



SIBIS

Slovenia

Country Report No.10

No.10

Preface

This report represents an important deliverable of the SIBIS project (Statistical Indicators Benchmarking the Information Society), funded by the European Commission under the 'Information Society Technology' Programme, running from January 2001 to June 2003. The overall goal of SIBIS is to develop and pilot indicators for monitoring progress towards the Information Society, taking account of the 'e-Europe action lines'. On this basis SIBIS focuses on nine topics of interest, i.e. Telecommunications and Access, Internet for R&D, Security and Trust, Education, Work and Skills, Social Inclusion, e-Commerce, e-government and e- Health. This report is part of an extension of the SIBIS project 'SIBIS+: Statistical Indicators for Benchmarking the Information Society in the NAS: The e-Europe+ 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 Slovenia comparing it to the other NAS but also to 15 EU countries, Switzerland and the USA for which the same survey was already carried out in 2002. The document has two main objectives, i.e. to be a support tool for views shared by experts in the area and, at the same time, to define indicators for quantifying some of the most critical indicators related to the five topics.

The report is organised in six chapters and annexes. The first three chapters are designed to give the reader an idea of the main outcomes (Executive Summary), the context (Introduction) and the topic research and indicators developed. The core of the report is the analysis of indicators, provided in chapter 4. This chapter focuses on an analysis of basic ICT infrastructure (e.g. Internet penetration), e-Society (e.g. barriers to internet usage), e-Economy (e.g. e-commerce usage), e-Work (e.g. home-based telework), and e-government (e.g. interest in e-government services). Important findings are presented in the body of the document and additional data are shown in the annex.

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

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

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

The Slovenian partner, Faculty of Social Sciences at the University of Ljubljana (FSS-UL) has 200 employees and a turnover of 25 MEURO annually. FSS-UL covers a variety of

fields, from sociology, political science and social informatics to cultural studies, from defence studies to marketing, journalism and management. It has 300 personal computers, all with Internet access and all linked with the University network. Of those, 110 are dedicated to the laboratories for students. FSS-UL has over 3,000 students (undergraduates and graduates) in more than 20 programs, and is heavily involved in international publications and international projects, including five projects from the Fifth Framework Programme.

The Centre for Methodology and Informatics (CMI) is a division within the Faculty's Department of Sociology. CMI is well known for its Research on Internet in Slovenia (RIS). The RIS (<http://ris.org>) project has systematically researched the information society issues from 1996 and it has become the leading and the most comprehensive Slovenian institution in this field. The representative telephone surveys are conducted regularly on a yearly basis among households, companies and educational institutions. A rich collection of data has been established and over 60 substantial reports have been written on a variety of ICT related topics, from security, usability, mobile phones, hardware/software studies, e-commerce to e-banking, web-site visitation, e-government, telework, digital divide, ICT indicators etc. Besides this substantial research, the main academic focuses are the social science methods, particularly the web survey methodology, causal modelling and social network analysis. The Websm.org home page is becoming the global information point in this field due to the further developments within another project in the 5th Framework Programme, led by CMI. Similarly, the CMI is one of the world's leading institutions in the field of social network analysis.

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1 Executive Summary

1.1 The RIS project and the SIBIS project

The project RIS (<http://ris.org>) - CMI at FSS-UL - has been conducting regular surveys related to the information society since 1996. Consequently, there exists a rich collection of data, perhaps one of the most comprehensive and complete in Europe. However, despite all efforts to include comparable questions from international surveys (Pew Research, Eurobarometer, Flash Eurobarometer, Eurostat, etc.) there exists a permanent lack of international comparisons.

The SIBIS+ project offers an excellent opportunity for international comparisons as a geographical extension of the SIBIS to the 10 Newly Associated States (NAS), where extensive elaboration of contemporary indicators had been performed. The indicators were first tested in 2002 for 15 EU countries (plus Switzerland and US) in the General Population Survey (GPS) and the Decision Maker Survey (DMS). The survey of public R&D personnel was also piloted in 2003. Within the SIBIS+ project only the GPS (face-to-face survey of the population $n = 1,000$ in each country) was performed in 10 NAS countries in early 2003. These countries are: Estonia, Lithuania, Latvia, Bulgaria, the Czech Republic, Poland, Romania, Hungary, Slovakia and Slovenia.

1.2 The IST developments in Slovenia 1996-2002

In 1995-1998 Slovenia was one of the most advanced adopters of the Internet, which can be confirmed with host-count statistics, the number of PC's per 100 habitants and, in particular, with Internet penetration. The major explanation factors are the traditionally high interests for information society technologies, high (above EU average) PC penetration from the early 90's and the public Internet access provider ARNES, which enabled massive public access already in the mid 90's.

The comparisons with the Eurobarometer EB 50.1 data in 1999 already showed that the percentage of persons interested in information society (IS) services was higher in Slovenia than in the EU for almost 50%. This is particularly true for the interest for on-line consumer rights, on-line consulting of medical doctors, on-line travel plans and telework.

However, in the late 90's, a certain slow-down appeared. Despite being the leading transitional country and still surpassing some 4-5 EU member states, the position of Slovenia moved below the EU average on the majority of IST benchmarks. The lag can be most clearly observed in time distance (see Annex 1, Figure 26) analysis of the host count statistics from 1995 (Sicherl, 2001). The reasons are mostly unclear. However, we can draw out some possible explanations indicated by different subjects:

- Critics of the national telecom claim that liberalization and regulation of the telecommunication market was extremely slow, which implicitly supported the monopoly of the national telecom. Thus, for a certain period of time the dedicated lines were relatively expensive and small Internet providers strongly complained about unfair competition. According to them, the lack of proper regulations helped the national-telecom-owned Internet service provider Siol to obtain a two-third share among companies and half among households (a third still belongs to the public provider ARNES). In 2003, the government still owns the national telecom with no clearly defined deadline for starting privatisation. The EU authorities also criticised the slowness of this process in Slovenia on many occasions. The critics also refer to unnecessary formal procedures causing delays in ADSL access, which is still pre-conditioned by ISDN.
- Contrary to this, according to the national telecom and some governmental arguments, their figures show that in Slovenia the costs of Internet access were actually lower than in comparable countries. They see the main problem in the small Slovenian market with 2

mill inhabitants, which enable only one provider to develop the economy of the scale. According to these arguments, the reason for a relative slow-down of the Internet expansion was the fact that the convenient access via the public provider ARNES enabled an early entrance of the whole segment of computer-oriented users. Next segments would need different strategy to be attracted. However, such strategy did not appear.

- The critical public and some journalists often refer to the sub-optimal government policy. Besides slow deregulation and weak stimulation measures for the business sector, the lack of content in the Slovenian language is especially critical. Partially, this is due to a small market, which cannot support the developments of expensive contents on the Web. The slow development of governmental sites and G2C services also contributed to this, together with non-coordinated and awkward developments in key on-line shopping segments: music, book and groceries. The slow reaction of the banking system enabling relatively late credit card authorisation on the Slovenian Web sites also contributed to the delay. In addition, the tax stimulations for household PC purchase were removed in the 90's. The extremely restricted domain registration also contributed to the problem.

The mobile phone revolution somehow shares a similar characteristic of IST developments. Here, the Slovenes were also genuinely open to adopt the new technology. However, until 1998 there was only one provider, which kept the prices relatively high. With competition, the rapid mobile phone expansion put Slovenia among the world top countries with respect to mobile phone penetration. The prices are now also among the lowest in Europe.

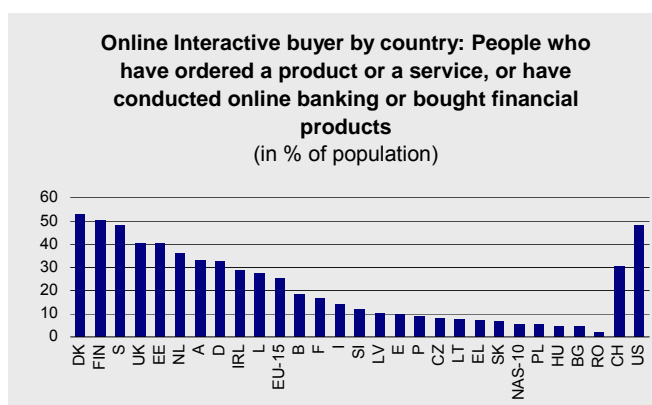
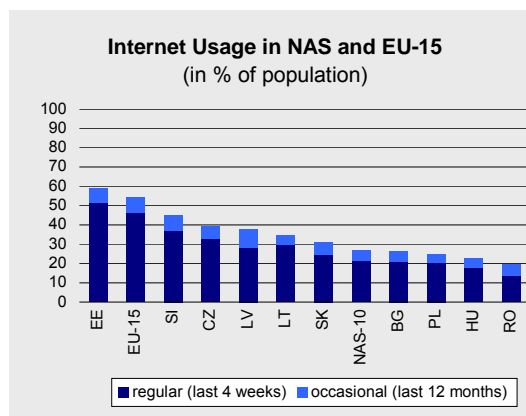
The establishment of the Ministry of Information Society in 2001 and an independent telecommunication regulator has a positive effect on IST developments. However, now the changes can be relatively slow, as in 2002/2003 the general growth rates of Internet penetration slowed down to 10-15% annually.

1.3 Key findings of the SIBIS+ 2003 for Slovenia

It was expected that the SIBIS+ GPS (January 2003) would confirm the above historical framework of IST development in Slovenia, especially because the RIS data are permanently (twice a year) compared to the Flash Eurobarometer findings.

Gaps: The SIBIS+ data confirmed a general lag in Internet penetration for Slovenia, which is now 1-2 years behind the EU average. It is also known that this lag has now somehow stabilized. Slovenia is lagging also behind Estonia, with some other NAS countries (the Czech Republic, Hungary, Latvia and Lithuania) rapidly approaching the Slovenian position. Nevertheless, compared to the EU countries, Slovenia is typically still positioned ahead of France, Italy, Portugal and Greece. A gap, similar to Internet penetration, also exists with respect to the skills of communicating via the Internet (e-mail, Internet chats, personal web page), installing digital tools, and identifying the source of information.

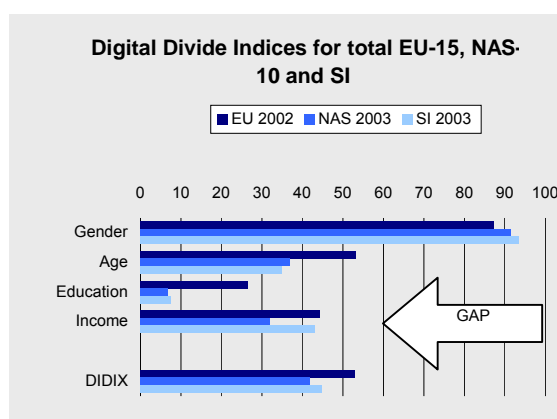
The gap in Internet penetration is 10% (55% EU-15 vs. 45% Slovenia) in the general population, and in households (44% EU-15 vs. 34% Slovenia). There is a smaller gap in PC usage (in the last 4 weeks), as 49% of the population used it (EU-15 55%). The gap in DSL access to the Internet also exists (3.4% EU-15 vs. 2.0% Slovenia). The largest part of Slovenian population is accessing the Internet from home (14%; EU-15 20%), and 10% are using Internet more than 6 hours a week (EU-15 13%). Admittedly, regarding the TA (telecommunication and access) indicators Slovenia is in all cases above NAS average.



A somehow larger gap can be observed with e-banking and e-shopping. In Slovenia only 12% of the 15+ population has conducted any kind of these activities, while 26% of EU population have done that. For e-shopping alone, only 7% of the Slovenian population has used it (EU-15 20%). Among e-shopping users the majority are experienced users (70%), who have been using Internet for two or more years.

However, in January 2003 the largest gap exists with respect to e-government services: tax declaration, request for official papers, car registration, declaration to the police, and announcement of change of address. For example, in January 2003, the awareness of the possibility of online tax declaration is 16 % among the EU Internet users, 8% in NAS-10, but 0% in Slovenia. It is expected that the ambitious e-government programme, with some major results expected already in 2003, will rapidly fill the gap and take advantage of offered potential. While e-shopping and e-government can be explained with relatively low developments of the corresponding supply, the lag of e-banking would deserve a specific discussion.

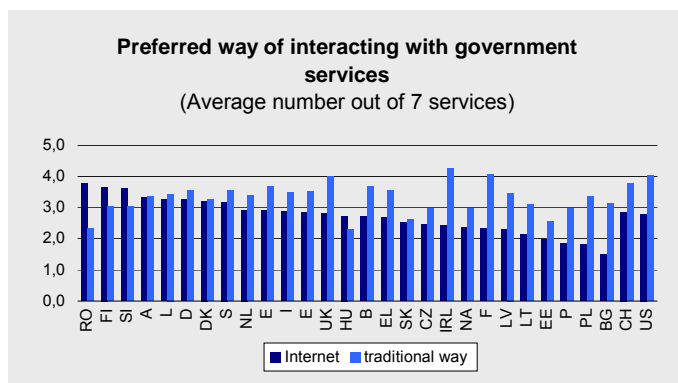
Digital Divide Index (DIDIX), where value 100 means no gap, is 45% for Slovenia, slightly lower (thus higher gap) than in EU-15 (53%), meaning that the risk groups in Slovenia are 45% as likely to use PC, Internet and have access at home, as the average population. The gender gap is even smaller than in EU, while for the educational divide the gap is dramatic: 7.5% Slovenia vs. 27% EU-15. The age gap is also critical (35%) as it is behind EU-15 (53%) and NAS-10 (37%). Here, we should mention that the use of e-Learning is also among the lowest in 25 countries, with 7% of labour force using it (EU-15 14%; NAS-10 5.5%).



Advantages: We should recall that – despite some specific lags - in general, Slovenia is the leading NAS country in IST developments and it is also surpassing many EU members. In particular, the consequences of successful past developments in the Internet penetration can

still be observed. Thus, for example, the percentage of experienced Internet users (using the Internet more than 2 years) is still above EU average. Slovenia is also among the leading European countries with respect to mobile phone penetration, as 76% of the population use mobile phones (EU-15 69%).

Potentials – e-government: The SIBIS+ data confirm extremely high interest for IST usage in Slovenia. Whenever there was a question about the interest for IST usage, Slovenia stood among the most exposed countries of the 25 EU countries, what is particularly true for the interest in governmental on-line services.



Together with Finland, Slovenia is the only European country with sizeable Internet penetration where the interest for on-line communication with the government surpasses classical communication. For example, 40% of users in Slovenia prefer to fill the income tax return via the Internet (EU-15 only 29%). However, as for January 2003, this was not as yet offered in Slovenia (EU-15 8%): this service was partially implemented in February

2003.

Potentials - IST services: Slovenia is the country with the highest gap among the interest and actual usage of these services. However, when the actual service is available, the usage is also high. Thus, for example the library search in Slovenia is among the highest in Europe both regarding interest and actual usage: 76% of Internet users would prefer to use Internet to search for books in libraries (EU-15 73%), and 38% have actually tried to use this service (EU-15 22%).

Potentials – telework: With respect to interest in telework the averages of EU and NAS countries are closer than usual (EU-15 66%; NAS-10 64%), however, Slovenia still displays one of the highest interests, with 75% of the employed population interested in at least one type of telework. Again, the use of telework significantly differs from the interest. This might be explained with low feasibility of telework and with slow adoption of this practice among enterprises. In Slovenia only 20% of the employed population claim they are able to exercise telework (EU-15 33%). In addition, there is only 4.4% of the employed population already teleworking from home (EU-15 7.3%), 3% of mobile teleworkers (EU-15 4%), and 2.2% of self-employed teleworkers in SOHOs (EU-15 3.4%).

Barriers: Only the two barriers for Internet usage among Slovenian nonusers exceed the EU average: 'Internet requires advanced computer skills' (67% vs. 58%) and 'Internet is too expensive to use' (Slovenia 51%, EU-15 42%). However, the strength of these barriers in Slovenia is still in tune with the corresponding gap in Internet penetration (Figure 11, Figure 12). More surprisingly, other barriers do not exceed the EU average (e.g. 'Internet is too time consuming', 'Internet is not easy enough to get access to'). It is particularly surprising (because of a generally high interest in IST services) that the 'lack of interesting information on the Internet' presents particularly low obstacle for nonusers (Slovenia 8%, EU-15 23%, NAS-10 19%). Security concerns among Slovenian Internet users are also among the lowest among the 25 countries (SI 63%, EU-15 79%, NAS-10 68%). Similarly, Slovenia has the lowest percentage (4% vs. EU 27%) of regular Internet users, who were often stopped from buying online due to security concerns.

Dropouts: The lack of barriers suggests that the major problem for more intensive IST usage is the absence of content/services and partially also high access/usage costs. Accompanied with high potentials/interests, this can be confirmed with high Internet

dropouts. Here, Slovenia is in first place (except the USA 1.7%), with 1.3% of the 15+ population, which stopped using the Internet (EU 0.7%).

1.4 Conclusions

The SIBIS+ data confirms a very specific pattern of IST developments in Slovenia. With rapid developments in the mid 90's, Slovenia was above EU average in regard to PC and Internet usage. This slowed down by the end of the 90's, when the existing lag of 1-2 years behind EU average surfaced. However, here we should strongly stress that this lag is still much smaller compared to the general development lag, as Slovenia is reaching only 70% of EU average in GDP per capita, which presents a time lag of more than 10 years.

Nevertheless, we should be clearly aware that, with respect to the general IST developments, Slovenia is still relatively advanced and ahead of the NAS 10 countries, with the exception of Estonia (but only in some aspects). In addition, for the majority of indicators it is also typically ahead of some of the EU countries (France, Italy, Portugal and Greece). However, it is also true that the Slovenian advantage is slowly disappearing.

Perhaps the major comparative advantage of Slovenia is an extremely high mobile phone usage, which is significantly above the EU average.

Another important advantage is the traditionally high interest for IST services, which is among the highest of all the 25 surveyed European countries. Similarly, the subjective barriers for possible Internet usage are among the lowest. The only exceptions are the costs, which present a slightly higher barrier for Internet usage in Slovenia compared to the EU average (but not so to the NAS average). It thus seems that SIBIS data confirm the basic overview of IST developments 1996 - 2002 in the introduction (1.2).

In addition, some data indicate, that the gap between the potentials/interests for IST services and the actual supply/usage is the largest in Slovenia among all the 25 included countries. The main obstacle thus seems to be the lack of e-content and e-services, which prevents the Internet users to use all the potentials.

Another specific problem in Slovenia is a very strong digital divide due to education and age. The non-educated segments also show a particularly low interest for PC and Internet usage.

It is also very lively that, the problems with IST developments arise from past absence of a more proactive governmental policy, so the unique opportunity to keep the country among the top IST adoptors was perhaps missed. Namely, during recent years, the IST issues were rarely among top governmental priorities. This can be also observed through the disintegrated governmental Web presence, limited offer of G2C services, insufficient support for ICT in schools and the absence of stimulating measures (less restricted domain registration, tax support for household PC purchase,). The delays in de-monopolisation and telecommunication regulations may also contribute to this gap.

However, some recent actions of the newly established *Ministry of Information Society* brought an important impetus for IST developments, from increasing the number of public access points to the ambitious *Strategy of Information Society of Republic of Slovenia*. This all offer the possibilities to transform the Slovenian position once again. Of course, the future developments basically depend on the priority level given to IST by the Slovenian government and particularly the Parliament.

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

The national topic report presents an overview of contemporary and most comprehensive indicators of Information Society for all EU countries and Newly Associated States (NAS). The analysis of indicators presented will contribute to the positioning of Slovenia in the EU with regard to the Information Society (IS). Accordingly, since the main target audiences are policy makers and NSI (National Statistical Institutes), the SIBIS project seeks to have an impact on both, the making of policies and the development of official IS statistics.

Five key topics are covered in the report: telecommunication & access; education; work/skills/employment; social inclusion, and e-government. The main reasons for selecting these topics include their high topical relevance for the NAS, high ranking on the political agenda in the EU and the countries themselves, and the good coverage of indicators for these topics in the general population surveys (GPS). Beside that, the topic of e-economy has been analysed as being interesting for Slovenia.

