
 Base: all respondents, weighted column percentages  
 Questions: B1, B2  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

Among the main reasons for the Slovak Republic lagging behind the EU are low rate of computers in households and their Internet connections (mainly as a result of low purchasing power of population), an insufficient legislation, low supply of products (except for e-Banking) and mistrust.

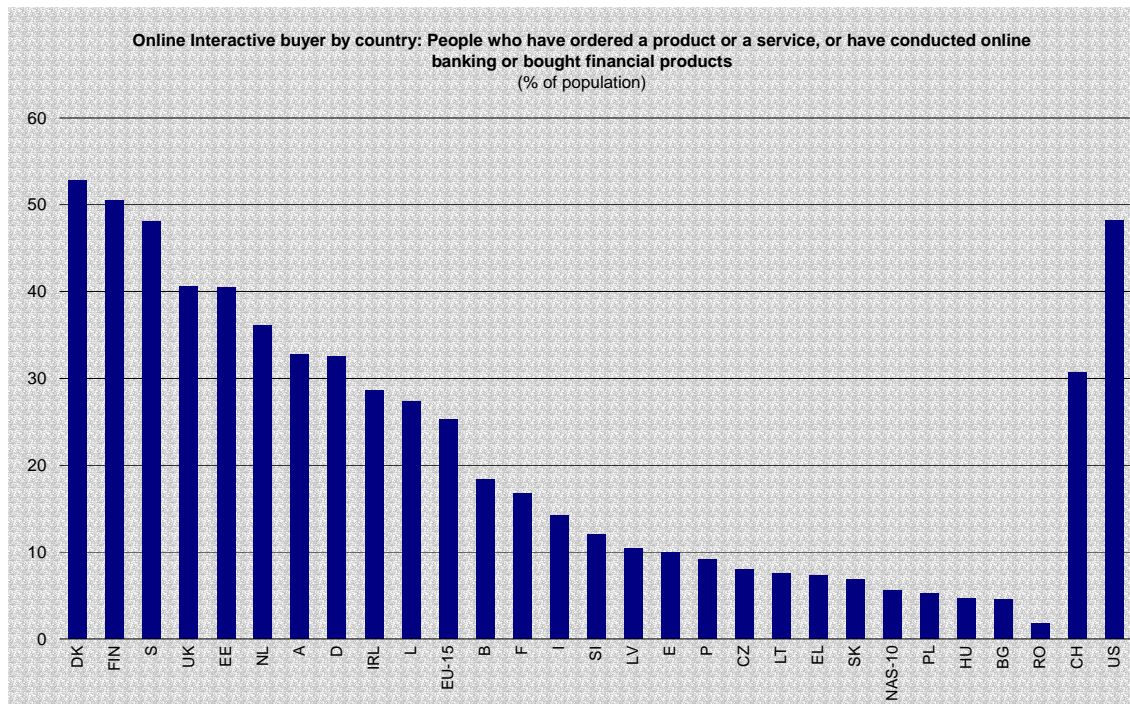


Figure 22: on-line interactive buyer by country  
 Base: all respondents, weighted column percentages  
 Question: B1  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

## 8. e-Work

This chapter deals with one of the most important sectors in the Slovak Republic viz. e-Work as a new form that could help at least partially very serious problems of the country in employment respectively in the very high unemployment.

The changes taking place in the development of the economy of the Slovak Republic have found its reflection also in the development of employment. Besides restructuring of economy within the transformational process of the economic system the development of employment and unemployment in the Slovak Republic was affected also by the demographic factor of high growth of population in productive age.

In general, the period of 1996 – 2000 was characterized by a systematic decrease of employment from 2,224.5 to 2,101.7 thousands employed persons in 2000. In view of this unfavourable development and very high unemployment of almost 20% various ways and means have been searched in order to help in solving this very complex situation. It is clear that various forms of e-Work have also been introduced and explored in this respect.

### Teleworking

By combining telecommunication services with working on computers we in principle get the substance of the teleworking. Unfortunately, again using of information and communication technologies in the field of teleworking i.e. when employees carry out all or part of their work at home and transfer the product of the work to the employer by means of ICT still does not belong among the frequent forms of work organization in the Slovak Republic. Besides preferring the traditional patterns of work in the Slovak labour market, one of the main reasons is also inaccessibility of ICT for employees again mainly due to the high prices of ICT, high charges for telecommunication services, etc.

According to the result of the particular SIBIS survey only 0.9% of persons in employment used the home-based teleworking in the Slovak Republic. The comparison with other countries shows the similar low level of using of teleworking also e.g. in Hungary, Romania and the Czech Republic among the NAS-10 countries but also in Portugal, Spain and Italy among the EU-15 ...

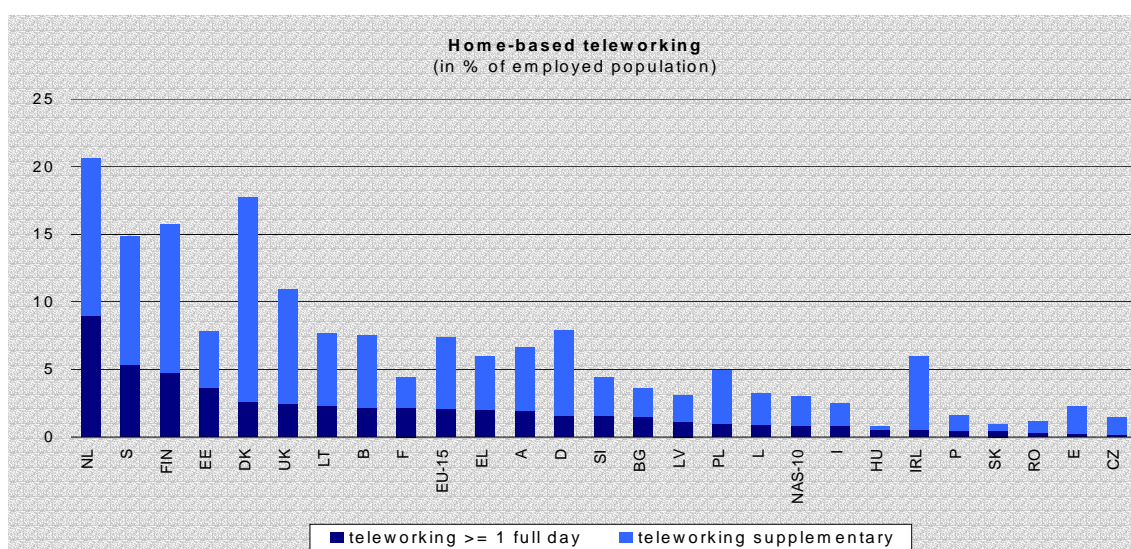


Figure 23: Home based teleworking

Base: All persons employed, weighted column percentages

Questions: E1, E3, E4

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

In spite of an unfavourable situation in the real usage of teleworking in the Slovak Republic, a lot of employees in the country would appreciate this form of work. 76.5% of respondents in employment (including current teleworkers) are interested in at least one type of telework. As we have already mentioned it, it is mainly due to the very high level of unemployment, what makes people more interested also in new, non-traditional ways and means of employment.

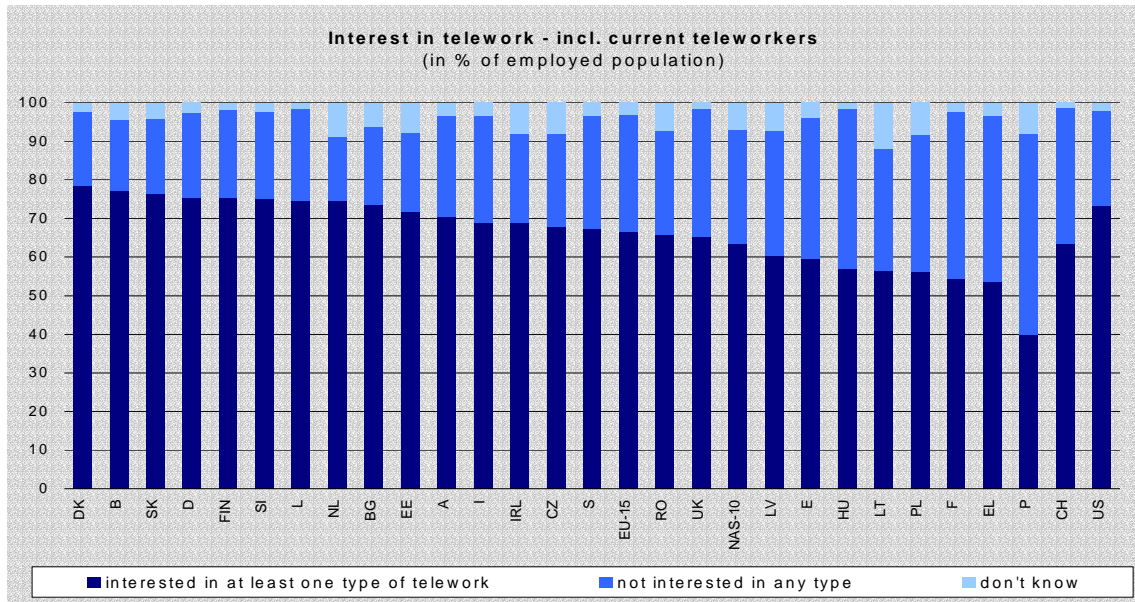


Figure 24: Interest in telework  
 Base: All persons employed, weighted column percentages  
 Question: E8  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

Concerning the job feasibility in teleworking, the situation in the NAS-10 countries again is not uniform. The Slovak Republic reached the share of a little over 20%, the share in the most of remaining NAS-10 countries oscillated around 13%.

In the Slovak Republic the share was by 6.3 percentage points higher than in the NAS-10 countries in total, but by 11.1 percentage points lower than in the European Union.

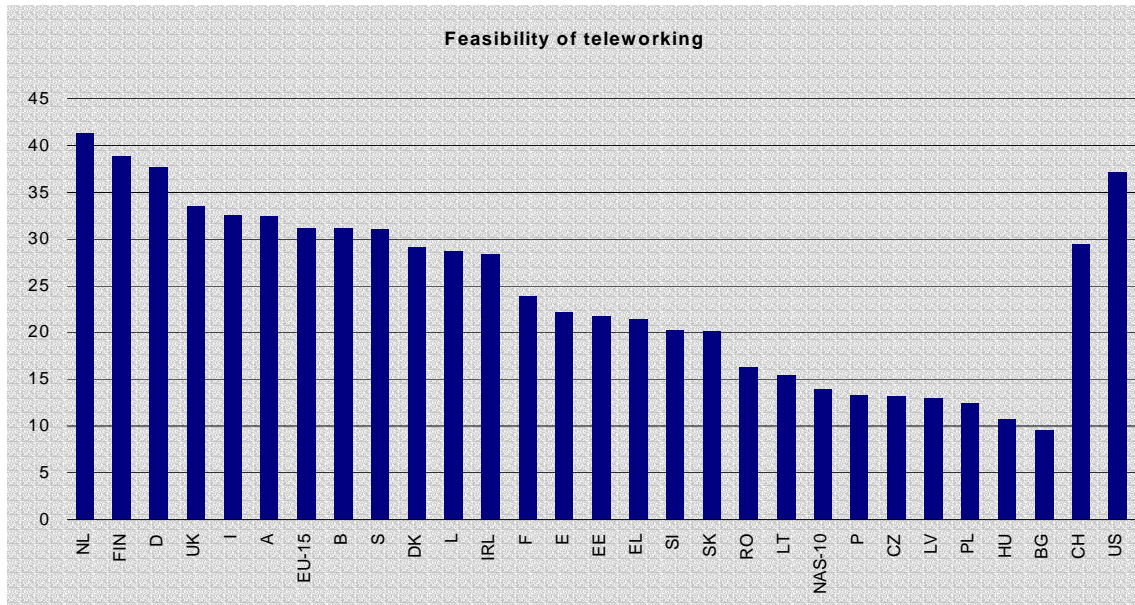


Figure 25: Feasibility of teleworking  
 Base: All persons employed, weighted column percentages  
 Question: E9a  
 Source: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

The next monitored form of teleworking was a mobile telework. SIBIS defines mobile teleworkers as those who spend 10 hours per week or more away from their home and their main place of work and make use of on-line connections while doing so. As the survey results show, in the Slovak Republic the situation in usage mobile in comparison with home-based teleworking - where the share was extremely low - is a little bit better, 1.9% of employed population use mobile connection when travelling.