Telecommunication & Access

The topic of telecommunications and access is a physical cornerstone of the information society and is both wide ranging and 'horizontal' in nature. In many ways, the topic can be considered as the fundamental 'enabler' – it allows the other e-Europe domains to 'happen'. 'Access' is another loosely defined topic. It can be defined formally as 'the ability to retrieve data, graphics, sound, text etc. while on-line'. Translated into the context of e-Europe, this topic covers the wide range of devices by which users access electronic 'information' – e.g. computers, telephones, multimedia kiosks, televisions and other hybrid devices. In Slovenia, the research in this area has been conducted since 1996. The majority of indicators were regularly provided by RIS (<http://ris.org>) in the reports *Internet Service Providers in Household/Enterprises* (1996-2003), *Information Technologies in Households* (1996-2003),

ICT Indicators for Slovenia and EU (2001), Mobile Telephony (1997-2001). Some other institutions were also contributing to the area of T&A measurements, such as SICENTER with *Comparative Analysis of Information Society Indicators (2001)* implementing the time distance analysis.

Education

In the SIBIS context, education is understood as a formally institutionalised process of knowledge transfer and knowledge development, as opposed to informal learning arrangements taking place through various communities of practice arrangements, on-the-job training and peer learning. At the present stage, Slovenia is performing continuous measurements of the development of ICT infrastructure in educational system from 1996 on (RIS), and the results are summarized in the *Educational Institution* reports. An important international source of statistics is also Eurydice, providing comparative indicators from 1994 in the document *Key data on education in Europe*.

Work/skills/employment

For the third topic, skills are defined as the 'learned power of doing something competently'. Work is defined here as aimed productive activity, and the structure of employment refers in particular to the sectoral and occupational distribution of employment, as well as unemployment and labour force participation. This topic has the most extensive coverage in Slovenia among all five topics. Statistical Office of Republic of Slovenia (SORS) provides indicators quarterly with the panel *Labour Force Survey, Labour Market: Wages and Pensions* monthly reports, *Time Use Survey (2000/2001)* and *Statistical Yearbook*. With regard to the ICT, the measurements on the topic are provided by RIS in DMS (1996-2001), and recently with expertises on telework in two reports: *Telework and ICT at Work (2000/2001)* and *Telework in Slovenia (2002)*.

Social Inclusion

Social inclusion is inextricably linked to the issues of (accessing and maintaining) employment, education, housing and healthcare. At the same time, these issues provide the basis for most tangible indicators for measuring inclusion. Against this background there has been a predisposition to view divisions in relation to the Information Society as being just an extension of divisions from 'pre-Information Society'. This requires a multi-perspective view that includes attention to differential levels of access [to the ICTs] across various population subgroups, while also looking at issues such as the 'unpacking' of the very concept of access. The measurement of social inclusion is also included within other areas, which is true also for Slovenia. Most data can be found in the reports of RIS (e.g. *ISPs in Households, Educational Institutions* etc.). One of the major contributions to the measurements of ICT inclusion presents the *Digital Divide Report*, RIS provided for the Ministry of Information Society.

E-government

Generally, e-government designates any transaction that involves the government and that is carried out, even partially, using electronic means. E-government plays an important function in mediating government actions and its role will continue to grow as communications technologies become more widespread. Already communications technologies have changed the way that the government operates by facilitating information dissemination, communications and transactions. Since the government in Slovenia is evolving slowly, the indicator coverage is limited. In a limited extent, the research on e-government is included in

the basic ICT studies, where attitudes toward various aspects of e-government are measured. The most focused research on e-government has been done by IPMIT (The Institute for Project Management and Information Technologies) and RIS, and presented in *The Report on Indicators in Public Administration* (2002) and in *The Internet and the State* (2000-2002) report respectively.

It might be stressed that the coverage of IS indicators in Slovenia is substantial and in most cases comparable to the EU. For the main areas the research has been conducted since 1996. Also, with recent policy efforts, which bring impetuses for the acceleration of all areas of IS, Slovenia is well on its way to transform the Slovenian position once again. However, since the ICT phenomena and consequently IS itself are changing rapidly, it is of great importance to assess those changes. On one hand, it brings the challenge for researchers to determine the gaps in present indicator coverage. In this account, the issues are scientific and place emphasis on the methodology of the research and on the validity of the data. On the other hand, it brings challenge to policy makers, as the policies have to embrace all the phenomena of contemporary society. The SIBIS project addresses both the scientific and policy challenges. Indicators presented in the report will serve as benchmarks of IS and as pilots for further methodological elaboration. In this context the cooperation of practitioners in the field is highly welcome. Furthermore, since IS benchmarks are high on policy agenda due to their comparison value, the presented indicators will provide added value by enabling the IS in Slovenia to be compared to the EU/NAS countries.

2.3 Overview of the Report

The report is based on the SIBIS/SIBIS+ surveys conducted in 2002 (SIBIS) and 2003 (SIBIS+). The topics related to IS issues are presented and analysed:

- 1) ICT infrastructure and access;
- 2) e-society and social inclusion;
- 3) e-education and life-long-learning;
- 4) e-economy and e-commerce;
- 5) e-work;
- 6) e-government.

In the first topic, basic T&A indicators are presented, such as Internet penetration, use of PC, use of mobile phone etc. Also, a brief glance into the security concerns is made. For the second topic barriers to Internet usage are analysed in relation to the intensity of Internet usage, digital divide index (DIDIX), and Internet dropouts. The third topic deals with e-education indicators. In this chapter the indicators of lifelong learning, usage of e-learning, and ICT skills are presented. Some analyses of Internet penetration in relation to lifelong learning are made. In the fourth topic, basic e-economy indicators are presented: e-commerce usage and e-banking usage. Some e-economy snapshots and their relation to Internet usage are presented. The chapter of e-work focuses particularly on the work that relates to ICTs. Indicators of home-based teleworking, interests in teleworking, mobile work, telework in SOHO (small office, home office) are also presented. Analyses of different types of telework in relation to Internet usage are included. The e-government topic includes indicators according to preference, availability, and usage of e-government: 'tax declaration', 'use of job search services', 'requests for personal documents', 'car registration', 'declaration to the police', 'search for books in public libraries', and 'announcement of the change of addresses'.

3 General Information about the Country

Since independence in 1991, following the collapse of the Yugoslav federation, Slovenia has successfully integrated into the international community and is becoming a rapidly developing and prosperous state expanding co-operation with European countries and worldwide. It is about to acquire full membership to the European Union in 2004 and has already joined NATO in 2003.

Slovenia stretches on 20,273 square km between the Adriatic Sea and the Alps. The melting of the Alpine, Pannonian, Dinaric and Mediterranean worlds creates a unique countryside.

Under her Constitution, Slovenia is a democratic republic governed by the rule of law and a social state. The state's authority is based on the principle of the separation of legislative, executive and judicial powers, with a parliamentary system of government.

The highest legislative authority is the parliament - National Assembly (Državni zbor) consisting of 90 deputies elected for a term of four years by secret ballot, on the basis of direct universal suffrage. The autochthonous Italian and Hungarian national communities are guaranteed two seats in the National Assembly. The National Council (Državni svet) is a mainly advisory body composed of representatives of social, economic, professional and local interests. The National Council comprises 40 members who are elected for a term of five years. The head of state is the President of the Republic (elected for a maximum two consecutive five-year terms by direct general elections). According to the Constitution, he represents the Republic of Slovenia and is commander-in-chief of its defence forces. The executive authority is vested in the Prime Minister and the 16-member cabinet. For the policies it adopts, the Government is responsible to the National Assembly. On the local level, 58 administrative units perform the Government's tasks.

The vast majority of the 1.96 million population are Slovenes (83 % - 2002 Census). Italians and Hungarians are considered indigenous minorities with rights protected under the Constitution. Other ethnic groups - which mostly arrived in Slovenia after WW II as economic immigrants - identify themselves as Croats, Serbs, Muslims, Yugoslavs, Macedonians, Montenegrins and Albanians. The population density is about 98 inhabitants per sq. km.

There are Slovenian indigenous minorities in Italy, Austria and in Hungary. Ethnic Slovenes, living outside national borders, number between 250,000 and 400,000 (depending on the inclusion of second and other generations) with the vast majority of them living overseas and in the countries of the EU.

The majority of people are Roman Catholics, although there are small communities of other Christian denominations (in particular Protestants in the eastern parts of the country) and of Muslims and Jews.

In its 11 years of existence, Slovenia has privatised its economy, stabilised inflation and wage growth, halted the rising unemployment, strengthened its currency, relaxed the flow of capital, and modernised its taxation system. Slovenia is experiencing stable growth of its gross domestic product (2.7% in 2002), and 8.6% inflation in 2001. The active working population comprises 49.5% of the total, 46.2% of all women being in the active population group, and 6% of unemployed in 2002. University graduates represent a high proportion and 12% of all people aged between 25 and 64 have higher education. More than 11,000 students graduate annually from university-level education. In 2000, there were 21.4 doctors and 5.8 dentists: 70 nurses and 54 hospital beds per 10,000 inhabitants.

Area	20,273 square km	
Population	1.96 million	
Exchange rate	1 € = 230 SIT	
Economy	2001	2002
- GDP growth	3%	2.7 f%
- Inflation	8.6%	7.5%
- Unemployment	6.0%	6.0%

Table 1 – Basic data for Slovenia

Source: SORS, 2003

Ratings of Slovenia on three International indexes:

Index	Rank	Source
a) Technological Achievement Index 2000-2001	23 of 72 countries (score: 0.458 out of 1)	UNDP
b) Network Readiness Index 2001-2002	29 of 84 countries (score: 4.24 out of 10)	World Economic Forum
c) Growth Competitiveness Index	28 of 80 countries (2002)	World Economic Forum

Table 2 – Slovenian ratings on several IS indexes

International indexes of IST:

- a) The technology achievement index (TAI) measures achievements, not potential, effort or inputs. It is not a measure of which country is leading in global technology development, but focuses on how well the country, as a whole, is participating in creating and using technology. The TAI focuses on four dimensions of technological capacity that are important for reaping the benefits of the network age:
- *creation of technology* refers to the number of patents granted per capita, and receipts of royalty and license fees from abroad per capita; *diffusion of recent innovations* refers to the diffusion of the Internet and to the exports of high- and medium-technology products as a share of all exports; *diffusion of old innovations* refers to penetration of telephones and electricity. Both indicators are expressed as logarithms and capped at the average OECD level; *human skills* refers to a mean years of schooling and gross enrolment ratio of tertiary students enrolled in science, mathematics and engineering (for more info. on TAI see <http://www.undp.org/hdr2001/techindex.pdf>).
- b) The Network Readiness Index (NRI) is defined as the degree to which a community is *prepared* to participate in the Networked World as well as community *potential* to participate in the Networked World in the future (for more information see http://www.cid.harvard.edu/cr/pdf/qitr2002_ch02.pdf).
- c) The overall Growth Competitiveness Index (GCI) aims to measure the capacity of the national economy to achieve sustained economic growth over the medium term, controlling for the current level of development (for more information see <http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CReports%5CGlobal+Competitiveness+Report+2002-2003>).

4 ICT Infrastructure and Security

A large number of telecommunications and access indicators were piloted in the SIBIS surveys. Although these were still a subset of the number that was originally presented to go forward in previous SIBIS work, they nevertheless constitute a large quantity of data to analyse.

4.1 Telecommunications and Access

This chapter contains the analysis of relevant indicators on use of computer, use of e-mail, Internet access and use, methods of Internet access, effects of Internet use, access to mobile phone and effects of mobile phone use. Beside the latest figures from the SIBIS GPS-NAS survey (module A) it presents also some of the time series data from other sources identified in WP2 report for Slovenia. It also contains results of the relevant and interesting compound indicators e.g. the T&A Snapshots.

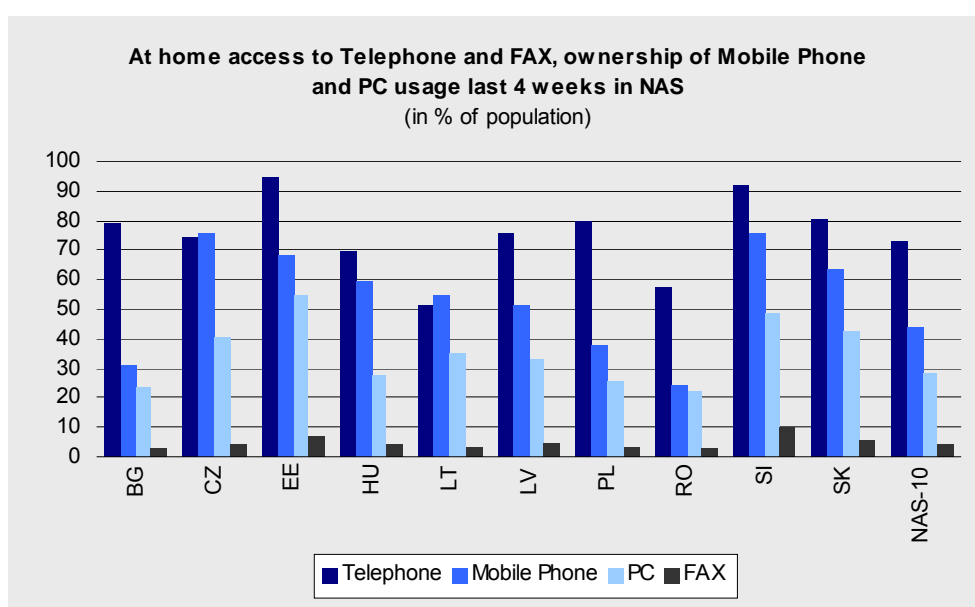


Figure 1 – Basic ICT penetration

Base: all respondents, weighted column percentages

Questions: A1, A19a, A19b, A19c

Source: SIBIS 2003, GPS-NAS

The Slovenian population is well equipped with four basic ICTs: fixed telephone, fax, mobile phone, and PC (Figure 1). Compared to other NAS countries included in the SIBIS+ survey (Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovakia) it has the highest percentage of mobile phone users (76% vs. NAS-10 43%) and access to FAX (10% vs. NAS-10 4%). For the fixed telephone and PC Estonia has the largest percentage (95% and 55% respectively) closely followed by Slovenia (92% and 48% respectively).

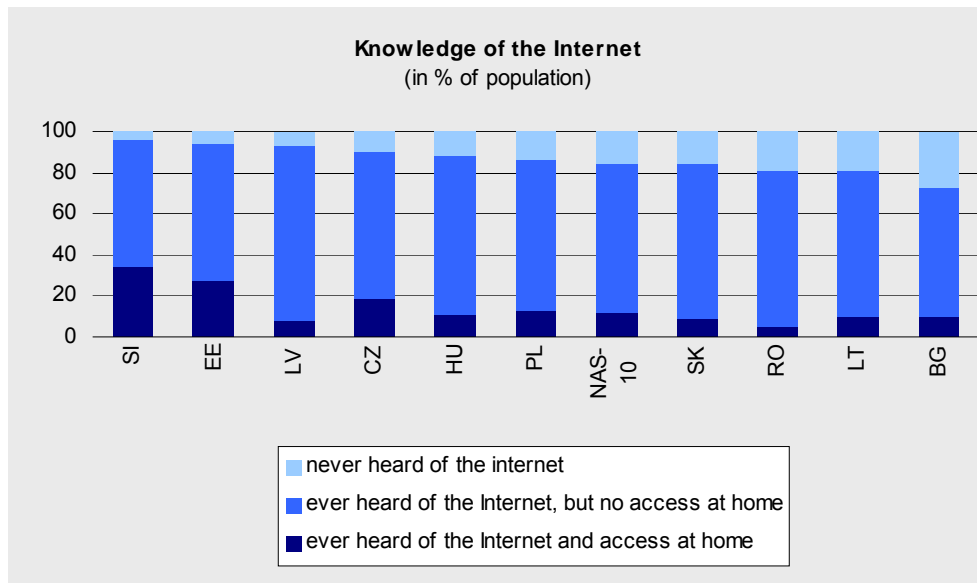


Figure 2 – Knowledge of the Internet and Internet access at home

Base: all respondents, weighted column percentages

Questions: A5a, A5b

Source: SIBIS 2003, GPS-NAS

Slovenia is the leading NAS country in the Internet access from home, and also in general knowledge about the Internet (Figure 2). In Slovenia, Internet access from home is three times as high as the NAS average (Slovenia 34% vs. NAS-10 11%), and the share of the Slovenian population which has never heard of the Internet is three times lower than in total NAS population (Slovenia 4% vs. NAS-10 15%). However, the comparisons with EU are not so favourable.

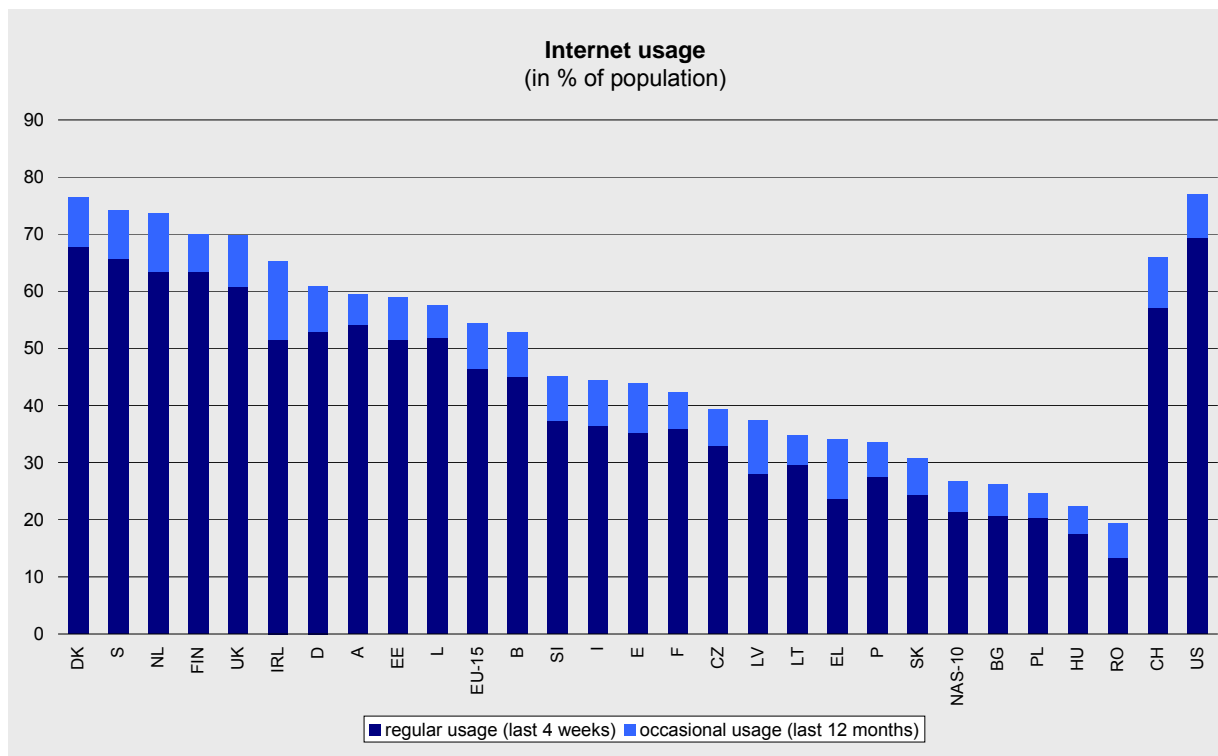


Figure 3 – Regular and occasional Internet usage

Base: all respondents, weighted column percentages

Questions: A7, A8

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

According to the SIBIS data, among the NAS countries only Estonia, with its exceptionally high percentage of Internet usage, is ahead of Slovenia, having 45% of Internet users in 15+ population (Figure 3). Notably, the Estonian percentage (59%) is also above the EU average (55%). Slovenia is also ahead of some EU countries (Italy, Spain, France, Portugal, and Greece). The data confirms the RIS past and current measurements, and a somewhat 10%-20% lag compared to EU-15 in Internet usage. In Slovenia there are 37% of the population, who have used the Internet in the last four weeks¹ (EU-15 46%), and additional 8% of the population who have used the Internet in the last 12 months² (EU-15 9%).