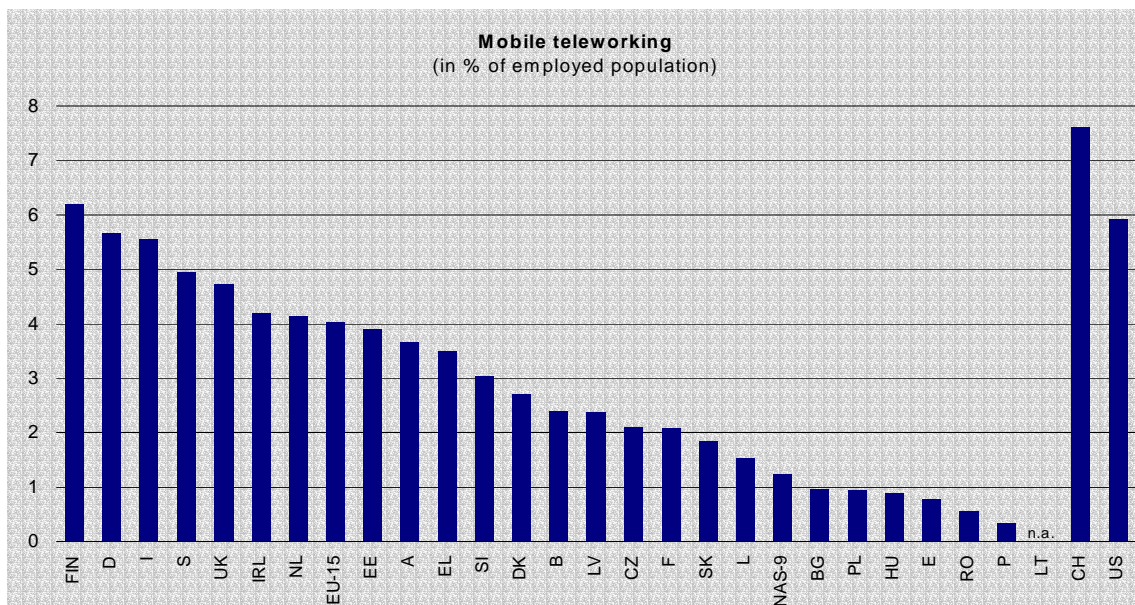


Figure 26: Mobile teleworking  
 Base: All persons employed, weighted column percentages  
 Questions: F1, F2  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

A characteristic feature of employment in the Slovak Republic is very low flexibility in the field of application of the new models of working organisation; in particular models based on the

new information and communication technologies. This is affected by the level of using ICT in generally and also by the limited possibilities to use these technologies – especially the Internet – at home. On the other hand, the survey results signalise that a lot of employed persons perceive the advantages of teleworking and they are ready to accept any type of telework and that could positively effect the development of teleworking and thus also the whole employment in the Slovak Republic in the future.

As far as the tele cooperating is concerned, it covers persons using e-mail, video-conferencing or electronic data transfer when communicating with external contacts. Within the ongoing process of worldwide economy globalisation intensity of cooperation has been rapidly rising. With regard to increasing demand for contacts on a global scale, a tele-cooperation began to play a key role in modern economics. However, level of this type of cooperation is still low in the Slovak Republic. It reflects less IT equipment and insufficient know-how in the Slovak firms and households. Progress has been made in central bodies of state administration, which use tele-cooperation particularly within the integration process to the European Union. Situation is getting better step-by-step also in companies, which use Internet for doing business effectively with lower expenditures and spared time.

In general, only 14% of employed population in the Slovak Republic use tele-cooperation what is by 24 percentage points lower than the EU-15 level.

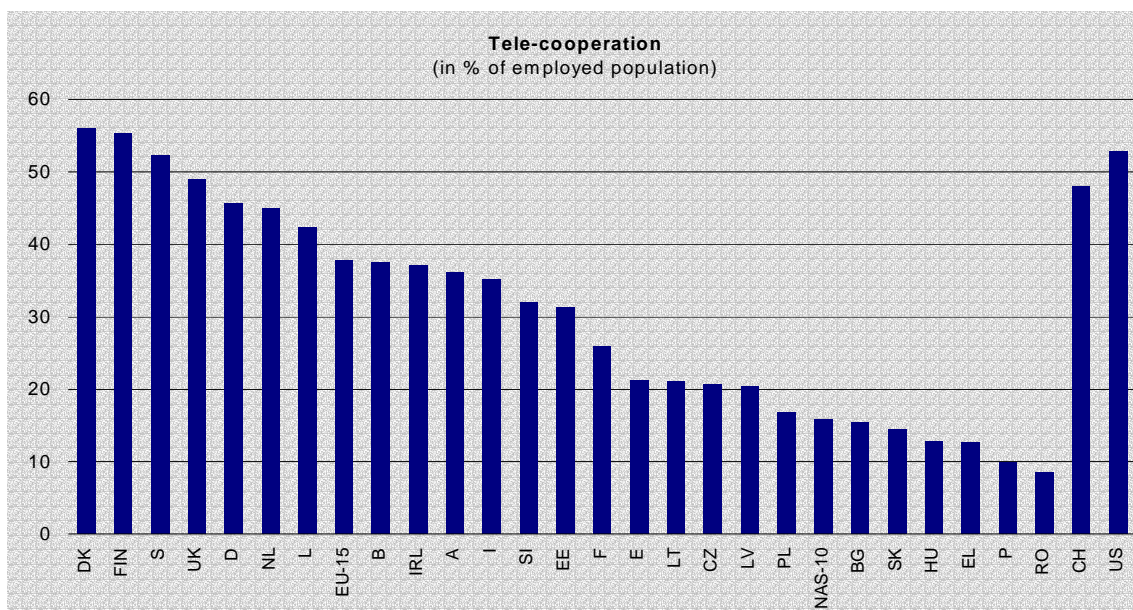


Figure 27: Tele-cooperation

Base: All persons employed, weighted column percentages

Questions: A1, G1

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

## 9. e-Government and e-Health

This chapter is dealing with the results of analyses of the situation in using modern ICT in various agendas of the Government of the Slovak Republic. The Government of the Slovak Republic has also officially accepted the initiative eEurope+ (June 2001) and committed itself to fulfil tasks resulting from informatisation of public administration as one of the eEurope+ priority domains.

The purpose of informatisation of public administration in the Slovak Republic is to facilitate access to information and to provide the general public and economic subjects with public administration services in the electronic form by creation of environment for electronic communication between the state and the public.

Basic public services within 'Strategy for Informatisation of Society in the Slovak Republic' under preparation comprise 12 indicators for persons and 8 indicators for legal entities.

The basic public on-line services for persons involve:

- Income taxes (tax declaration, property declaration)
- Job search services
- Social security contributions (unemployment benefits, children's allowances, health care expenses, students' grants)
- Personal documents (identity cards, passports, drivers licenses)
- Registration of motor vehicles
- Application for building permit (planning application)
- Declaration to the police (thefts, offences, payments...)
- Public libraries (catalogues with various modes of book searching)
- Certificates (birth certificate, marriage certificate,...)
- Enrolments in secondary schools and universities
- Announcement of change of address
- Health services (interactive counselling about availability of services in hospitals, ordering place in hospitals)

However in the practical implementation of all the above areas has not been so far achieved the expected progress. So far, e.g. citizens in the Slovak Republic can fill the income tax return via the Internet. This fact enables respondents to meet a fixed deadline for filling the income tax return. However, a disadvantage here is that tax offices subsequently require sending of the filled-in standard income tax return by post. This evident multiplicity is then also one of the reasons why most of citizens do not use the Internet for these purposes as it means in principle just a double work.

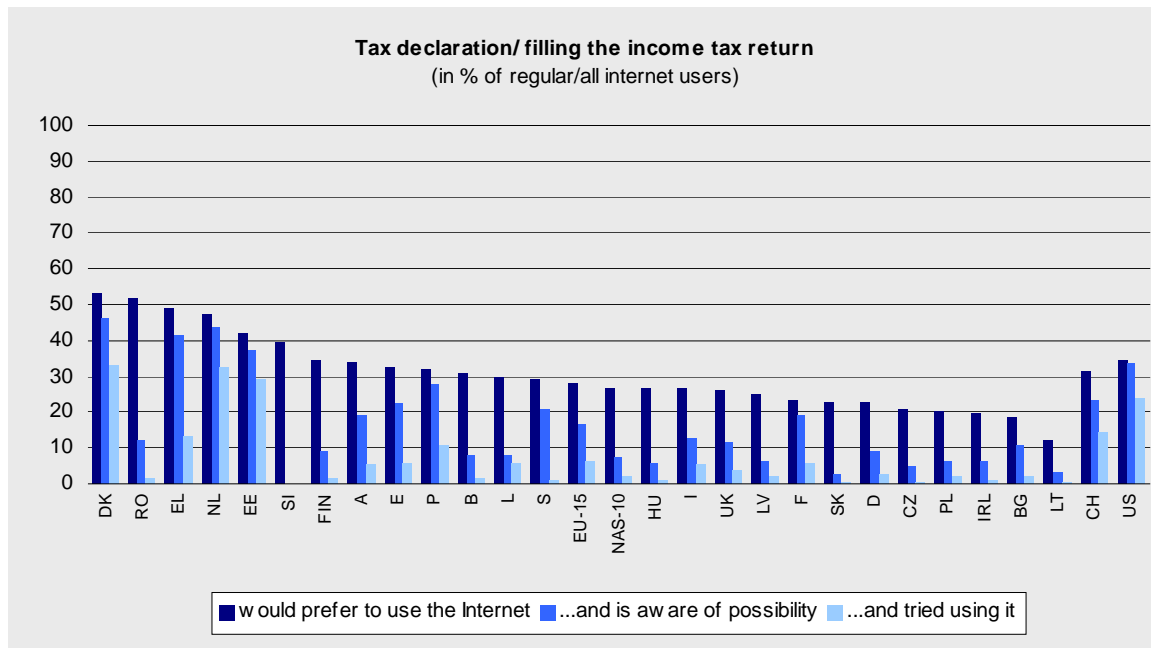


Figure 28: Tax declaration  
 Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
 Questions: K1, K2, K3  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

Searching for job via the Internet (i.e. using Job Search Services) is rather popular, especially in younger generation.

Relatively high usage rate of these services in the Slovak Republic results from advanced Internet skills of young people, mainly secondary school and university graduates but also because of high unemployment in the country of almost 20%. Hence especially young people try to use any available way of searching for jobs. For the purposes concerned they use both their own PCs and the PCs available in public facilities, such as post offices, libraries and Internet cafés. These services offer possibility to search for job also in more remote localities.

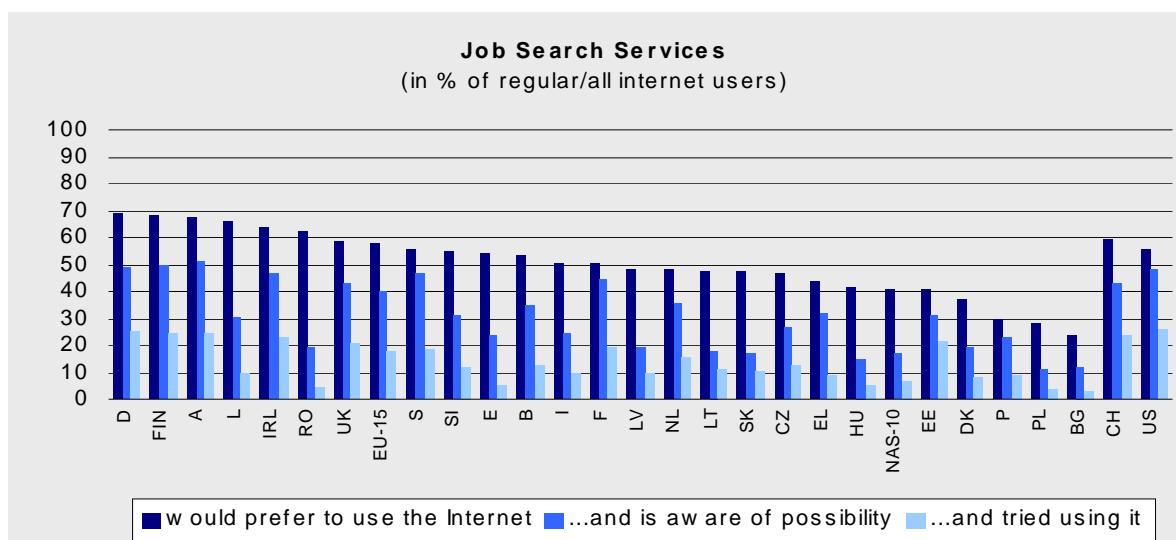


Figure 29: Job search services  
 Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
 Questions: K1, K2, K3  
 Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS



As far as the requests for issuing various documents are concerned, in the Slovak Republic, 69% of citizens are not interested in using these services via the Internet. Most of Slovak respondents would rather prefer only forms related to these services to be provided via Internet. This results from the fact that take-over of the personal documents in relevant office is necessary to be confirmed also by applicant 's autograph.