The percentage of Internet users differs when respondents are asked about the usage in one question 'Do you use Internet?' (as in SIBIS or RIS surveys) compared to Flash Eurobarometer and Eurostat surveys, where the usage at each location is questioned, e.g. 'Do you personally use the internet: at home, at work, at school, college, university, from a public access point (library, City Hall, etc.), in a cyber café, at a friend's, an acquaintance's, a relative's place, on the move from laptop, on the move handheld/pocket, on the move mobile phone, elsewhere?' The former question usually provides the lower rate of Internet penetration (more than 5%) than the latter. The time series from 1996 for the penetration of Internet (and comparison with EU) in households is in Annex 1 (Figure 25).

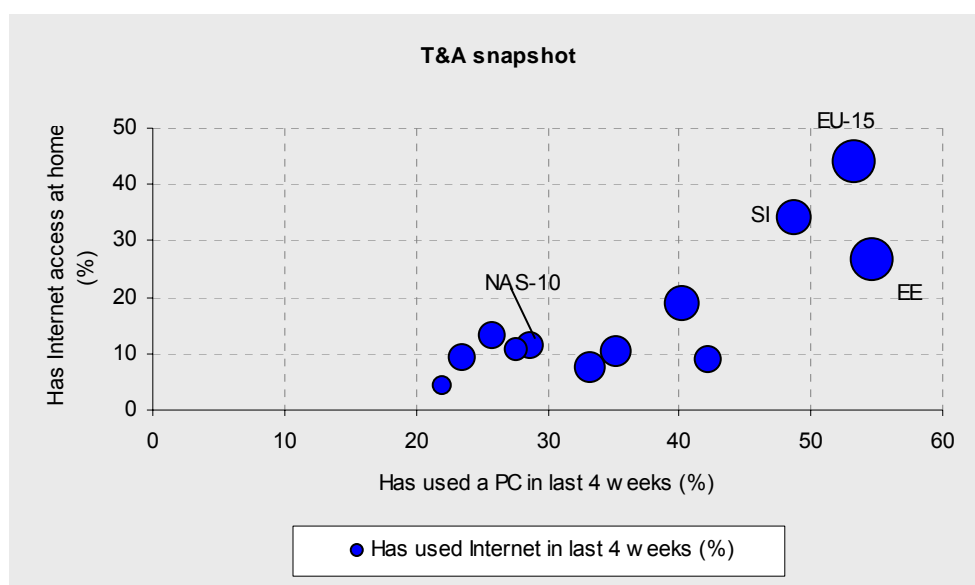


Figure 4 – T&A snapshot: PC users in last 4 weeks (axis x); Internet access at home (axis y); Internet usage in last 4 weeks (bubble size)

Base: all respondents, weighted column percentages

Questions: A1, A5b, A7

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

The snapshot in Figure 4 presents all the NAS countries and the EU average of three basic T&A indicators: PC usage in the last 4 weeks, Internet access at home and Internet usage in the last 4 weeks. All three indicators seemed to be in high correlation. This can be explained by the person's overall inclination to ICTs. Slovenia lags behind the EU average in PC usage by 4% (49% vs. 53%), and 10% in access to Internet at home (34% vs. 44%). Other NAS countries, except Estonia, are far behind Slovenia, particularly with respect to the Internet access at home.

¹ Persons, who have used Internet in last four weeks, are defined as regular Internet users.

² Persons, who have used Internet in last 12 months, are defined as occasional Internet users.

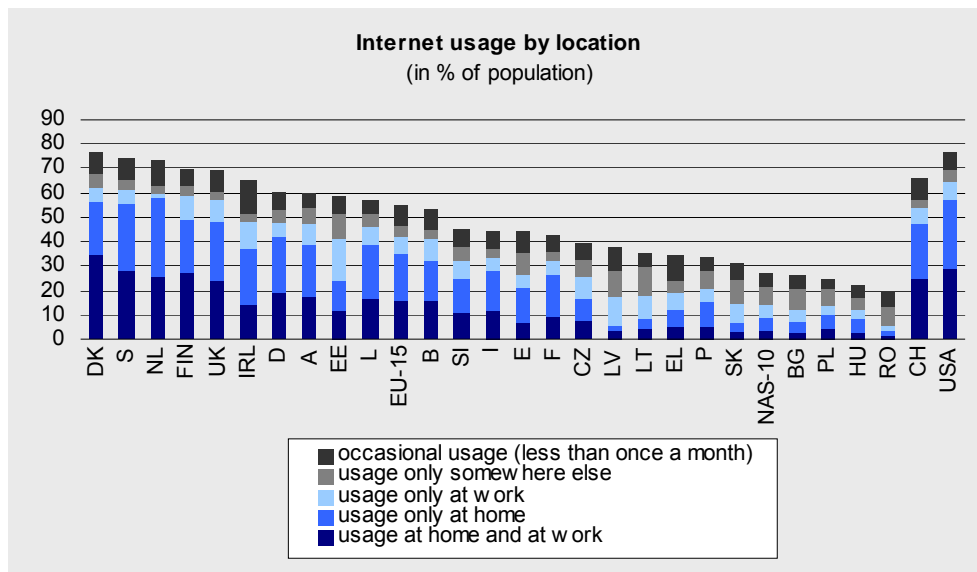


Figure 5 – Internet usage by location of use

Base: all respondents, weighted column percentages

Questions: A9, A7, A8

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

Considering Internet usage locations (Figure 5), the SIBIS data show that, in Slovenia, Internet usage from home is prevalent: Slovenia and Estonia are closer to the EU-15 and the USA than to other NAS-10 countries, where the prevailing location of Internet usage is at work. In Denmark, where the usage of Internet in population 15+ is the highest (77%), the largest part of population is using Internet both from home and work.

Of course, although the proportions of Internet usage locations are similar to the EU-15 and the USA, the absolute percentages of users in all locations in Slovenia are lower due to lower Internet penetration in general.

The SIBIS/SIBIS+ results also indicate that people aged between of 24 and 49 show much higher adoptions rates of both high speed and slow at-home connections (see Annex 1, Figure 29). This correlates well also with other indicators. For example, the young are also more likely to migrate from low-speed to higher speed connections, and are traditionally described as early technology adopters. It is also the young who tend to be more interested in downloading digital media, thus they show a higher interest in upgrading to broadband.

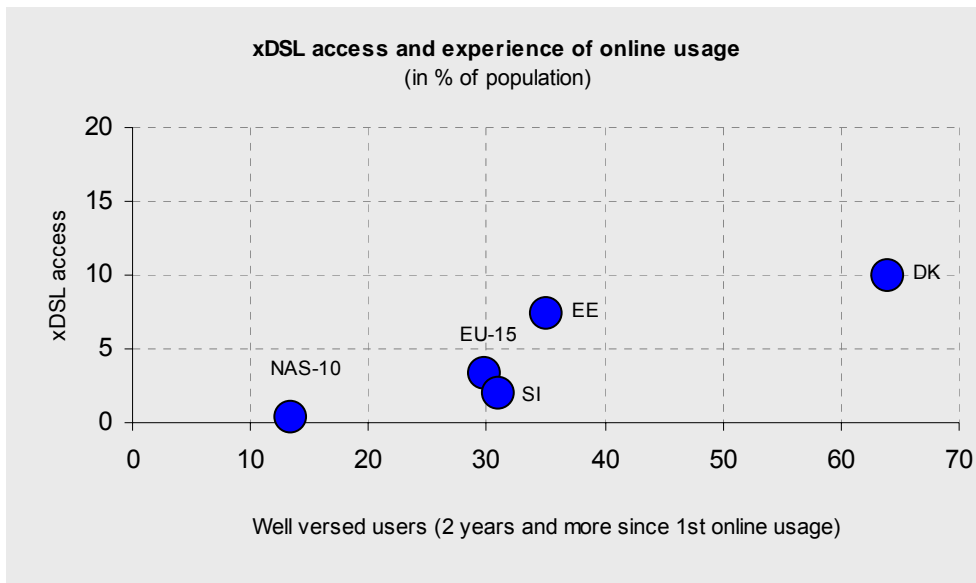


Figure 6 – xDSL access and well versed users (2 years and more since 1st online usage)

Base: all respondents, weighted column percentages

Questions: A10, A11b

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

In the SIBIS+ survey, the question on the method of Internet access differentiates between 4 methods: dial-up modem, ISDN, xDSL and ‘other’. Therefore, only the xDSL method can be considered as broadband, whereas other broadband access methods, e.g. cable, leased line etc., are included in the category ‘other’, and might not be differentiated.

Here, Slovenia (2%) is ahead of the NAS average (0.4%) with xDSL access, but behind the EU (3.4%) (Figure 6). In addition, Slovenia is far behind Estonia (7.5%), which is approaching the position of the best-standing country - Denmark (10%).

We should add that in Slovenia a specific formal delay occurred with respect to xDSL, causing a one-year delay in the adoption. In addition, the omitting of the separate category of cable access overlooks this very strong component of Slovenian household access (see Annex 1, Figure 27 and Figure 28), which is – similar to ISDN – above EU average.

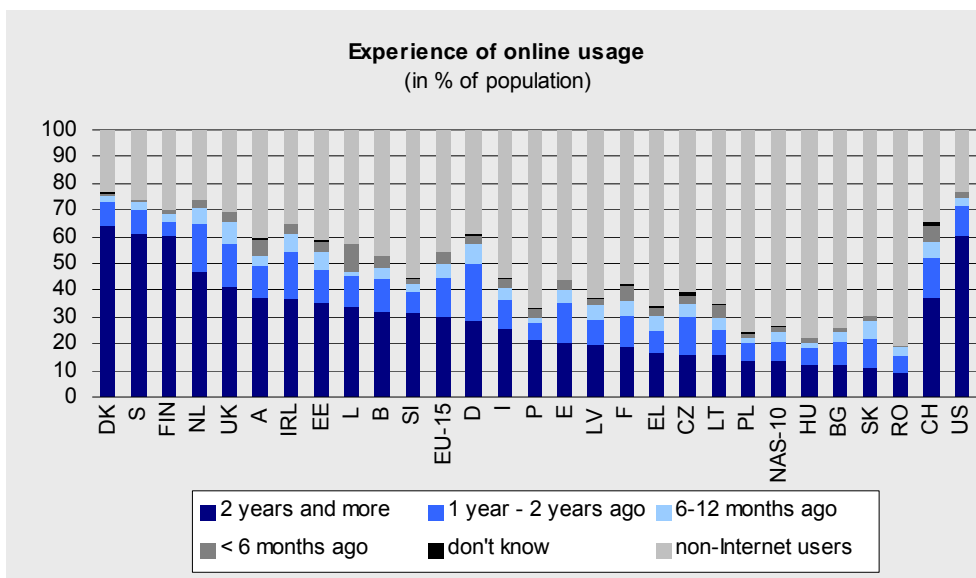


Figure 7 – Experience of online usage

Base: all respondents, weighted column percentages

Questions: A10

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

Considering the experience of online users, Slovenia is slightly above the EU average, with 31% of the population using the Internet for 2 or more years (EU-15 30%) (Figure 7). On the other side, the share of less experienced or new Internet users in Slovenia is among the lowest: 3.2% users began to use the Internet 6-12 months ago, 1.5% users began to use the Internet less than 6 months ago (EU-15: 5.9% and 3.8% respectively). Lower percentage of users who began to use the Internet less than 6 months ago can be observed only in Denmark, Finland and Sweden (but there, due to their saturated level of penetration), and in Romania (due to extremely low penetration).

This discrepancy in Slovenia is a consequence of a relatively high penetration of the Internet at the beginning, and a decline of penetration in the recent period. In addition, this fits well into the explanation of smaller usage increase in the past year. It seems now that the non-users are turning to the Internet usage with relatively smaller speed in Slovenia.

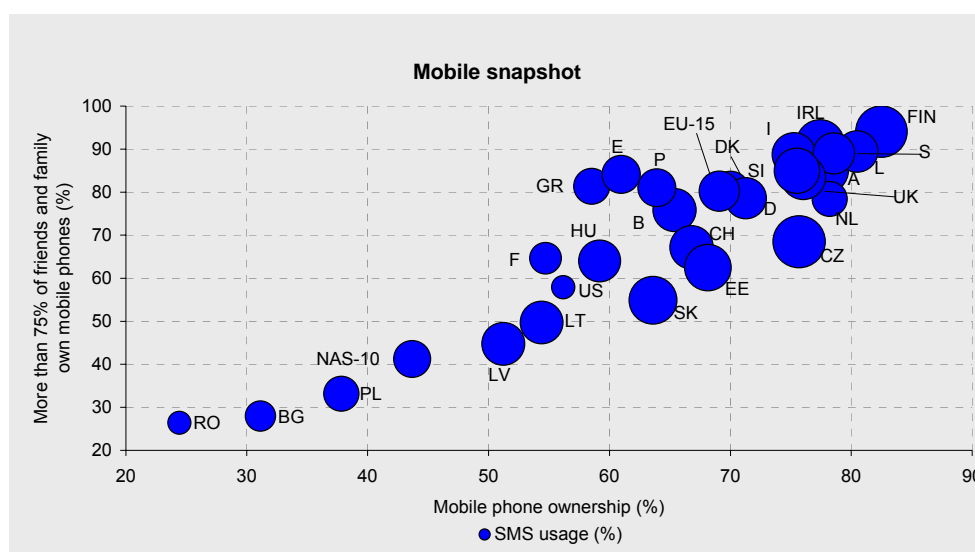


Figure 8 – Mobile snapshot: mobile phone ownership (axis x); more than 75% of friends and family own mobile phones (axis y); high SMS usage (bubble size)

Base: all respondents, weighted column percentages

Questions: A19c, A20, A27

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

Let us observe another important personal ICT device – the mobile phone (Figure 8). In Slovenia, the penetration of mobile phones among IST population is 76%, which is above EU (69%) and NAS (44%) averages. In the area of mobile phone ownership and usage (particularly SMS), Slovenia is thus positioned within the group of the most developed countries. Observing simultaneously mobile phone ownership, share of population, who have more than 75% friends or family owning mobile phones, and SMS usage, Slovenia is also above both NAS and EU averages, with Finland in leading position. In general, a sharp increase is observed from 2001, when the share of owners of mobile phones was 60% (source: RIS, 2001).

Of course, the ownership and the usage of mobile phones could be considered as two distinct indicators. The former might be considered as the physical ownership of the mobile phone device, but not necessary the usage of the same. Contrary, the use of the mobile phone does not necessarily indicate the ownership of the device.

To summarize the telecommunication and access indicators, it seems that Estonia, among all the NAS countries, is the most developed. However, in many aspects (Internet access from home, mobile phone usage) Slovenia is still the leading NAS country, although the Czech Republic, Hungary, Latvia and Lithuania are all approaching very fast. Here, we

should repeat again, that Slovenia is typically ahead of France, Italy, Portugal, and Greece, but this advantage is shrinking even faster than in the case of above-mentioned NAS countries.

4.2 Security

This section gives a brief look into the security topic and privacy.

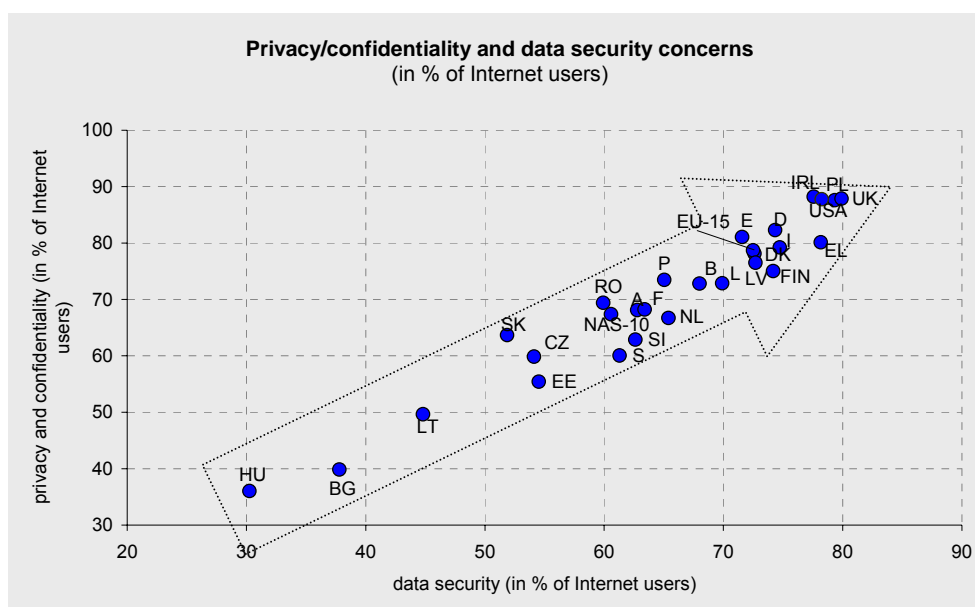


Figure 9 – Concerns about privacy/confidentiality and data security
 Base: regular Internet users, weighted column percentages
 Questions: J1a, J1b
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Internet users are strongly concerned both about privacy/confidentiality and data security. Concerns (particularly about privacy) seem to be lower in continental Europe than in the UK, Ireland or the US. Whether this is caused by a higher degree of negative experience, more trust in the functioning of society-at-large or the level of awareness, is not yet clear. From Figure 9 it can be observed that both types of security concerns substantially correlate.

In Slovenia, the percentage of Internet users concerned about online security is almost equal for both privacy/confidentiality and data security. The percentage is lower than the average of the NAS regarding privacy/confidentiality and slightly higher for data security. Compared to the average EU share, the Slovene population has, regarding both questions, a lower percentage: 66% are concerned both about privacy/confidentiality and data security (EU-15 79% and 72% respectively). It thus seems that this is not a very critical issue for Slovenian Internet users.

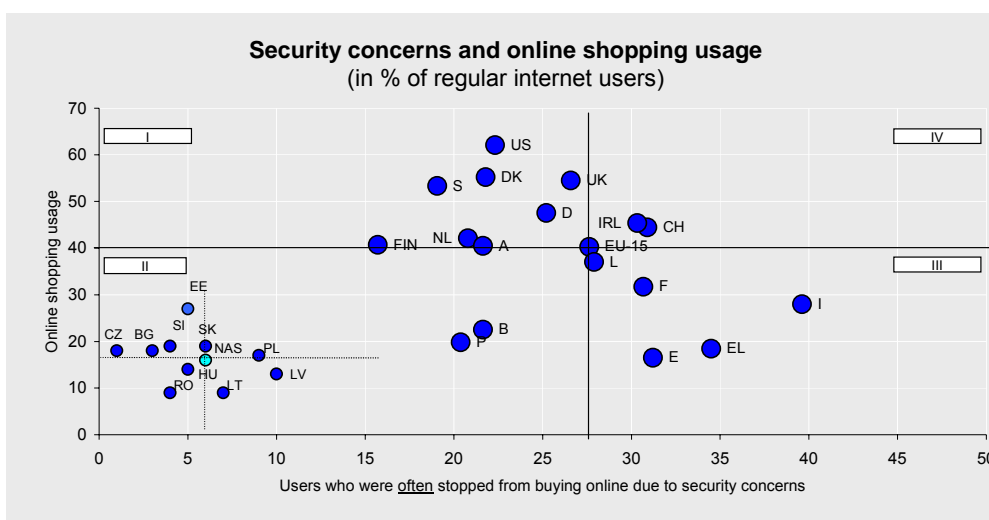


Figure 10 – Users who were often stopped from buying online due to security concerns and online shopping usage

Base: regular Internet users, weighted column percentages

Questions: B1b, B1c, J2

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

SIBIS data show that security concerns have a strong impact on on-line shopping behaviour in Europe as well as the United States. (Figure 10). In the EU, for instance, almost 30% of Internet users stated that they would often be stopped from buying on-line because of their concerns. However, it is apparent that divergences exist among countries. Whereas some countries, which could be defined as ‘front-runners’, are limitedly affected by their security concerns and have accepted e-commerce as a relatively common practice (Quadrant I), others, the ‘laggards’, show lower than average e-commerce usage and strong impact of security concerns (fig. Quadrant III).

Benchmarking all countries against the EU average, shows that northern Europe together with the United States are the front-runners, while Mediterranean countries are still lagging behind. All NAS fall into quadrant II, where both e-Commerce and the effects of security concerns on e-Commerce are limited, which could be related to the fact that the share of regular Internet users (and thus e-buyers) is lower in the NAS than in the EU. If we benchmark individual NAS against the NAS rather than against the EU average, it appears that, in this case too, the split between front-runners and laggards is marked: some countries, such as Estonia, are clearly on their way towards the EU best performers; others still have a long way to go (Romania, Latvia, Lithuania).