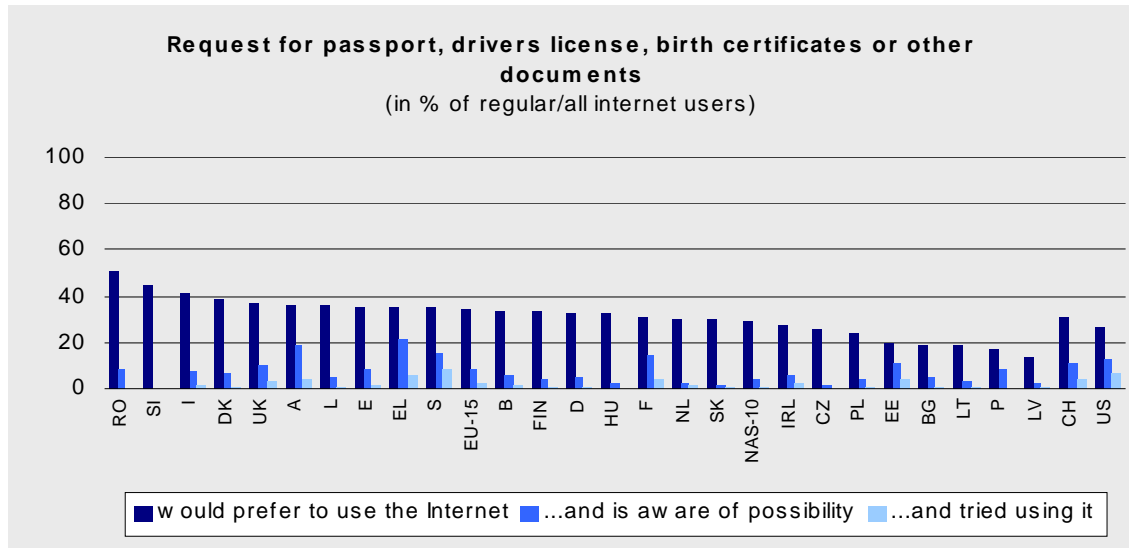


Figure 30: Internet request for documents  
Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
Questions: K1, K2, K3  
Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

As far as the Declaration to Police, among accession countries (NAS-10), with 22%, the Slovak Republic is in the fourth place, behind Hungary.

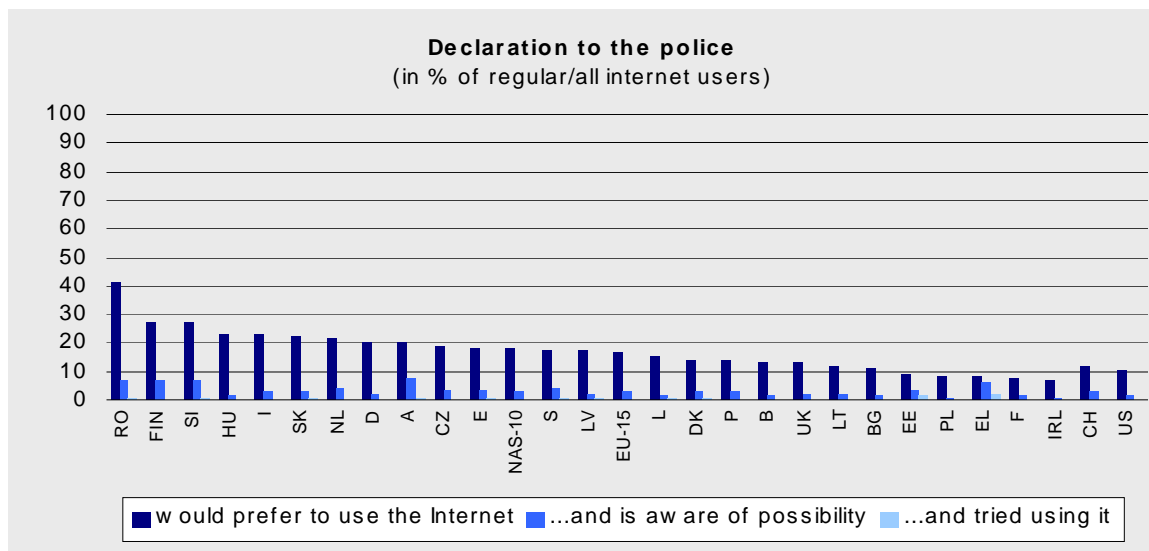


Figure 31: Declaration to the police  
Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
Questions: K1, K2, K3  
Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

The possibility of announcement of change of address via the Internet gains rather significant preferences. Approximately one fifth of citizens in the Slovak Republic would not prefer announcement of change of address via the Internet, in spite of the fact that such timely

information gained by this service would enable to monitor population movement in the country and its surroundings in a quicker and more efficient manner.

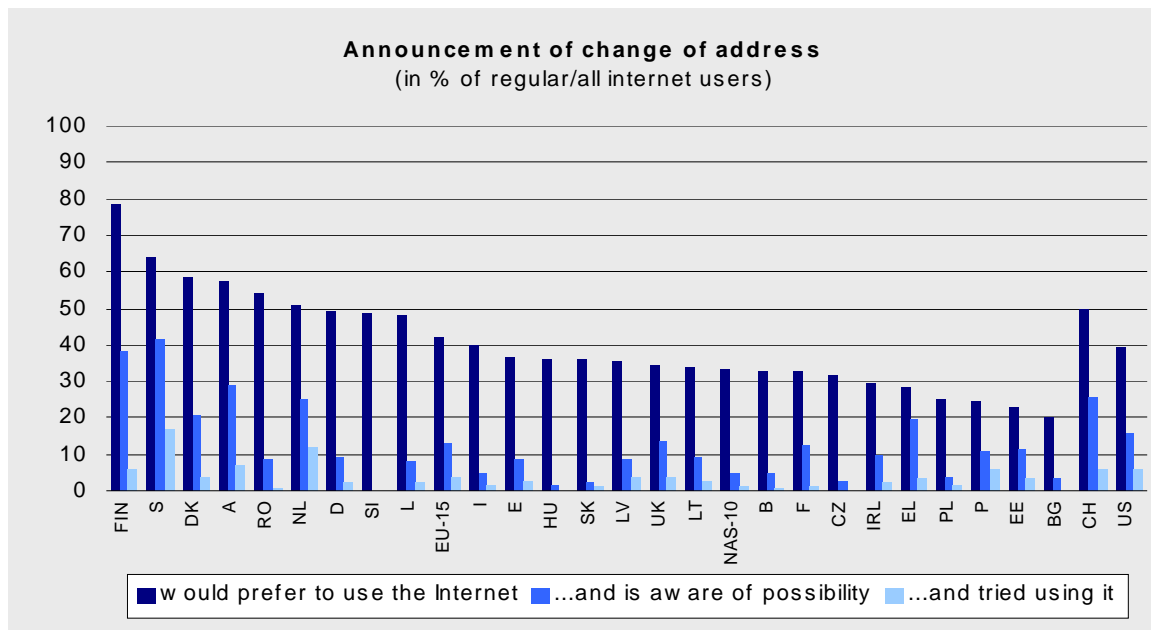


Figure 32: Announcement of change of address  
Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages  
Questions: K1, K2, K3  
Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

As far as the summary assessment of preferred way of interacting with Government services the Slovak Republic is slightly above the average level of NAS-10 as regards Internet way of interacting with government services and lower than in the traditional way.