Slovenia is positioned in quadrant II, meaning that the online shopping usage is low as well as are concerns about security. On the one hand, it signifies the lack of e-commerce services in Slovenia. On the other hand, the lowest percentage of users, often stopped from buying online due to security concerns (Slovenia 3.8% vs. EU-15 28%), also indicates a relatively non-contagious Internet, and the potential for unconstrained acceleration of e-commerce in Slovenia.

More details on security issues can be found in Vehovar et al. (2003), available also on www.ris.org/security.

5. e-Society and Social Inclusion

Social inclusion is inextricably linked to the issues of (accessing and maintaining) employment, education, housing and healthcare. At the same time, these issues/phenomena provide the basis for most tangible indicators for measuring inclusion. Against this background there has been a predisposition to view divisions in relation to the Information Society as being just an extension of divisions from 'pre-Information Society'. This requires a multi-perspective view that includes attention to differential levels of access [to the ICTs] across various subgroups of population whilst also looking at issues such as 'unpacking' of the very concept of access. In this chapter indicators on barriers to Internet usage are presented with connection to the Internet usage, digital divide index (DIDIX), and Internet dropouts.

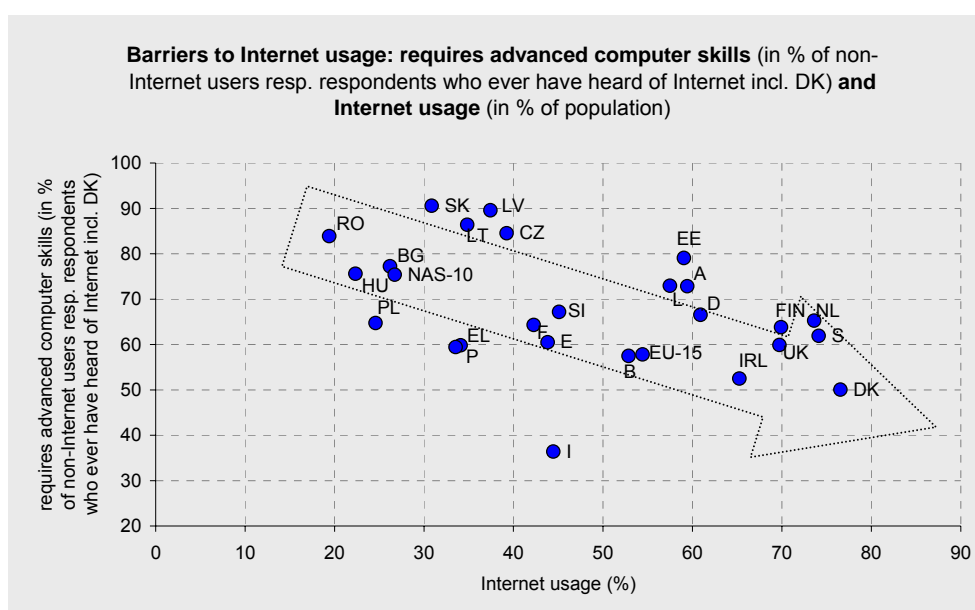


Figure 11 – Barriers to Internet usage: 'Internet requires advanced computer skills', and Internet usage

Bases: EU-15 countries: occasional and non Internet users resp. all respondents, NAS-10 countries: respondents who ever have heard of the Internet (inc. don't know) resp. all respondents, weighted column percentages

Questions: A8, A18a

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

The percentage of non-Internet users who at least somewhat agree that the Internet requires advanced computer skills is the highest among all measured barriers. In almost all countries the population percentage is above 50%. Slovenes (67%) are positioned lower compared to NAS (75%) average, but higher than the EU average (58%). This also pertains to the barriers 'Internet is too expensive to use' (Figure 12). In Slovenia the other measured barriers among non-Internet users are not as prominent as the two above-mentioned. By the barriers 'Internet is too time consuming', 'Internet is not easy to get access to' and 'Internet lacks interesting information' Slovenian percentage is even lower compared to both EU and NAS average (see Annex 1, Figure 38).

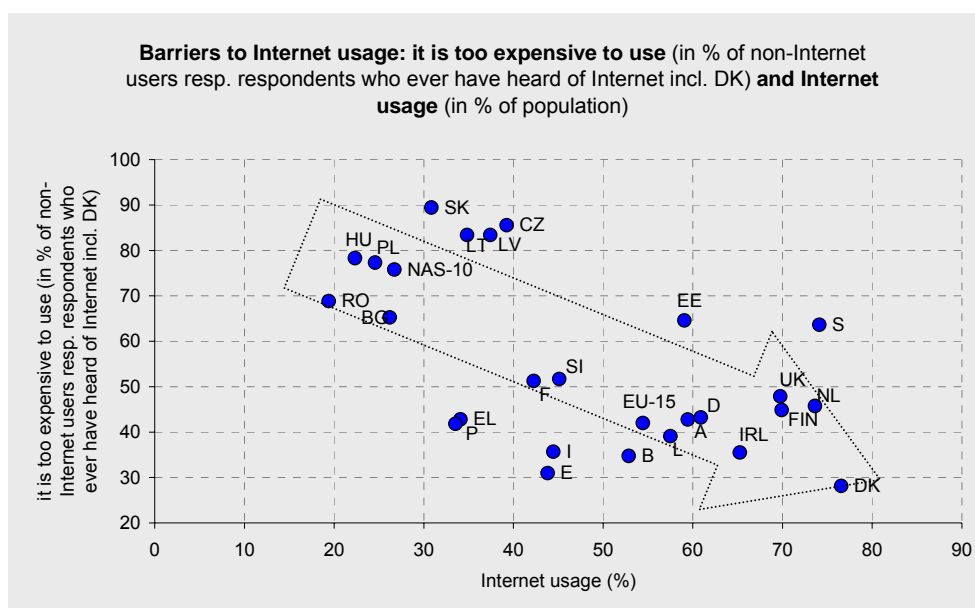


Figure 12 – Barriers to Internet usage: 'Internet is too expensive to use'; and Internet usage

Bases: EU-15 countries: occasional and non Internet users resp. all respondents, NAS-10 countries: respondents who ever have heard of the Internet (inc. don't know) resp. all respondents, weighted column percentages

Questions: A5a, A8, A18d

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

The second most visible gap in comparisons of barriers between Slovenian and EU averages are the costs of Internet usage. Here, Slovenia also displays a higher percentage of non-Internet users, who agree that the Internet is too expensive to use than the EU-15 (Figure 12). Slovenia is positioned in the middle with 51% of non-Internet user agreeing with the statement (EU-15 42%; NAS-10 77%). It thus seems that the perception of an expensive usage of the Internet and insufficient computer skills prevents the proliferation of the usage among non-Internet users. This can be clearly observed in the countries with lower Internet penetration, which are more likely to perceive the costs and the insufficient ICT skills as the barriers, and vice versa. The gaps between Slovenia and EU-15 at these two barriers are the highest among all measured barriers, though the explanation particularly applies to Slovenia.

However, these two barriers still have the 'natural' value that belongs to the country with around 9% gap in Internet penetration. This can be confirmed also in the Figure 11 and Figure 12, where Slovenia is in the very centre of regression line.

More surprising is the fact that all other barriers do not behave in the same way, but they are much lower than they should be (and also typically lower than EU and NAS average) according to the level of Internet penetration in Slovenia (Appendix, Figure 38).

As the barriers seem too be the key element to understand the essence of Slovenian position, we analyse them in somehow larger detail in Annex 1 (Figure 30 to Figure 37).

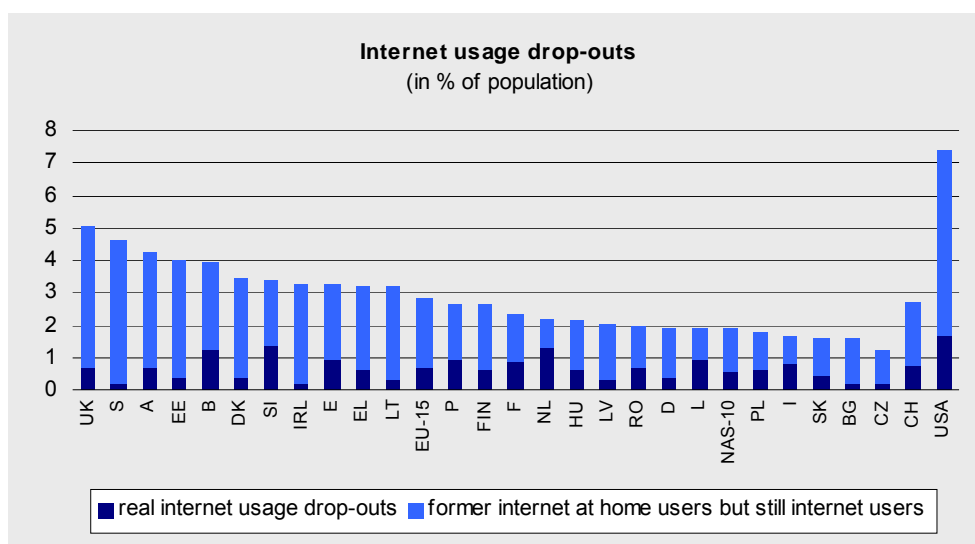


Figure 13 – Internet usage dropouts: persons who stopped to use Internet

Base: all respondents, weighted column percentages

Questions: A5a, A5b, A6

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

Persons who once used the Internet, but stopped to use it are in the SIBIS context understood as the ‘dropouts’, and are divided into ‘real dropouts’ and ‘at home dropouts’. The former are those who do not use Internet anymore (regardless of location of usage) and the latter stopped to use Internet at home, but otherwise still use it. The highest real Internet dropouts among all 25 countries are observed in Slovenia (1.3% vs. EU-15 0.7%). In all countries there is even higher percentage of former Internet at home users, who still use the Internet at other locations: here Slovenia equals the EU average (Slovenia 2% vs. EU-15 2.1%). Overall, regarding all dropouts, Slovenia is ranked in 7th place. This somewhat confirms the lack of sufficient attractive content in the Slovene language.

Let us observe the Digital divide index (DIDIX), which is a compound indicator consisting of three selected indicators (in the table below) presenting the dependant variable, and four independent variables.

Indicator	Definition	Weight
Percentage of computer users	Data are based on the SIBIS survey question: ‘Have you used a PC, Mac or any other computer, for work or for private purposes - in the last four weeks?’	50%
Percentage of Internet users	Data are based on the SIBIS survey question: ‘Have you used the Internet at least once in the last four weeks, at home, at school or work or at any other place?’ ‘Internet users’ are defined as those who use a computer at least at one of the given locations, e.g. ‘at work’, ‘at home’ ...	30%
Percentage of Internet users at home	Data are based on SIBIS survey question: ‘Do you have access to the Internet in your home?’	20%

Table 3 – Dependant variables for DIDIX and their definitions

Source: Selhofer and Hüsing, 2003

Independent variables are presented in Table 4 and refer to the ‘risk group’.

Independent variable	Definition of the disadvantaged group ('risk group')	Percentage of population in EU (2000)
Gender	Women	~ 52%
Age	people aged 50 years or older ("50+")	~ 40%
Education	low education group (= people who finished formal school education at an age of 15 years or below)	~ 30%
Income	low income group (= the lowest quartile of the survey respondents)	~ 25%

Table 4 – Independent variables in DIDIX: risk groups
Source: Selhofer and Hüsing, 2003.

The overall Divide Index has been calculated as the mean of the four indices. It represents the ratio between the mean population percentage and the mean percentage of the risk group. The larger the gap (100% means no gap), the lower the likelihood of the risk group to use computer/Internet compared with the population average.

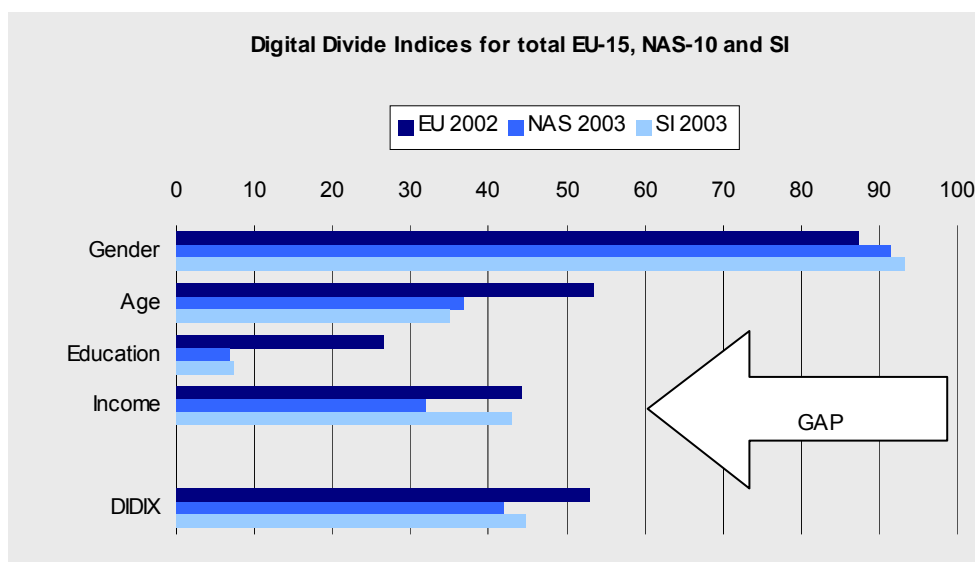


Figure 14 – Digital Divide Indices for EU-15, NAS-10, and SI: by gender, age, education, income, and overall
Base: 1997, 2000: N=15,900, weighted by standard Eurobarometer country and EU-15 weights; 2002, 2003: all respondents, weighted percentages
Questions: 2002, 2003: IN1, IN3, Z19, Z21
Sources: 1997: Eurobarometer 47.0, Jan-Feb 1997; 2000: Eurobarometer 54, Oct-Nov 2000; 2002: SIBIS 2002, GPS; 2003: SIBIS 2003, GPS – NAS

The NAS countries DIDIXs are measured for the first time in the SIBIS 2003 survey, whereas the measurement of DIDIX for the EU was already conducted in 1997 and 2000 (see Annex 1, Figure 39 and Figure 40). In the EU countries, the risk groups are on average 53% as likely to use PC/Internet as the average population (Figure 14). In the NAS countries, the risk groups are on average 42% as likely to use them. Slovenian DIDIX (45%) is above the NAS average, although significantly below EU average. Compared to other NAS countries Slovenia DIDIX is below Estonia, the Czech Republic and Poland (see Annex 1, Figure 39). In Slovenia, the most dramatic gap is observed by education: 7% vs. 27% EU-15. The second largest gap is observed by age: 35% vs. 53% EU-15, and is even larger compared to NAS-10 (37%). Income gap is similar to EU average (Slovenia 43% vs. EU-15 44%), while there the gender gap is even smaller compared to EU.

We can thus observe a strong discrepancy with respect to education and age, but relatively less with respect to income and gender. One explanation would be that, in Slovenia, the

older persons and less educated (where a considerable gap is observed) have a relatively high income (where smaller gap exists). In addition, we can also observe a large gap of the Internet usage between disabled (i.e. existence of health limiting conditions) and non-disabled population if compared to EU average: the ratio for Slovenia is 16% vs. 53%, and 34% vs. 58% in EU-15 for disabled and non-disabled respectively (see Annex 1, Figure 41). Conversely, Slovenia (and NAS countries on average) has much higher percentage of regular Internet users who would feel socially excluded if there was no Internet than EU-15 (see SIBIS Pocketbook 2002/2003, p. 171).

6. e-Education and Life-long-learning

In the SIBIS context, education is understood as a formally institutionalised process of knowledge transfer and knowledge development, as opposed to informal learning arrangements taking place through various communities of practice arrangements, on-the-job training and peer learning. In this chapter, the indicators of lifelong learning, usage of e-learning, and ICT skills are presented. In an Information Society, the importance of knowledge is constantly increasing. The shortening of the innovation cycle rapidly produces new knowledge, and to stay competitive on the market this knowledge has to be applied. It is of great importance that the labour force assesses new knowledge through permanent education. This improves the chances for job applicants as well as the productivity of the employed. The differences in participation in lifelong learning between the EU and the NAS countries are generally larger compared to differences in T&A indicators. In the EU, 23% of the labour force participates in this kind of learning, while for the NAS, only 10% of the population.

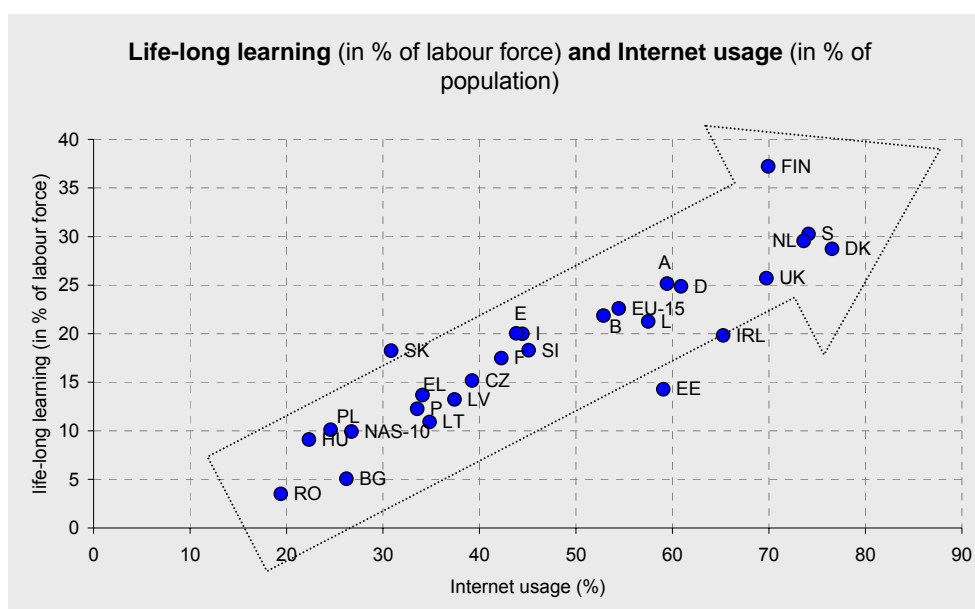


Figure 15 – Lifelong learning and Internet usage

Bases: labour force resp. all respondents, weighted column percentages

Questions: A7, A8, A18e

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

Figure 15 clearly displays the strong correlation between high Internet usage and participation in lifelong learning. Instead of causality, here perhaps the common general IST development factor is strongly correlated with both variables. Here again, Slovenia takes its standard position of the leading NAS country, with a clear lag behind EU average. The gap in lifelong learning compared to the EU was growing 1996-2001 (see Annex 1, Figure 43), what confirms again the specific IST development pattern in Slovenia.

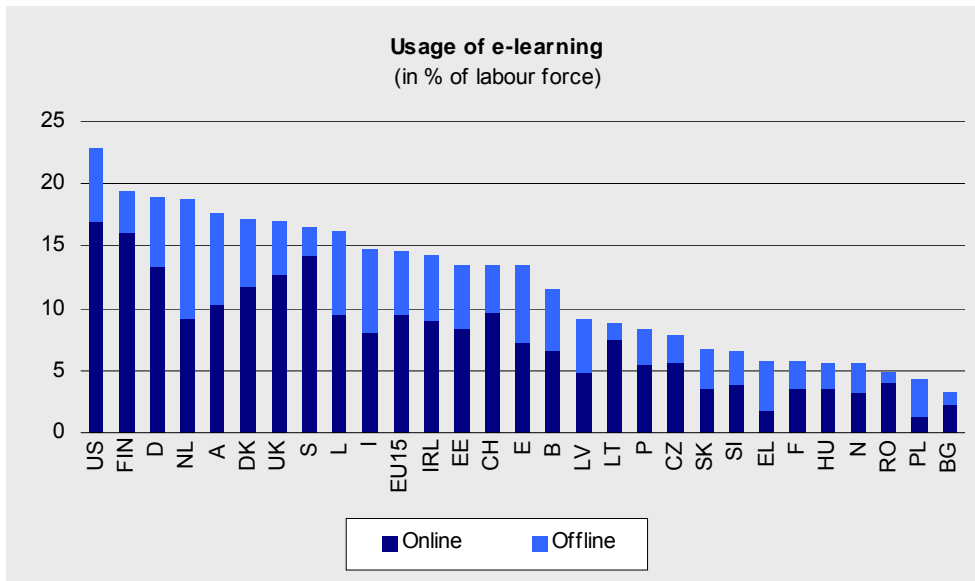


Figure 16 – Online and offline usage of e-learning
 Base: labour force, weighted column percentages
 Questions: C19a
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Much worse is the Slovenian position with respect of e-learning (Figure 16) – only 6.6% of the labour force uses it (EU-15 14%). Here Slovenia lags behind several NAS countries (Estonia, Lithuania, Latvia, Czech Republic, and Slovakia), but is still ahead of France and Greece. The low percentage of Slovenian labour force using e-learning can be partially explained by the relative absence of e-learning programs. In general, the use of e-learning strongly correlates with the use of life-long learning, what again may be due to a common IST development factor (see Annex 1, Figure 42). Again, Slovenia stands on out edge with surprisingly low e-learning relative to life-long learning.