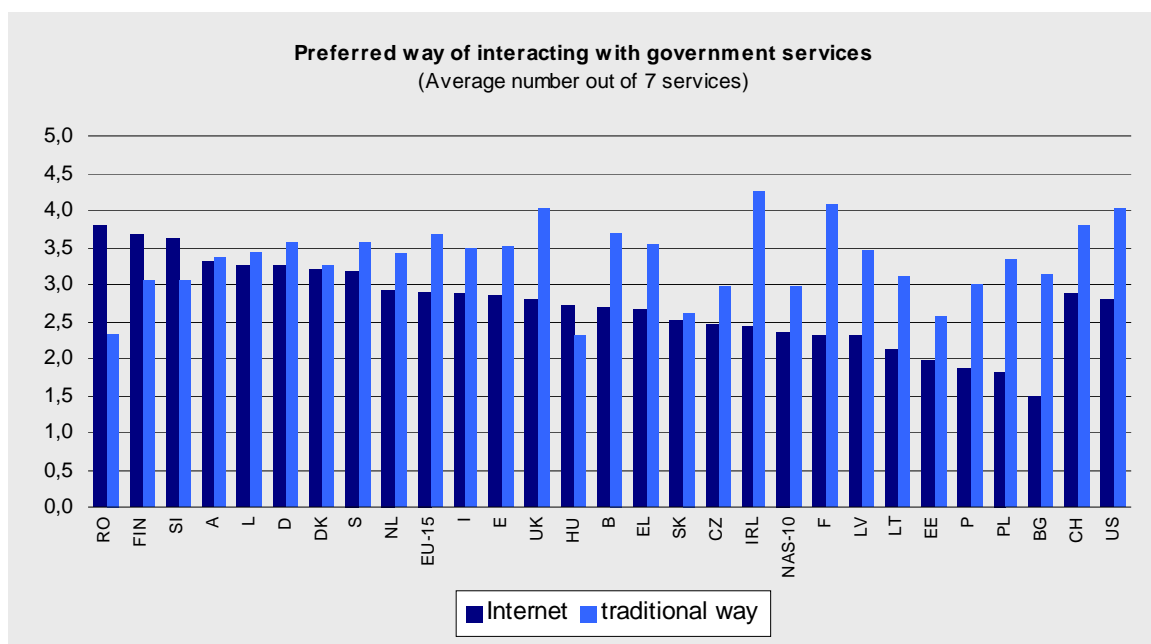


Figure 33: Way of interacting with government services  
Bases: regular Internet users, weighted average numbers of services  
Questions: K1  
Sources: SIBIS 2002, GPS, SIBIS 2003, NAS-GPS

As regards the rate of e-Health users among the Internet users, comparison of the Slovak Republic and other NAS-10 countries suggests that with as many as 40.8% of Internet users who search for health related information; the Slovak Republic is on the first place. It to the some extent a natural reaction to the situation in the health services in the Slovak Republic that has been characterized by the lack of funding and thus also a lower availability of medical services leading to longer waiting cues in front of medical offices. Hence those who have an access to Internet try to find as much of necessary information via Internet communication with the particular medical services providers.

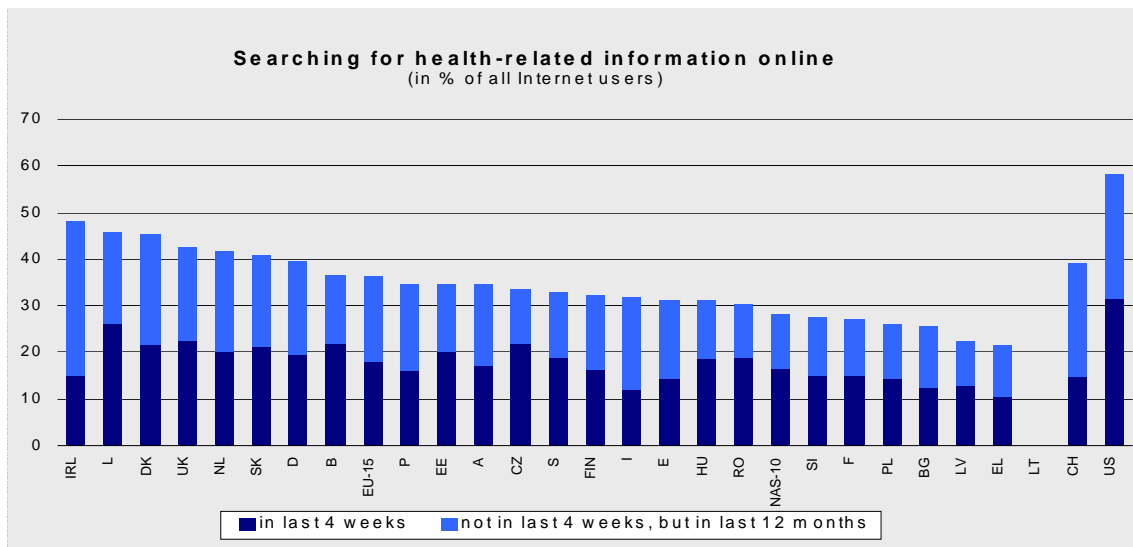


Figure 34: Health information on-line searching – Internet users

Base: All Internet users, weighted column percentages

Questions: B1d, B2d

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

As regards rate of e-Health users to total population, comparison of the Slovak Republic and the NAS-10 countries puts the Slovak Republic with 12.6% in the third place, behind the Czech Republic (13.2%) and closely ahead of Slovenia (12.5%). This lower position of the Slovak Republic among the NAS-10 countries is caused by lower rate of Internet users to total population. Nevertheless, the Slovak Republic still significantly exceeds the NAS-10 average (by 5.1%).