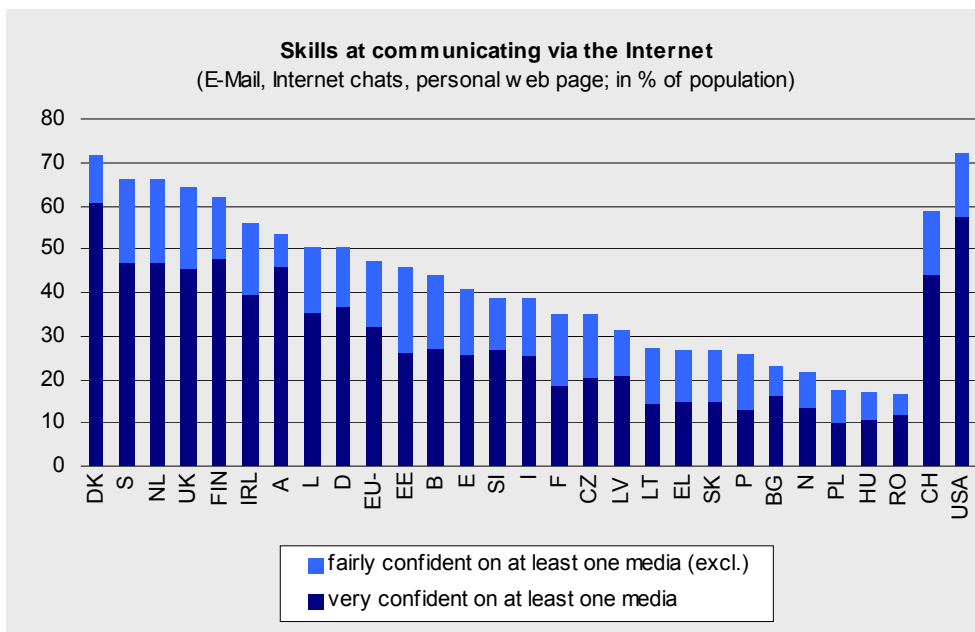


Figure 17 – Skills at communicating via the Internet
 Base: all respondents, weighted column percentages
 Questions: D1c, D1d, D1f
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

The ability to communicate with others via the Internet is a basic skill in Information Society. Half of the EU population regard themselves as very or fairly confident in communicating with

others via the Internet (Figure 17): being confident in using at least e-mail, chat rooms or personal web pages.

Slovenia is positioned in the middle, with 39% of the population being somewhat confident in communicating via the Internet, which is below EU average (47%), but above NAS average and also above Italy, France, Portugal and Greece. Again, this is the typical position of Slovenia with respect to other 'ICT skills' indicators (see Annex 1, Figure 44), what can also be observed in 'COQS index' (Slovenia 0.7, EU-15 0.8, NAS-10 0.3; for details see SIBIS Pocketbook 2002/2003, available on www.sibis-eu.org).

7. e-Economy and e-Commerce

This chapter looks into the e-economy field. Basic e-economy indicators are presented: e-commerce usage, e-banking usage, and their relation to Internet usage. In addition, the time series of e-commerce and e-banking in Slovenia is shown in the Annex 1.

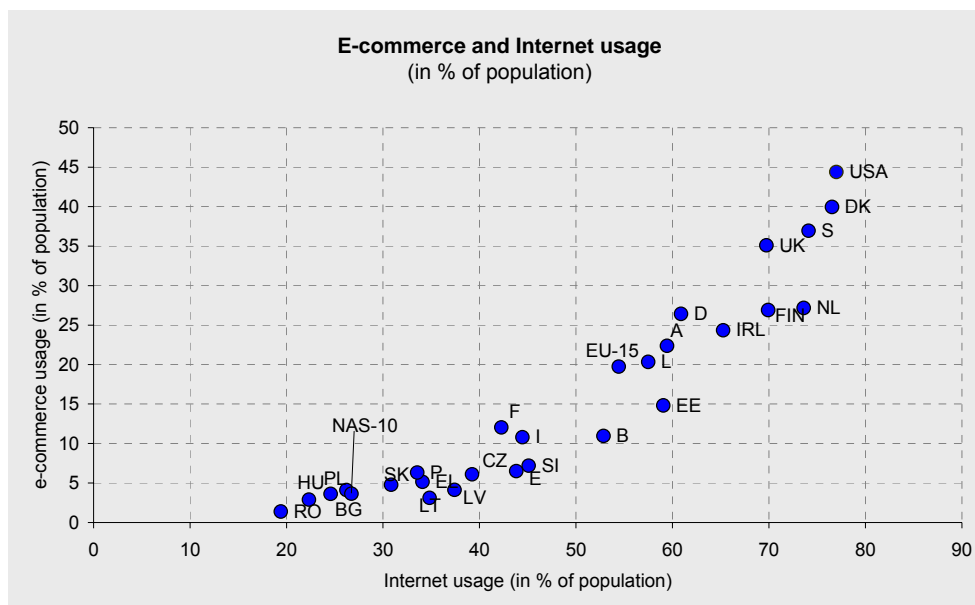


Figure 18 – People who have ordered a product or a service

Base: all respondents weighted column percentages

Questions: A7, A8, B1

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

Compared to all the surveyed countries, Slovenia is positioned in the middle with respect to e-commerce users (i.e. persons who have ordered a product or a service), which is also its typical position in the field of social inclusion and e-education. Here, again, Estonia has the highest percentage (15%) among the NAS countries, and some EU countries are positioned behind Slovenia, Spain, Portugal and Greece. It can be observed, that Internet usage positively correlates with the use of e-commerce. A distinct gap can be found in countries with Internet usage up to 50% (predominantly NAS countries, Portugal, Spain, Italy and Greece) and countries with above 50% Internet usage (Northern EU countries).

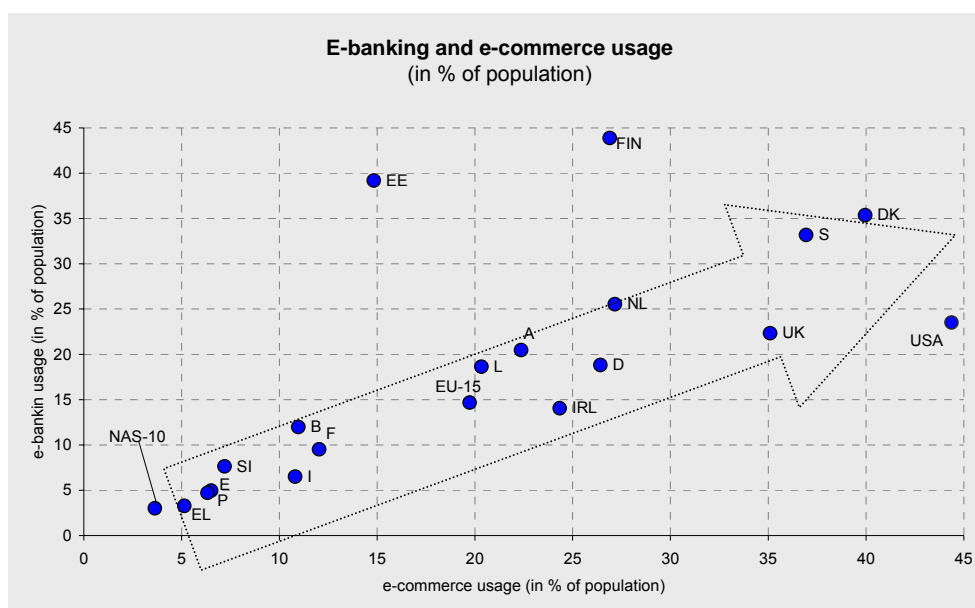


Figure 19 – People who have ordered a product or a service (e-commerce users), or have conducted online banking or bought financial products (e-banking users)
 Base: all respondents, weighted column percentages
 Questions: B1b, B1c
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

The use of e-banking (i.e. persons who have conducted online banking or bought financial products) and e-commerce are in high correlation (Figure 19). However, some countries particularly deviate from the linear slope: e.g. Estonia and Finland, with their outstanding use of e-banking; and USA with its somewhat lower percentage of e-banking users (if compared to e-commerce usage). In Slovenia, there are 7% (EU-15 14%) of e-banking users, and 8% (EU-15 20%) e-commerce users. Slovenia is dramatically behind EU average, but the NAS countries are on average even much more behind Slovenia. Among the NAS countries, Estonia is around EU average with regard to e-commerce usage, and in second place in e-banking usage (Finland is in leading position with 44%).

To summarize this aspect, we can conclude that the e-commerce issues show an extremely large and important lag for Slovenia.

8. e-Work

Work is defined by SIBIS as aimed productive activity. This chapter focuses particularly on the work that relates to ICTs. Indicators of home-based teleworking, interests in teleworking, mobile work, telework in SOHO (small office, home office) are presented here. Analyses of different types of telework in relation to Internet usage are also included.

Telework (or teleworking) has become increasingly popular by the end of the 90's, particularly in the EU countries. At the time of the SIBIS survey, in Nederland there was 21% of the employed population teleworking at least some of their working time (Figure 20). In Slovenia, there is 4.3% of teleworkers among the employed population, which is below EU average (7.3%) and above NAS average (2.9%)

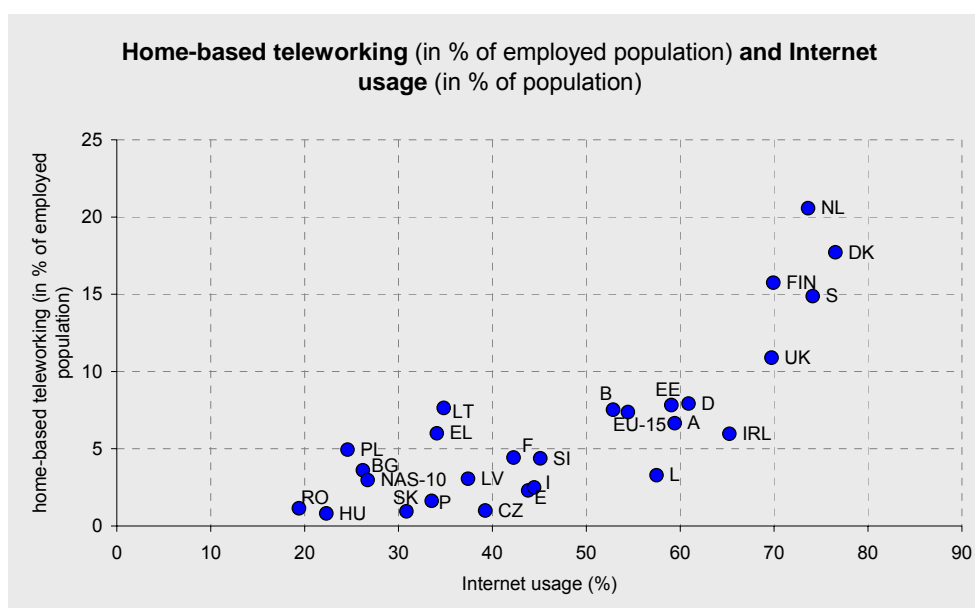


Figure 20 – Home-based teleworking and Internet usage

Bases: all persons employed resp. all respondents, weighted column percentages

Questions: A7, A8, E4

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

Again, there is a clear connection between Internet usage and the use of home-based telework (Figure 20). Countries with high individual Internet penetration have larger percentage of home-based teleworkers. A somewhat steeper increase of home-based teleworkers is found in countries with 60%+ Internet users.

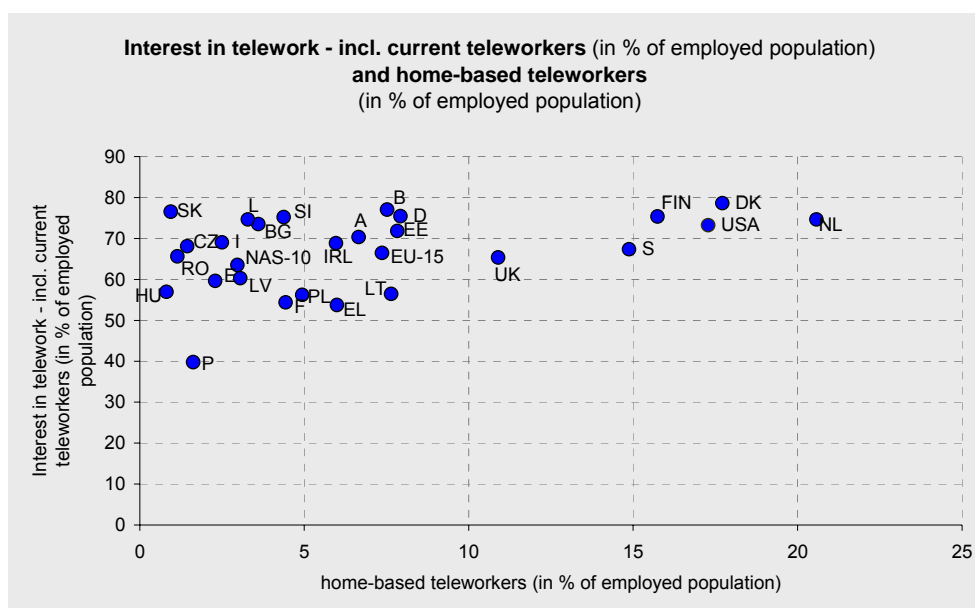


Figure 21 – Interest in at least one type of telework and home-based teleworkers

Base: all persons employed, weighted column percentages

Question: E8

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

In Slovenia, the interest for at least one type of telework is among the highest of all the 25 countries; 75% of the employed population are interested in at least one type of telework (Figure 21). Among the NAS countries, Slovakia has the highest percentage (77%), and EU/NAS averages are closer together than usually (EU-15 67% vs. NAS-10 64%). It can be observed, that the interest for telework is relatively independent of the actual use of home-based telework.

The feasibility of teleworking depends on the access and usage of basic ICTs (PC, Internet access at home) and ICT skills, so the distribution of countries correlates with the individual Internet penetration – with higher penetration, the feasibility of teleworking also increases (see Annex 1, Figure 49). Typically, Slovenia is positioned in the middle, with 21% of employed population feasible for teleworking (EU-15 32%).

The percentage of mobile teleworkers in Slovenia - workers who spend some of their working time away from home and from their main place of work, e.g. on business trips, in the field, travelling or on customer's premises - is low (see Annex 1, Figure 50). The largest percentage is obtained in Finland (6%), while in Slovenia, 3% of the employed population use it (EU-15 4%). The correlation between mobile phone usage and mobile telework is observed, though it is not as obvious as the correlation between the feasibility and Internet usage.

9. e-Government

This chapter focuses on one of the most exposed topics of the Information Society. Indicators are measured according to preference, availability, and usage of e-government. We present here the 'tax declaration' and 'search for books in public libraries', while other e-government indicators are included in Annex 1: 'use of job search services', 'requests for personal documents', 'car registration', 'declaration to the police', and 'announcement of the change of address' (Figure 52 to Figure 57).

Generally, e-government designates any transaction that involves the government and is carried out, even partially, using electronic means. E-government plays an important function in mediating government actions and its role will continue to grow as communications technologies become more widespread. Already, communications technologies change the way that government operates by facilitating information dissemination, communications and transactions.

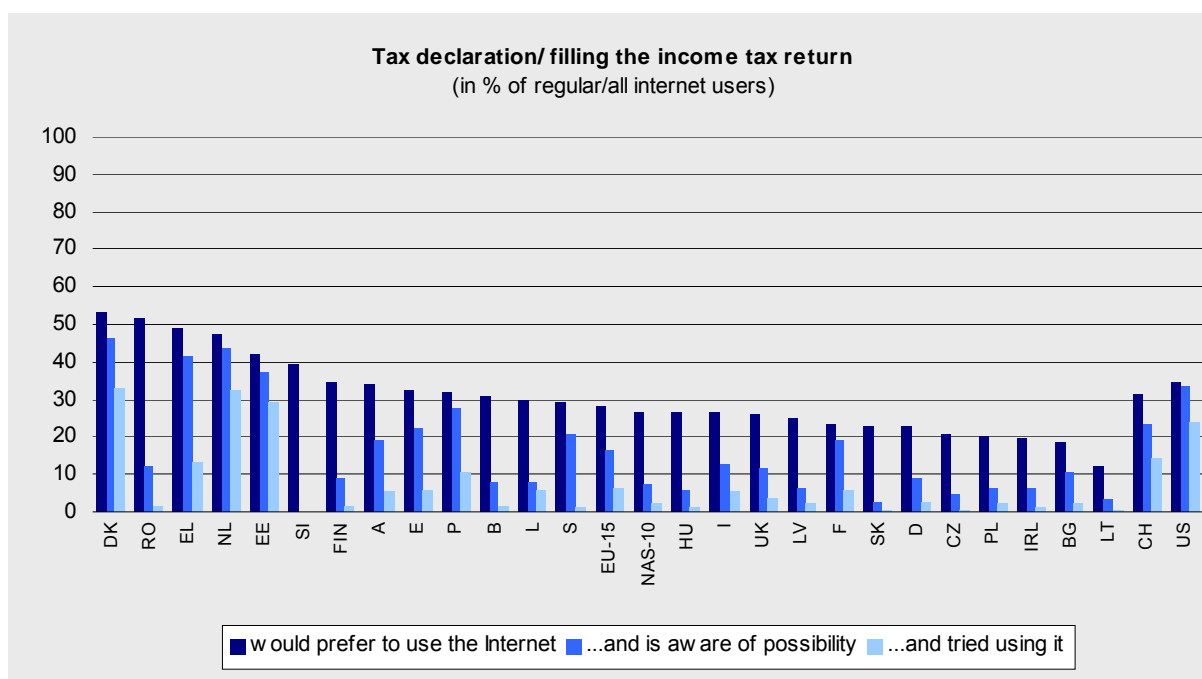


Figure 22 – Tax declaration/filling the income tax return

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

Question: K1a

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

Internet users were asked whether they prefer to use the Internet to fill their tax declaration; those who prefer to use the Internet for this service were asked whether this service was available online in the region where they live (as far as they know). If they believe that the service is available online, they are asked if they have ever tried to use this online tax declaration service. The same logic is used on other e-government indicators. In general, citizens are not very willing to use the Internet for this purpose, but for those citizens who prefer to use the Internet, the awareness of availability and usage of the online services is relatively high. Slovenes are highly interested in on-line tax declaration (40% of Internet users vs. EU-15 29%; Figure 22), but no one is yet aware of the possibility to do so (EU-15 16%). Here, there is no difference between EU and NAS average with respect to interest. It should be stressed, that by the time of the survey (January 2003), there was no 'tax declaration' service on Slovenian governmental sites, but by February 2003 income tax

forms for printing were available on the DURS (Tax Office of Republic of Slovenia) web site. A similar pattern can be found also on other e-government indicators: the Slovenes show one of the highest interests, but the awareness and actual usage are rather low (see Annex 1, Figure 52 to Figure 57).