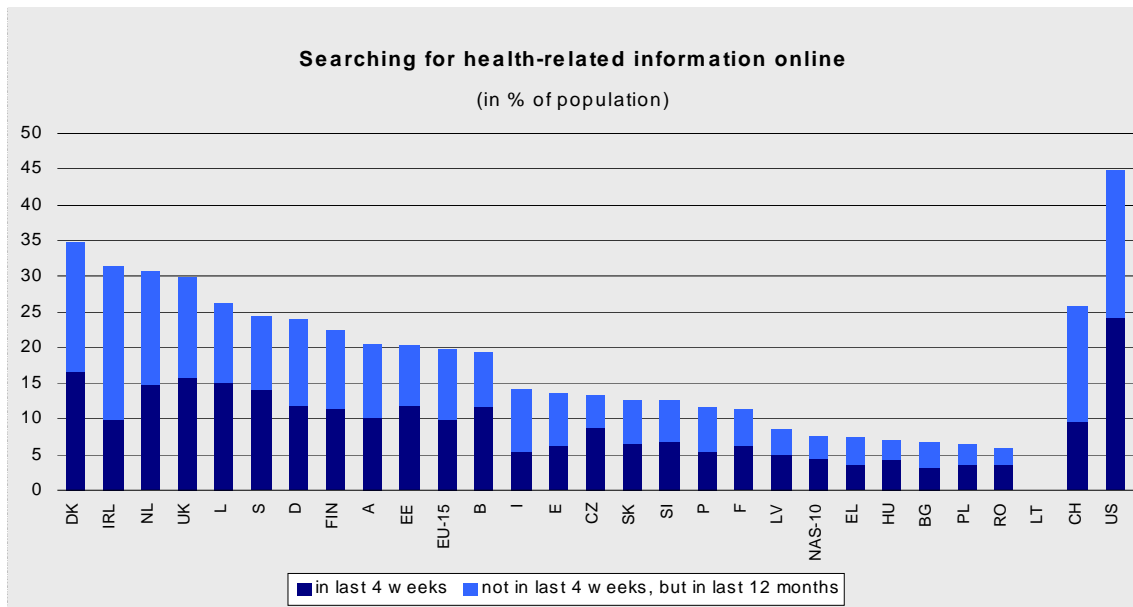


Figure 35: Health information on-line searching – general population

Base: All respondents, weighted column percentages

Questions: B1d, B2d

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

In general, using of on-line technologies in health service enables users to get better quality health information on-line, to consult actual health problems, to get doctor's recommendation or explanation of specific problems and so forth. To a large extent, this service promotes prevention and, in the long term, it also reduces expenses on diagnostics and treatment. It is possible to expect that with the introduction of some nominal fees for any medical services since 1 June 2003, the utilization of this Internet based health services will be significantly increased.

## 10. Conclusions

In conclusion of this SIBIS+ - WP 5 Country Topic Report for the Slovak Republic as its abridged version we have to state that the whole this exercise and the study and report themselves have been very instrumental and relevant at this particular final stage of the preparation of the Slovak Republic for its accession to the European Union on the 1st May 2004.

In this connection it has to be stressed that among various other areas of preparation for its soon-to-happen accession to the EU one of the most urgent and important has been also preparation regarding the EU Initiative as adopted at the Lisbon Summit regarding the e-Europe Initiative with the main goal for the Union to become the most advanced and competitive economy in the world by the year 2010.

As it has been well known, also all candidate countries and among them also NAS-10 countries have declared their readiness to adopt and implement the conclusions of the above Lisbon Summit also in their particular national strategies of their respective countries. In particular it means that in time of their accession to the EU the countries want to be ready to become prepared also for joining the particular e-Europe Initiative.

In this respect, this study has been an invaluable source of information on various important issues regarding the e-Europe Initiative as in many aspects it has been the very first more comprehensive survey and analysis of the situation in various areas regarding the e-Europe Initiative in the NAS-10 countries including the Slovak Republic. The relevance of the study and the whole exercise has further been enhanced by an important fact that it has for the first time ever enabled the following types of analyses:

- The current situation in the Slovak Republic regarding various important indicators related to the e-Europe Initiative. In many cases it has been the very first such information ever gathered and processed
- Comparative analyses of the Slovak Republic with other candidate countries of NAS-10 what has been an important information regarding the analysis of differences and/or compatibility of individual candidate countries regarding their preparation for the joining e-Europe Initiative
- Comparisons with the current member states of the EU-15 as the environment wherein after their accession to the EU will belong also the NAS-10 countries including the Slovak Republic. In this respect mutual analyses and comparisons have given us an opportunity to discover, in many cases for the first time again, what are the differences between the NAS-10 countries and the EU-15. For the future it has again been an invaluable source of information on the basis of which it is possible to plan further proceeding in the development of individual parts of the e-Europe Initiative i.e. where the largest gaps, etc are. In this respect very important comparisons have been also those against the EU-15 average as it could give us an information where approximately could be the place of NAS-10 countries in general and the Slovak Republic in particular within the future enlarged EU-25
- In addition the whole exercise has given also an unique opportunity to compare the status in the NAS-10 countries including the Slovak Republic also with the USA as the most advanced country in application and practical utilization of information and communication technologies in various activities of the contemporary society. To some extent to the same purpose could have served also comparisons with the last country included in to the study i.e. Switzerland.

These various analyses of the Slovak Republic vis-à-vis the NAS-10, EU-15 and also the USA and Switzerland have been conducted for the following selected sectors of the e-Europe Initiative:

- ICT Infrastructure and Security
- e-Society and Social Inclusion
- e-Education and Life-long Learning
- e-Economy and e-Commerce
- e-Work
- e-Government including e-Health

As far as the results for these particular sectors are concerned, they are as follows:

In the ICT Infrastructure and Security the situation in the Slovak Republic could be characterized as a relatively good vis-à-vis the NAS-10 countries. In some cases being even in the leading position as e.g. regarding the numbers of households connected to the cable TV. In some other areas like e.g. the total number of PCs per one household, the Slovak Republic was below the average of the NAS-10 countries on only the seventh position, the same also in the general knowledge of Internet, etc. In some other areas is position of the Slovak Republic even less favourable as in case of household density with connection to Internet. There according to the information from the Ministry of Transport, Post and Telecommunications of the Slovak Republic it has been only 3 per cent while for example in Estonia it was 20 per cent, in the Czech Republic 17 per cent. As far as e.g. the security is concerned, the Slovak Republic has been on the average of the NAS-10 countries i.e. around 10 per cent. In general we could conclude that the position of the Slovak Republic in this sector has been on average or below it, to some extent the better performance has been hampered by the fact that the fees for utilization of Internet, etc. have been still rather too high for an average family and thus most of people were using Internet either in their work places or in schools, etc.