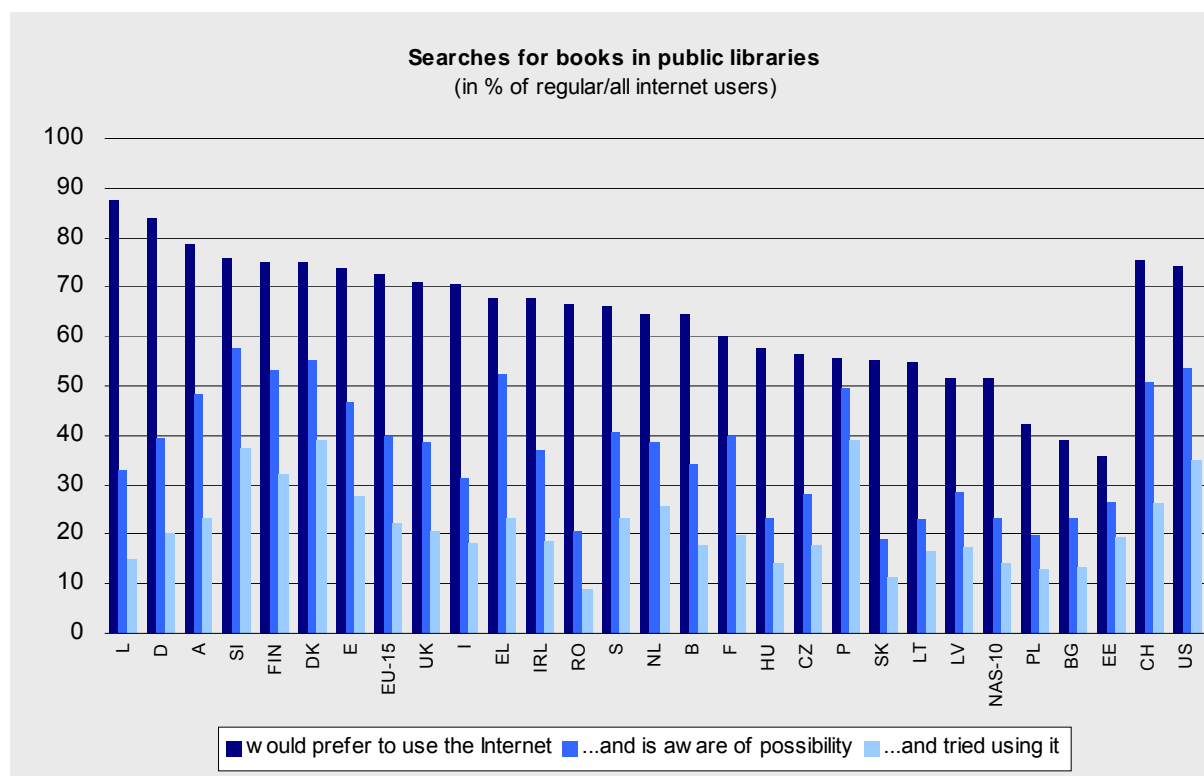


Figure 23 – Searches for books in public libraries

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

Question: K1f

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

The only exception is the book search. Here Slovenian Internet users show a high preference for online use and a considerable number of citizens have actually tried to use it (Figure 23). Slovenia is positioned on the fourth place with regard to the interest (76% vs. EU-15 72%), on the first place in awareness of this service (58% vs. EU-15 40%), and on the third place in actual usage (38% vs. EU-15 22%). This may be well connected to the high interest and awareness (possibility) of the IST services in Slovenia.

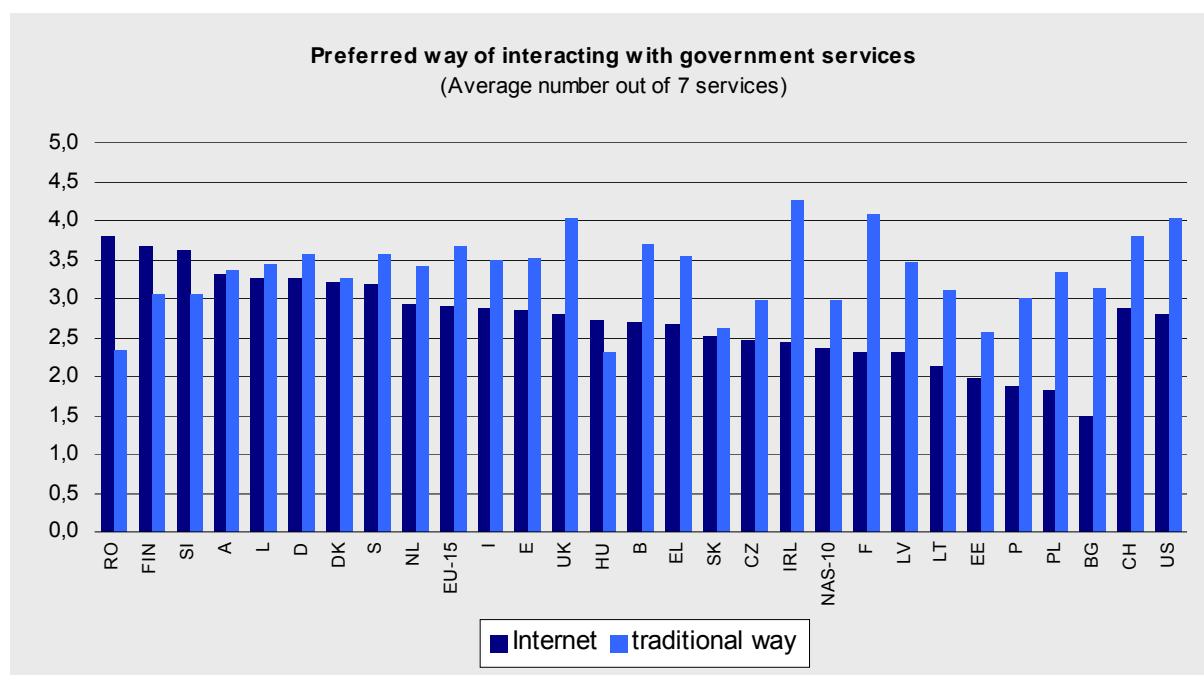


Figure 24 – Preferred way of interacting with government services: average number out of 7 services

Bases: regular Internet users, weighted average numbers of services

Question: K1

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

Together with Finland, Slovenia is the only European country with sizeable Internet penetration where the interest of online communication with the government surpasses the classical options of communication. Generally, respondents from the northern countries of Europe show a greater preference for interacting with government using the Internet than the EU as a whole (Figure 24).

10. Conclusions

10.1 Overview

The SIBIS+ data confirms a very specific pattern of the IST developments in Slovenia. With the rapid developments in the mid 90's, Slovenia was among the most developed countries and above EU average according to all key Internet indicators. However, this slowed down by the end of the 90's, and the presently existing lag of 1-2 years behind EU average appeared. This lag is, in fact, also somehow consistent – but still much smaller – to the general development lag, since Slovenia is reaching only 70% of EU average in GDP perception.

With respect to the general Internet and related IST developments, Slovenia is still relatively advanced as it is ahead of all the NAS 10 countries, with the exception of Estonia. In addition, in the majority of indicators it is also typically ahead of some EU countries (France, Italy, Portugal and Greece).

Another important characteristic is the traditionally high interest for IST services, which is in Slovenia among the highest of all the 25 surveyed European countries. Similarly, the subjective barriers for possible Internet usage are among the lowest. The only exceptions are the costs, which present a slightly higher barrier for Internet usage in Slovenia compared to EU average (but not also to NAS average). In addition, some data indicate, that the gap between the potentials/interests for IST services and the actual supply/usage is the largest in Slovenia among all the 25 included countries. The main obstacles thus seem to be the lack of e-content and e-services, therefore Internet users in Slovenia cannot fulfil their potentials.

The delay that appeared in IST developments, in Slovenia, can be partially contributed to the lack of interest for PC and Internet usage due to low education or ICT skills (older population), and foremost to the costs of PCs, which prevented several population segments to purchase one. Partially, the reason can be also a lack of a more proactive governmental policy. The unique opportunity to keep the country among the top IST adopters was thus perhaps missed, as throughout last years the IST issues were rarely among top governmental priorities. This can be observed through the disintegrated governmental Web presence, limited supply of G2C services, and insufficient support for ICT equipments in schools. The delays in the de-monopolisation and telecommunication regulations may also contribute to this gap. However, some recent actions and the *Strategy of Information Society of Republic of Slovenia* offer the possibilities to transform the Slovenian position once again.

10.2 SIBIS + figures and Slovenian position

Telecommunication & Access

Slovenia is among the best-equipped NAS countries in four basic ICTs: fixed telephone (92% vs. NAS-10 73%, mobile phone (76% vs. NAS-10 43%), PC (48% vs. 29%), and FAX (10% vs. NAS-10 4%). Internet usage in population 15+ is 45% (EU-15 55%), which positions Slovenia in second place among the NAS countries. Slovenia has also the highest Internet penetration in households (34% vs. EU-15 44%) among the NAS countries. The highest percentage of Slovenian Internet users is using Internet only at home (14%). Slovenia lags behind EU average in DSL access to the Internet (2% vs. EU-15 3.4%), but is ahead of EU average in percentage of experienced users (21% vs. EU-15 20%). The percentage of intensive Internet users positions Slovenia in the middle of the surveyed countries. Security concerns are not as obvious as in the majority of NAS and EU countries. In general, with respect to T&A indicators Slovenia is typically positioned behind Estonia in the second place among the NAS countries and is ahead of France, Italy, Portugal and Greece. Also, Slovenia is typically behind EU average, except for the mobile phone usage.

E-Society and Social Inclusion

The largest barriers to Internet usage are, for Slovenian non-Internet users, prejudices that 'Internet requires advanced computer skills' (67% vs. EU-15 58%) and 'Internet is not something for me' (63% vs. EU-15 60%). In Slovenia, there is 1.3% of the population, who stopped using the Internet (so called real dropouts) (EU-15 0.7%, NAS-10 0.53%). Costs of Internet usage and lack of useful information present a reason also for high home dropouts. The NAS countries are on average showing higher percentages (higher barriers), while the EU occasional and non-Internet users display higher percentages in the perception of barriers 'Internet is not easy to access', 'Internet is too time consuming', and 'Internet lacks useful or interesting information'. The Digital Divide Index (DIDIX) is showing on average a 8% gap for Slovenia (45%) compared to the EU (53%), meaning that the risk groups are 45% as likely to use the PC, have access at home and use the Internet. The most dramatic divide is found in education (Slovenia 7.5% vs. EU-15 27%). In general, e-society and social inclusion indicators for Slovenia indicate a specific pattern, where the barriers are differently perceived by different subpopulations (e.g. at home dropouts, real dropouts), and that education, costs and content might be of primary concern when tackling those barriers.

E-Education and Life-long-learning

The SIBIS data show the correlation between Internet usage and participation in lifelong learning: countries with higher Internet usage tend to have higher participation rates. Slovenia, with 17% of her labour force participating in lifelong learning is, again, positioned in the middle of all countries. However, only 7% of the Slovene labour force is using e-learning (EU-15 14%), which presents a somewhat lower position for Slovenia. Slovenes are not far behind Europeans in the majority of ICT skills: 41% of the population is confident in using search engines to find information (EU-15 45%), 39% in identifying the source of the information (EU-15 40%), 37% regard themselves confident in communicating with others by using e-mail (EU-15 46%). Slovenia is ahead of EU average by understanding the content of websites (36% vs. EU-15 29%), but a 10% gap exists in downloading and installing software onto a computer (Slovenia 23% vs. EU-15 33%). With more advanced applications (using Internet chat rooms, creating personal web page, and using Internet to make telephone calls) the percentage of population confident in using them rapidly decreases. Here, Slovenia is lagging behind EU average for up to 6%. In general, at this topic Slovenia is typically positioned ahead of the NAS countries and Italy, France, Greece, and Portugal, and slightly below the EU average. The exception is e-learning, where the position of Slovenia is somehow lower.

E-Economy and e-Commerce

In Slovenia, the use of e-commerce and e-banking is rather limited. Only 12% of interactive buyers position Slovenia between EU average (25%) and NAS average (6%). There are 7% of users who conducted e-banking or bought financial services (EU-15 14%), and 8% of those who ordered a product or a service. The correlation between Internet usage and e-commerce/e-banking is found, since the countries with higher Internet penetration display higher e-economy usage. In general, in Slovenia, e-commerce/e-banking is increasing, but the lag behind EU average is considerable. Again, Slovenia is typically positioned in the middle of the 25 surveyed countries, behind Estonia, and ahead of Spain, Portugal, Greece and other NAS countries.

E-Work

In Slovenia, there is 4.6% of home-based teleworkers among the employed population (EU-15 7.3%): 1.6% regular (EU-15 2%) and 2.7% supplementary (EU-15 5.3%). There is also

3% of mobile teleworkers (EU-15 4%), and 2.3% are teleworking in SOHO (EU-15 3.4%). Again, there is a clear connection between Internet usage and the use of home-based telework. Three quarters of the employed population in Slovenia expressed an interest in at least one type of telework, the percentage being ahead of almost all countries (EU-15 67%). However, one fifth is feasible of teleworking (EU-15 32%), All, these indicators also highly correlate with the Internet/PC usage. Slovenia is positioned close to Germany and Austria in percentage of home-based teleworkers, and is typically behind EU average and Estonia. At the same time, Slovenia is ahead of Portugal, Spain and NAS average, with one of the highest percentages interested in telework.

E-government

Internet users in Slovenia expressed a particularly high interest in Internet communication with the government. Two fifths (40%) of Internet users were interested in on-line tax declaration (EU-15 29%); 45 % for on-line document request service (EU-15 35%); 42% for on-line car registration (EU-15 38%); almost 50% for on-line announcement of the change of address. Despite the high interest in the above-mentioned e-services, no one was aware of them at the time of the survey. High interests, compared with other countries, were also found for the job search services (55% vs. EU-15 58%), declaration to the police (27% vs. EU-15 18%), and particularly for the search for books in public libraries (76% vs. EU-15 72%). Here, as the only exception, the awareness and actual usage was also high. Together with Finland, Slovenia was also the only European country with a sizeable Internet penetration where the interest for on-line communication with the government surpassed interest for classical communication. Overall, among the Slovene Internet users the interest for e-government services was one of the highest (in most cases above EU average), accompanied also with a high usage if services were available. On the other side, the gap was noticed in cases where the service was non-existent or the users were not aware of it.

Strengths: Slovenia is the leading NAS country in IST developments also surpassing many EU members. In particular, Slovenia is the leading European country with respect to the mobile phone penetration. Its major strength lies also in a relatively high interest for ITS services and low barriers including the security concerns. These all present an excellent position for the proliferation of all aspects of information society.

Weaknesses: The weaknesses can be found in significant gaps in the usage of e-services. This is especially true for e-commerce/e-banking, home-base teleworking, educational/age divides, e-learning and in the slow development of e-government services.

Opportunities: The SIBIS+ data confirm extremely high interests for IST usage in Slovenia. Here, Slovenia stands among the most exposed countries of the 25 EU countries, which is particularly true for interest in governmental on-line services, and interests in telework.

Threats: The lack of barriers confirms that the major problem is the absence of the content/services and also high access/usage costs. Accompanied with high potentials/interests, this also manifests with high Internet dropouts.

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12. Abbreviations

A – Austria	L – Luxemburg
ADSL – Asymmetric Digital Subscriber Line	LT – Lithuania
ARNES - Academic and Research Network of Slovenia	LV – Latvia
B – Belgium	NAS – Newly Associated States
BG – Bulgaria	NAS countries - Estonia, Lithuania, Latvia, Bulgaria, Check Republic, Poland, Romania, Hungary, Slovakia and Slovenia
CMI – Centre for Methodology and Statistics	NAS-10 - average of all 10 NAS countries
CZ – Czech Republic	NL – Nederland
D – Germany	NSI – National Statistical Institute
DG INFSO – Information Society Directorate-General	OECD – Organisation for Economic Co-Operation and Development
DIDIX – Digital Divide Index	P – Portugal
DK – Denmark	PC – personal computer
DMS – Decision Maker Survey	PL – Poland
DURS – Tax Office of Republic of Slovenia	R&D – research and development
E – Spain	RIS – Research on Internet in Slovenia
EE – Estonia	RO - Romania
EL - Greece	S – Sweden
EU – European Union	SI – Slovenia
EU-15 – average of all 15 European countries	SIBIS – Statistical Indicators Benchmarking the Information Society
Eurostat – European Statistical Office	SIBIS+ - geographically expansion of the SIBIS activities from the EU Member States to the Newly Associated States
F – France	SK – Slovakia
FIN – Finland	SOHO – small office, home office
FSS-UL – Faculty of Social Sciences at University of Ljubljana	SORS - Statistical Office of Republic of Slovenia
G2C – government to citizen	T&A – telecommunication and access
GDP – Gross Domestic Product	UK – United Kingdom
GPS – General Population Survey	WP – work package; relates to the work package of the SIBIS project
HU – Hungary	xDSL – any Digital Subscriber Line
I - Italy	SMS – short message service
ICT – Information and Communication Technology	UNDP – United Nations Development Programme
IPMIT - The Institute for Project Management and Information Technologies	
IRL – Ireland	
IS – Information Society	
ISDN – Integrated Services Digital Network	
ISP – Internet Service Provider	
IST – Information Society Technologies	

Annex 1 Additional tables/graphs with data

Telecommunication and Access

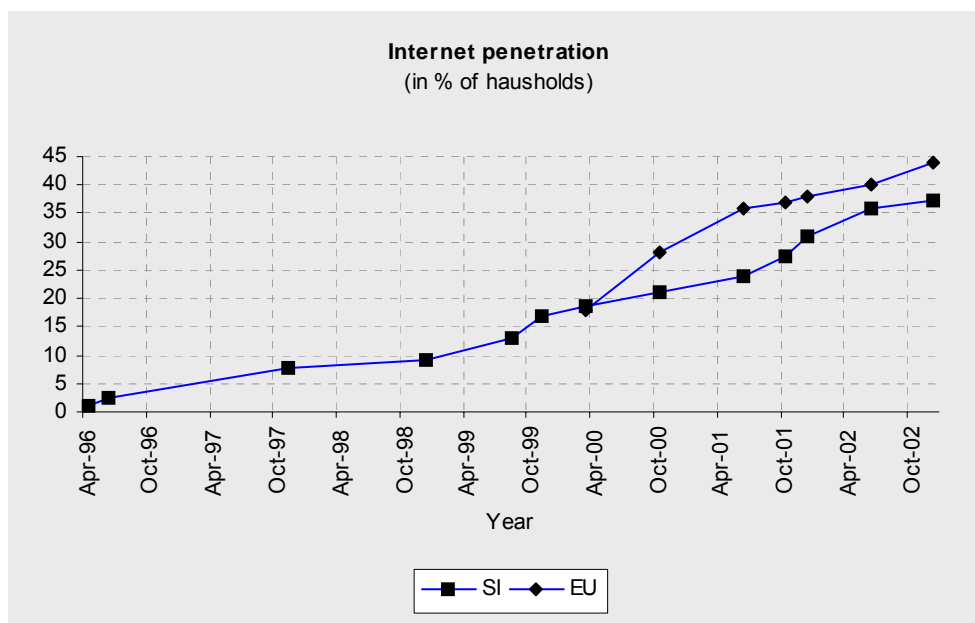


Figure 25 – Time series of Internet access at home: Slovenia and EU from 1996 to 2002

Bases: Population: all respondents (n= 1000), weighted; SI weighted by SI; EU weighted by EU

Questions: SI, EU: Does your household have access to Internet?

Source: RIS GPS 1996 - 2002, EUROBAROMETER GPS 2000-2002

Time series data (RIS 1996-2002; Figure 25) display even higher Internet penetration in households, with a minor lag compared to the EU. The difference from SIBIS (34% January 2003 vs. RIS 38% December 2002) may be contributed to face-to-face mode in SIBIS compared to telephone questionnaire in RIS surveys and also to slight different wording.

From 1996-1998, Slovenia was one of the most advanced adopters of the Internet, in particular with Internet penetration. The major explanation factors for this rapid development were as follows:

- Traditionally high interest for using and applying the information society technologies.
- Relatively high (above EU average) PC penetration in households and in companies from the early 90's.
- The main impetus for Internet development itself came from the public Internet access provider ARNES, which propagated massive access in the mid 90's.

The gap appeared in the year 2000 and widened in the following year. After that it decreased, and from mid 2002 stayed stable at 4% gap.

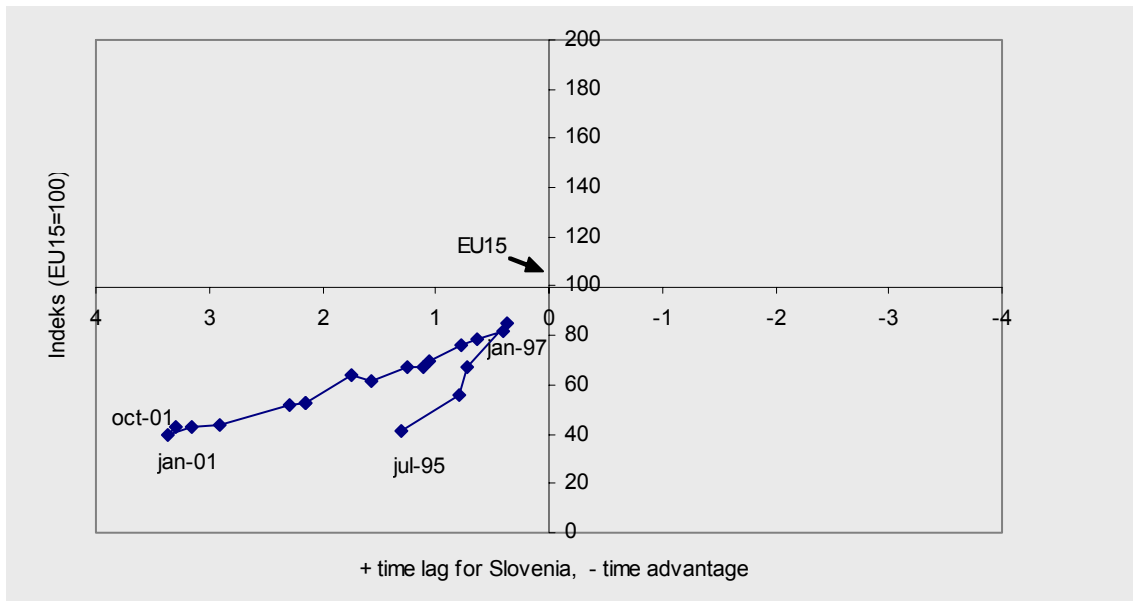


Figure 26 - Hosts density in Slovenia and EU (1995-2002)
 Source: Sicherl (2001)

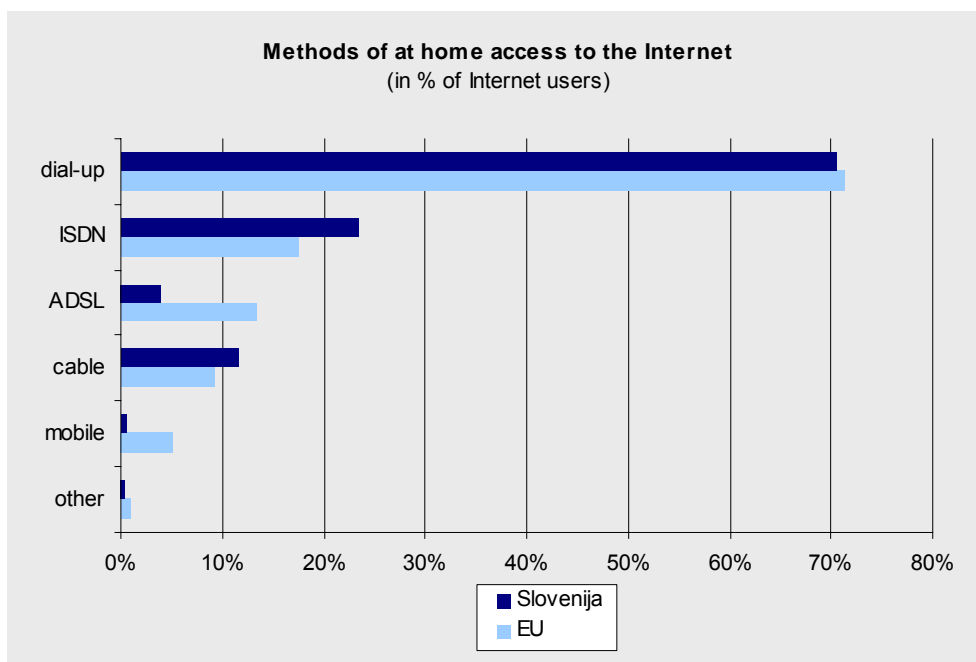


Figure 27 – Method of at home access to the Internet (main method)
 Bases: SI 'Internet users' (N=360), weighted: SI weighted by SI
 EU 'Internet users' (N=12,891), weighted: EU weighted by EU
 Questions: Which is the main method of Internet access used in your household?
 Source: RIS GPS, 2002, FLASH EUROBAROMETER 135, 2002

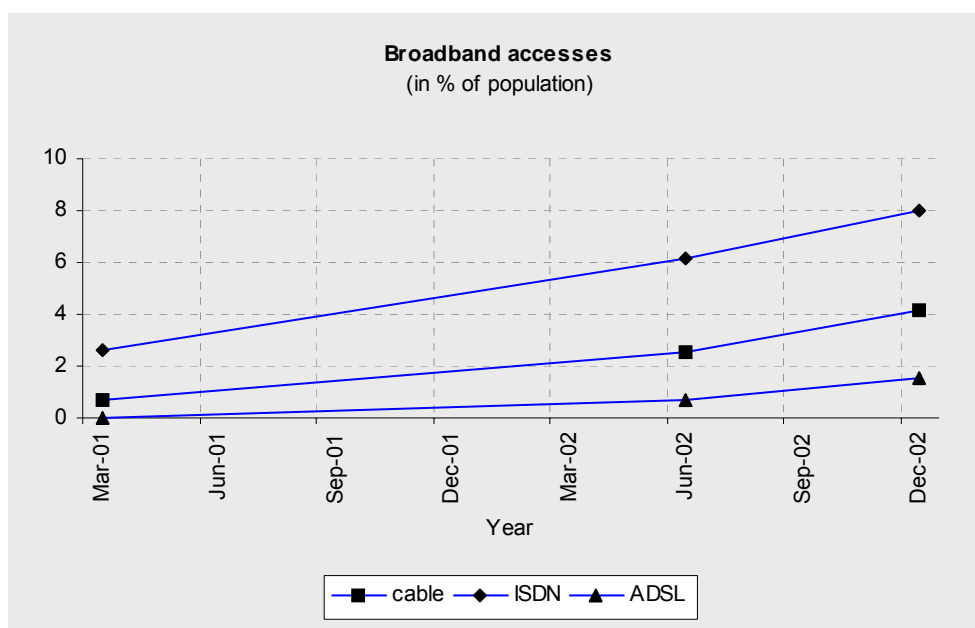


Figure 28 – Time series of broadband access in Slovenia: cable, ISDN, and ADSL from 2001 to 2002

Bases: Population: all respondents (n= 500), weighted: SI weighted by SI

Questions: Which is the main method of Internet access used in your household?

Source: RIS GPS 2000 - 2002

The most common broadband access at home is cable access (Figure 28) – in December 2002, 4% of the population (Slovenian households) accessed the Internet by the cable modem (EU-15 3%). SIBIS+ data confirms only the percentage of ADSL (xDSL) users (RIS 1.8% vs. SIBIS+ 2%). We should stress, that one household (user) can access the Internet with several methods (RIS), while in SIBIS+ the main (exclusive) method is displayed – this is probably the reason why the ISDN access is higher in RIS (8% vs. 4.6% SIBIS+). We can summarize that Slovenia has a relatively high percentage of ISDN and cable access but lags in xDLS.

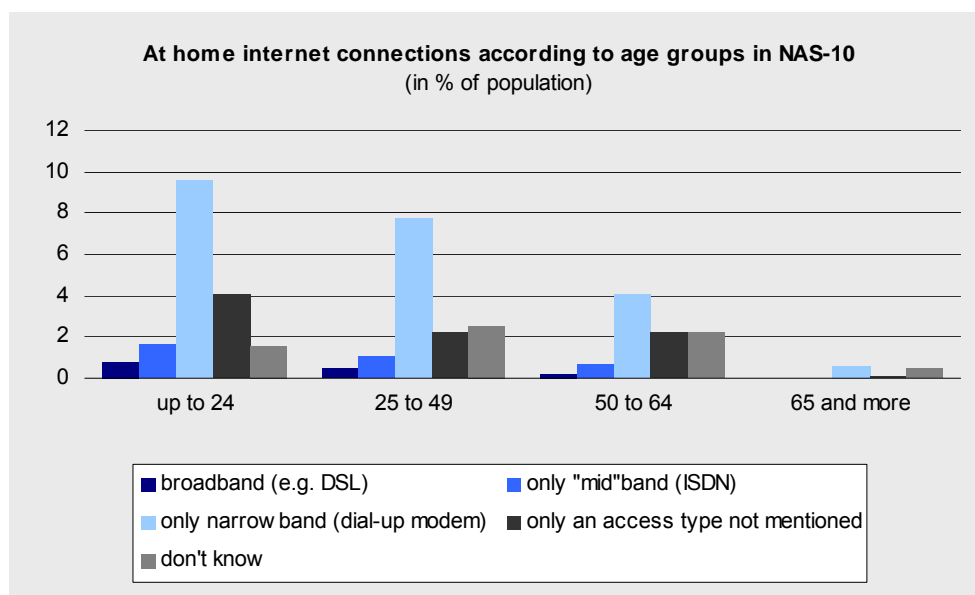


Figure 29 – At home Internet connections according to age groups in NAS-10

Base: all respondents, weighted column percentages

Question: A11b,

Source: SIBIS 2003, GPS-NAS

E-Society and Social Inclusion

Additional insight into the perceptions of the Internet usage barriers might be shown when comparing different usage intensities. By the prejudice 'Internet is too expensive to use' it can be observed that the highest percentage of those, who at least somewhat agree with the statement, display regular users (65% in Slovenia; Figure 30). The pattern is similar to that of the EU-15; with the decrease of intensity the percentage also decreases. But looking only at the percentage of those who completely agree, then the picture is opposite; with the decrease of usage intensity, complete agreement increases.

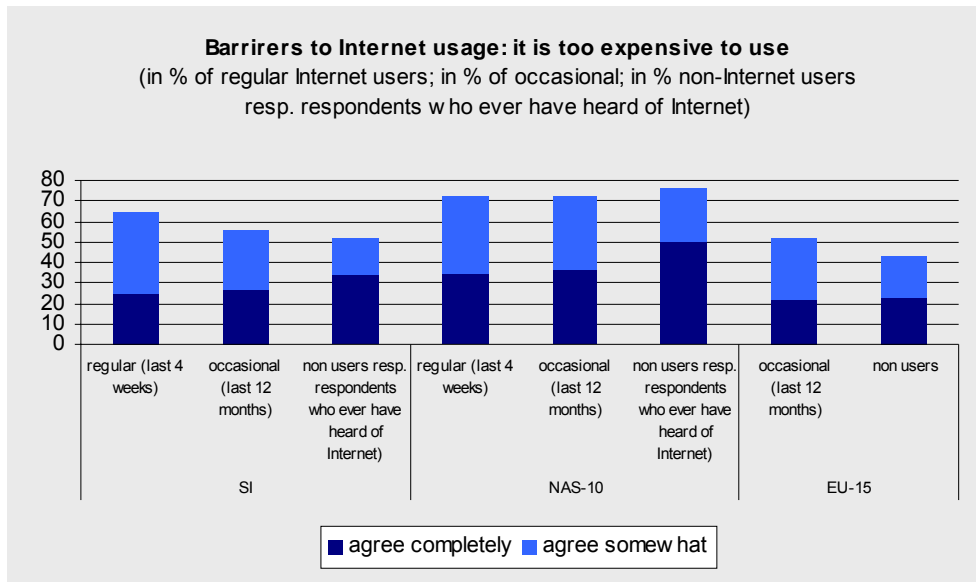


Figure 30 - Barriers to Internet usage: 'Internet is too expensive to use'
 Bases: regular Internet users, weighted column percentages
 occasional Internet users, weighted column percentages
 non Internet users resp. respondents who ever have heard of the Internet, weighted column percentages
 Questions: A5a, A7, A8, A18d
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

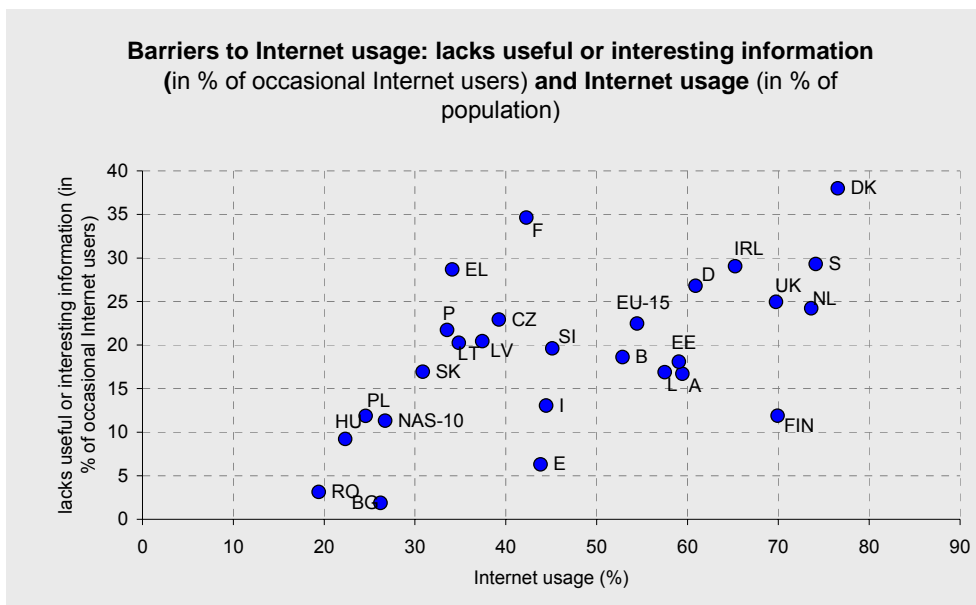


Figure 31 - Barriers to Internet usage: 'Internet lacks useful or interesting information', and Internet usage
 Bases: non Internet users and respondents who ever have heard of the Internet resp. all respondents, weighted column percentages
 Questions: A5a, A8, A18e

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

The percentage of occasional Internet users who agree with the statement ‘Internet lacks useful or interesting information’ is higher in countries with higher Internet usage (Figure 31). In the NAS countries, this is therefore a smaller barrier compared to the EU-15 with higher Internet penetration. Again, Slovenia is in the middle with 19% of occasional users at least somewhat agreeing with the statement. The increase follows the logarithmic curve, with steeper increase in countries with up to 40% Internet usage (NAS countries), and slower increase afterwards (EU countries, Slovenia and Estonia).

When looking at non-users, Slovenia displays the lowest percentage of those that agree with the statement (8%) (Figure 32). This somehow contradicts the interpretation that the lack of content is an important barrier in Slovenia. We can explain this with the fact that the question refers only to information and not to the services. Also, the interest may be high with no specific barrier. However, this result also suggests that there exists a specific low educated and, in particular, older (where the digital divide is larger in Slovenia than in the EU and also than NAS average) segment in Slovenia, with very particular barriers to the Internet usage.

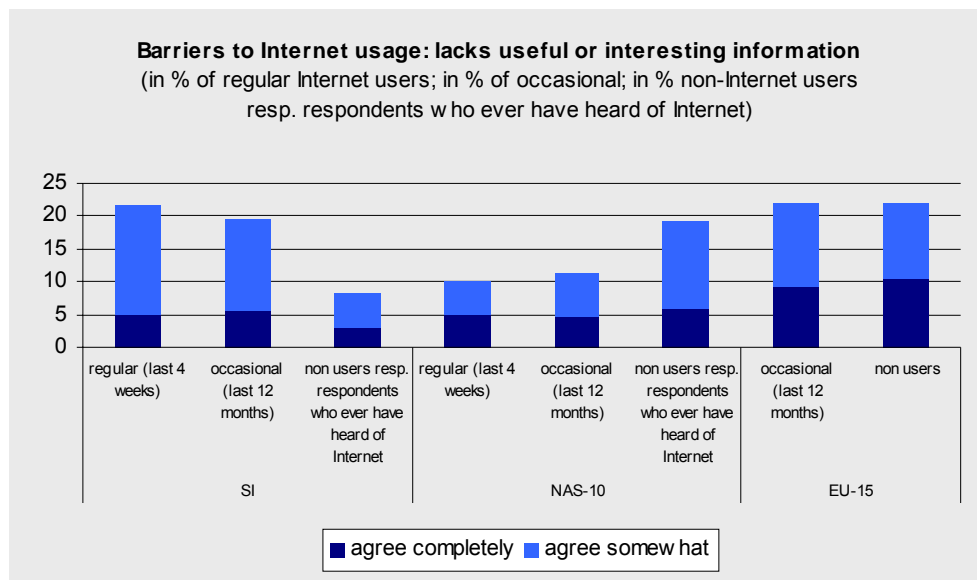


Figure 32 - Barriers to Internet usage: ‘Internet lacks useful or interesting information’

Bases: regular Internet users, weighted column percentages

occasional Internet users, weighted column percentages

non Internet users resp. respondents who ever have heard of the Internet, weighted column percentages

Questions: A5a, A7, A8, A18e

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

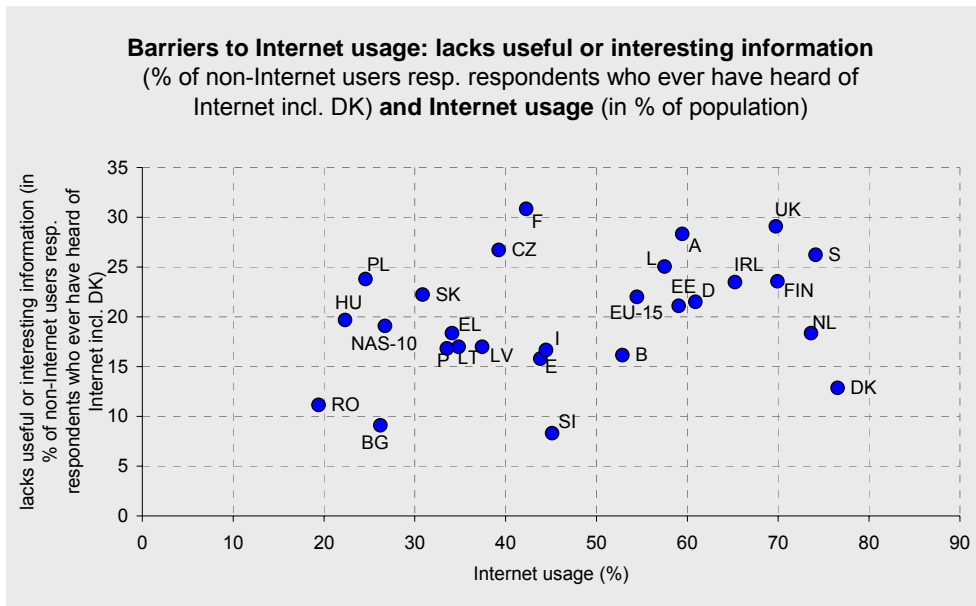


Figure 33 – Barriers to Internet usage: 'Internet lacks useful or interesting information'; and Internet usage
 Bases: non Internet users and respondents who ever have heard of the Internet resp. all respondents, weighted column percentages
 Questions: A5a, A8, A18e
 Source: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