As far as e-Education is concerned, the situation in the Slovak Republic has been to some extent affected by the fact that the relevant statistical data have not yet been available and for the first time they will be available only in 2004. As far as the digital literacy is concerned, it is estimated to be on the level of about 27 per cent what is 8 per cent higher than the average of the NAS-10 with 19 per cent but much lower than in the EU-15 with 44 per cent. As we have already mentioned the core of the Internet usage has been in schools and work places what also to some extent affects negatively the level of e-Education in the Slovak Republic. The costs of Internet related expenditures are just simply rather too high in the country what is also one of the main reasons why there is not enough schools connected to Internet. The other problem with e-Education has been that the qualified teachers are in a short supply and have to be hired on an external basis as the salaries of teachers are too low to attract qualified specialists who rather prefer jobs in private sector, etc.

Regarding the e-Government, it could be stated that e-Government in the Slovak Republic has not yet been implemented although some necessary legislative steps have already been made but the practical application as e.g. in utilization of electronic signature, has been not existent. The most of agendas where the principles of the e-Government could be practically implemented and utilized like in taxation, driving licenses, passports, ID cards, etc. have not yet for various reasons (legislative, technical, organizational, etc.) even started.

As far as the e-Work is concerned, the situation in the practical application and utilization of the latest information and communication technologies on the national labour market has been about the same as in the case of the e-Government in general. There are many

reasons for such an unfavourable situation although the situation on the Slovak labour market with the relatively high unemployment rate could be a more than suitable area for application of ICT to the larger extent not only in the terms of qualification and/or re-qualification as also in the Slovak Republic there has been much larger demand for computer related professions and specialists than for various other professions. Another important area where the wider ICT utilization could also be an attractive one is the area of job searching as through Internet and various web sites of state organizations and private companies it has already now been possible to find various vacancies on the labour market. Of course that also registration and handling of the agenda of unemployed could be an another important application area for more wider utilization of the latest ICT technologies and in particular for creation conditions for further development of e-Work, Labour, Employment systems.

In the e-Society and e-Social Inclusion the analysis under this study has also focused on the particular data as provided by the SIBIS 2003 survey. In the first part, the focus has been on four risk groups regarding the age, education and income and the Slovak Republic achieved a lower value than is the average of the EU-15 but a slightly higher value than is the average of the NAS-10 countries. The second part of our analysis has been focused on the barriers to use of Internet regarding requirements for more advanced computer knowledge, a personal indifference, etc. The results of this analysis are about the same as in other problem areas i.e. the Slovak Republic achieved lower level than the EU-15 average but has been on par or even slightly higher than the average of the NAS-10 countries.

As in some other areas also in the e-Economy and e-Commerce, the Slovak Republic has been seriously delayed behind the member states of the EU-15 and unfortunately also behind some more advanced and developed NAS-10 countries. It just confirms our previous statements that the e-Commerce has been closely related and determined by the overall development in the ICT. For the time being there are no official statistical data on the e-Commerce in the Slovak Republic available hence this survey and study has brought into the attention some of the very first information in this respect and on the basis of them it will be possible to prepare also for the future more systematic approach towards the introduction and wider utilization of the principles of e-Commerce also in the Slovak Republic where again some of the basic legislative preconditions have already been created as e.g. the legislation on electronic signature.

As a part of the e-Government we have analysed also some available outputs from the SIBIS 2003 survey regarding e-Health. In general, situation in the Slovak Republic also regarding this sector has been about the same as in other sectors. The Slovak Republic has been behind the EU-15 countries but on average or slightly above it regarding the NAS-10 countries.

In conclusions to this part of the study regarding the selected sectors of the future e-Europe we could state that situation of the Slovak Republic has in general been similar to other candidate countries for accession to the EU i.e. in the NAS-10 countries. It has been in some areas too far behind the average of the EU-15 and mostly behind also the less advanced member states of the EU. It means that the Slovak Republic together with other NAS-10 countries will belong in respect of the e-Europe of the future enlarged EU-25 among the least advanced member countries in the terms of application and utilization of the latest ICT and thus also their practical contribution to the implementation of the Lisbon Summit Strategy on the e-Europe.

As far as our ideas for further research in this very important problem area are concerned we would like to stress again the importance of this first currently ongoing SIBIS+ project as it has created the first initial platform and information basis for its further continuation. In this respect we would first of all suggest to extend this project and/or to prepare a new continuing project that would focus on the following research task in the future:

- completion of the current study to such an extent that the analyses will be possible to carry out in the full range of all particular areas i.e. not only for the selected 5-6 sectors but for all sectors regarding the whole e-Europe Strategy
- completion of the study for all analyses regarding the range of graphs produced during this stage where only 50 per cent of them enabled full comparison between the NAS-10, EU-15 and the USA and Switzerland. In the particular extension, the full 100 per cent coverage has to be achieved for all three basic groups of states
- from the current survey and study the research has to continue in the direction regarding the achieved results for preparing a kind of the full scale statistical surveys that would be in the full range covering all future EU-25 countries in all various aspects of the e-Europe sectors. That could only enable the full comparability of the situation in individual countries and to formulate the trends for further development in such a way that in the horizon of year 2010 the EU will be really ready to become the most competitive economy in the world thanks also to the high level and standard of application of the latest ICT in the future enlarged EU-25.

Without such a whole EU-25 covering statistical surveys on the e-Europe Strategy applied according to the unified statistical methodology in all member countries it would be very difficult if almost impossible to measure how individual countries and the Union as such are progressing towards their ultimate goal for year 2010 i.e. to become the most advanced and competitive economy in the world.



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## ANNEX 1: Methodology

### Methodology of the GPS 2002 survey

The survey was conducted in April-May 2002 (interviews were carried out between 4th April and 18th 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 on-line 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 1st January and 31st 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 on-line 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
<b>Country</b>			
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

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Occasional use (last 12 months)	675	655	559
Non Internet use	6679	6864	7606
Mobile phone usage			
Mobile phone owner	5763	5635	4534
Telework			
Home based teleworkers	162	162	120