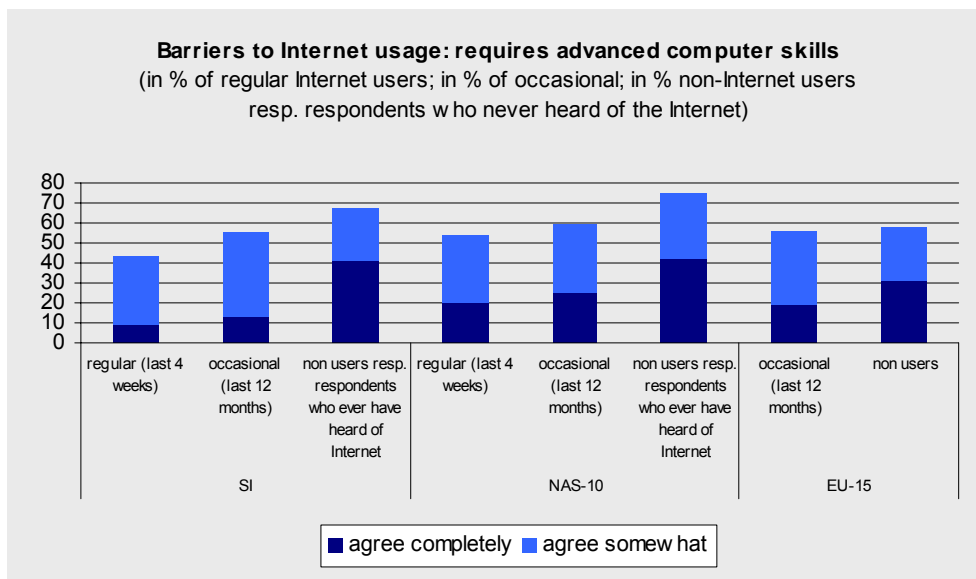


Figure 34 – Barriers to Internet usage: 'Internet requires advanced computer skills'
 Bases: regular Internet users, weighted column percentages
 occasional Internet users, weighted column percentages
 non Internet users resp. respondents who ever have heard of the Internet, weighted column percentages
 Questions: A18a
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

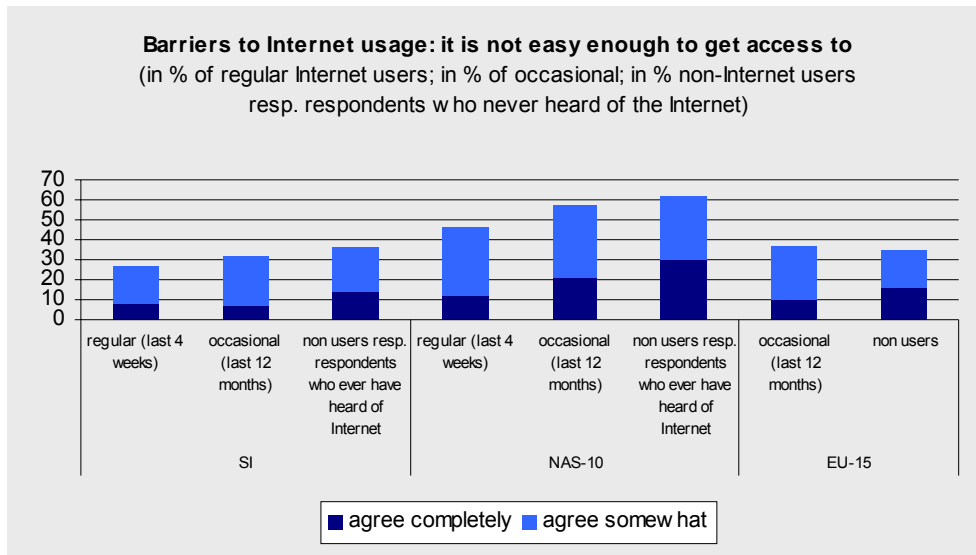


Figure 35 - Barriers to Internet usage: 'Internet is not easy enough to get access to'
 Bases: regular Internet users, weighted column percentages
 occasional Internet users, weighted column percentages
 non Internet users resp. respondents who ever have heard of the Internet, weighted column percentages
 Questions: A18b
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

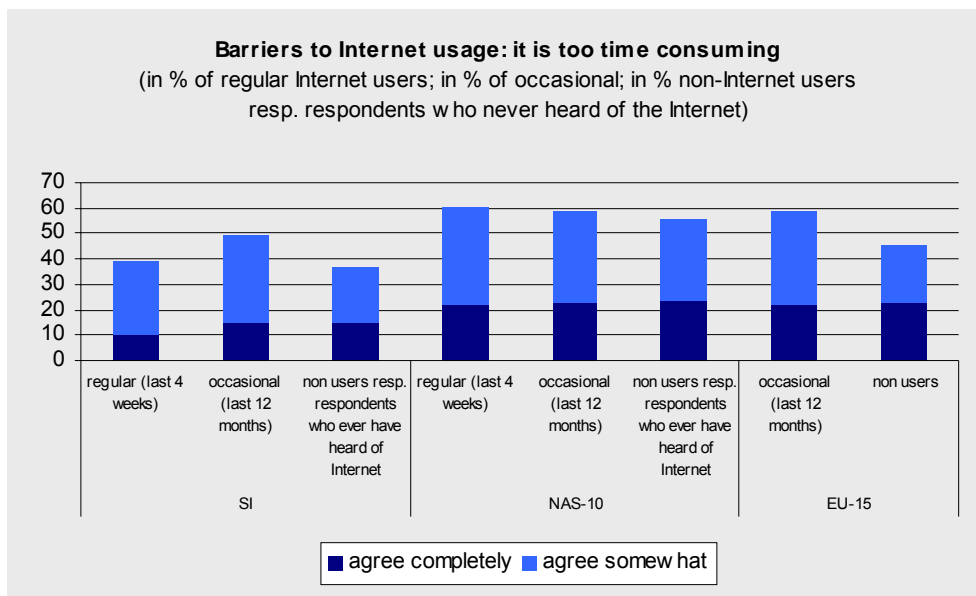


Figure 36 - Barriers to Internet usage: 'Internet is too time consuming'
 Bases: regular Internet users, weighted column percentages
 occasional Internet users, weighted column percentages
 non Internet users resp. respondents who ever have heard of the Internet, weighted column percentages
 Questions: A18c
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

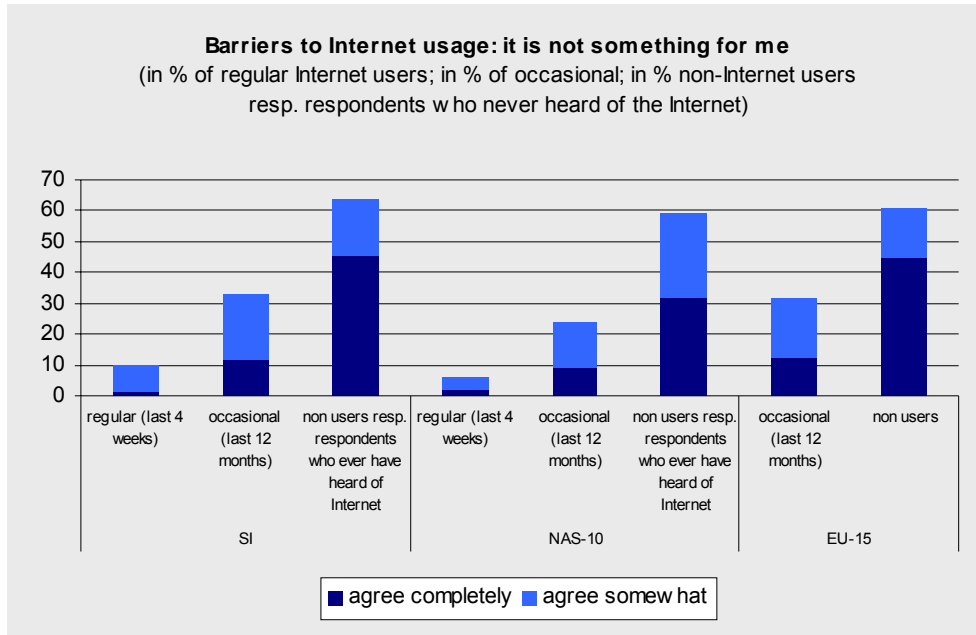


Figure 37 - Barriers to Internet usage: 'Internet is not something for me'
 Bases: regular Internet users, weighted column percentages
 occasional Internet users, weighted column percentages
 non Internet users resp. respondents who ever have heard of the Internet, weighted column percentages
 Question: A18f
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

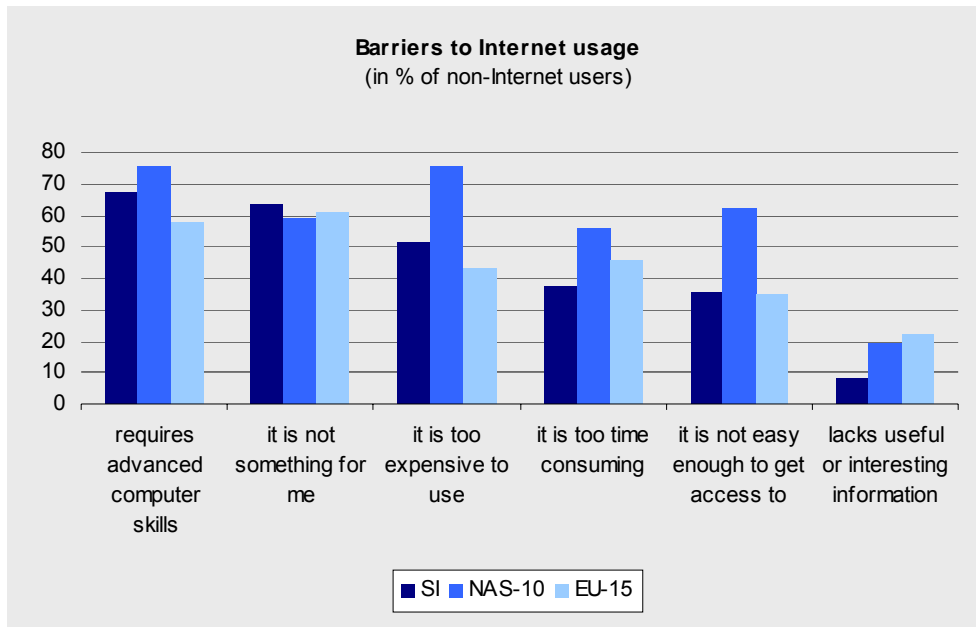


Figure 38 - Barriers to Internet usage
 Bases: non-Internet users resp. respondents who ever have heard of Internet, weighted column percentages
 Question: A18
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

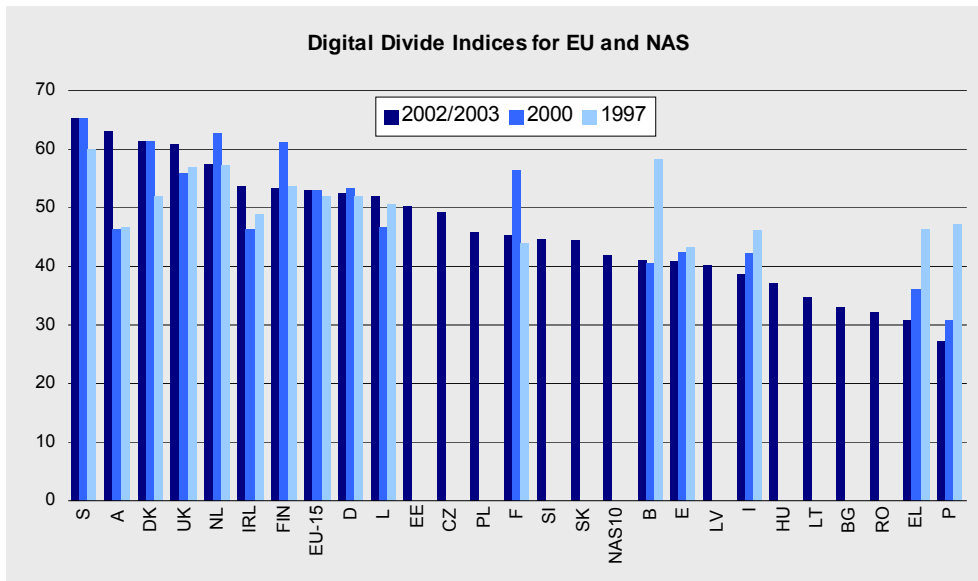


Figure 39 – DIDIX for EU and NAS
 Base: 1997, 2000: N=15,900, weighted by standard Eurobarometer country and EU-15 weights; 2002, 2003: all respondents, weighted percentages
 Questions: 2002, 2003: IN1, IN3, Z19, Z21
 Sources: 1997: Eurobarometer 47.0, Jan-Feb 1997; 2000: Eurobarometer 54, Oct-Nov 2000; 2002: SIBIS 2002, GPS; 2003: SIBIS 2003, GPS – NAS

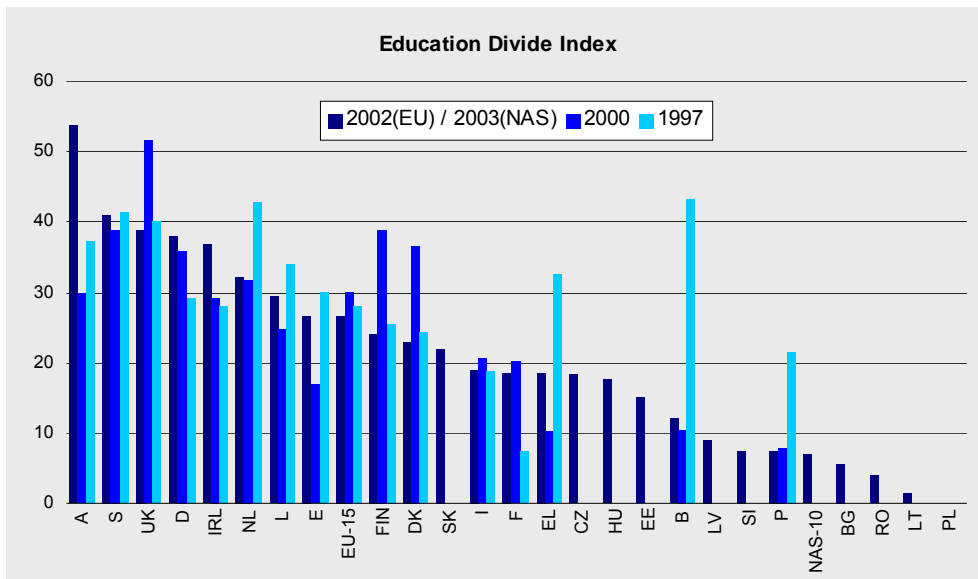


Figure 40 – Education Divide Index
 Base: 1997, 2000: N=15,900, weighted by standard Eurobarometer country and EU-15 weights; 2002, 2003: all respondents, weighted percentages
 Questions: 2002, 2003: IN1, IN3, Z19, Z21
 Sources: 1997: Eurobarometer 47.0, Jan-Feb 1997; 2000: Eurobarometer 54, Oct-Nov 2000; 2002: SIBIS 2002, GPS; 2003: SIBIS 2003, GPS – NAS

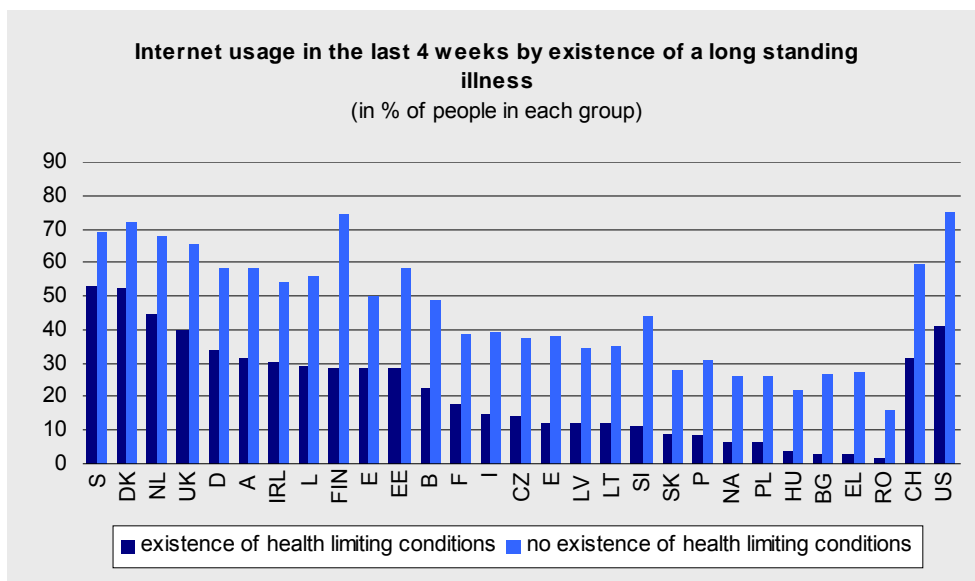


Figure 41 - Internet usage in the last 4 weeks by existence of a long standing illness
 Bases: respondents with health-limiting conditions and without health-limiting conditions, weighted column percentages
 Questions: A7, Z14
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

E-Education and Life-long learning

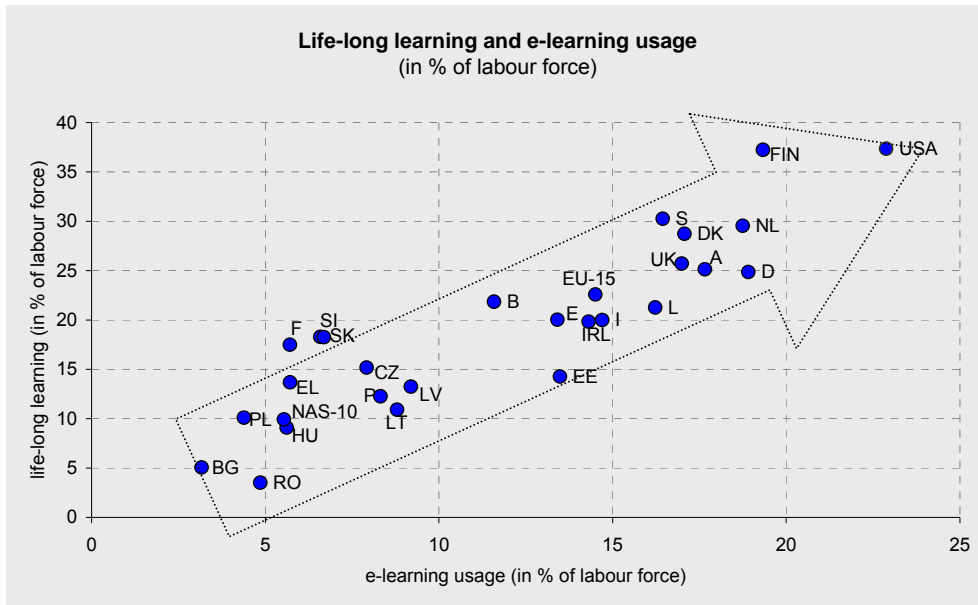


Figure 42 – Life-long learning and e-learning usage

Base: labour force, weighted column percentages
 Questions: A18e, C19a
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

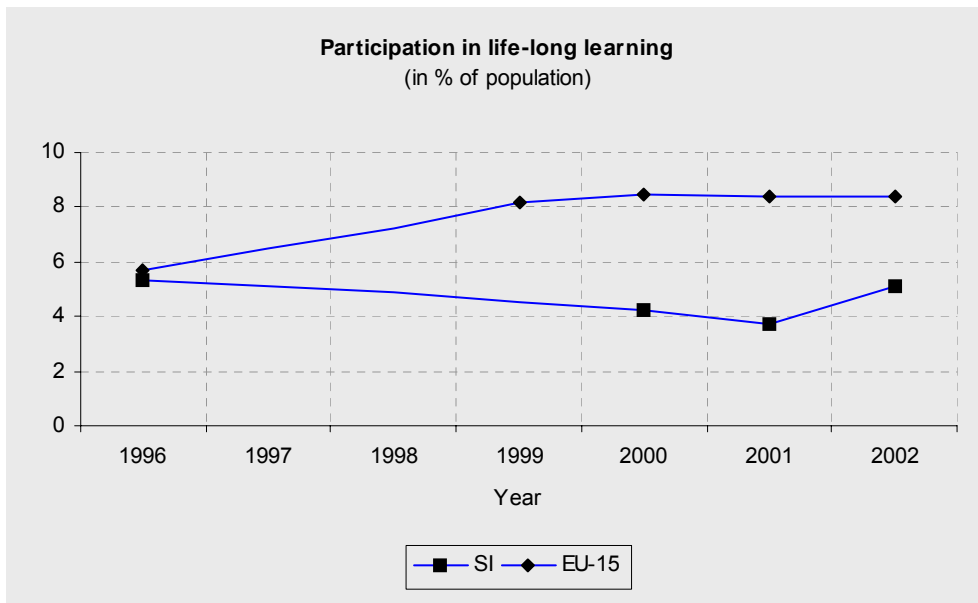


Figure 43 – Time series for participation lifelong learning for SI and EU-15 from 1996 to 2002

Bases: Population: population aged 25-64
 Questions: 1.5.1: 'participation in education and training over the four weeks prior to the survey'
 Source: SORS 2003

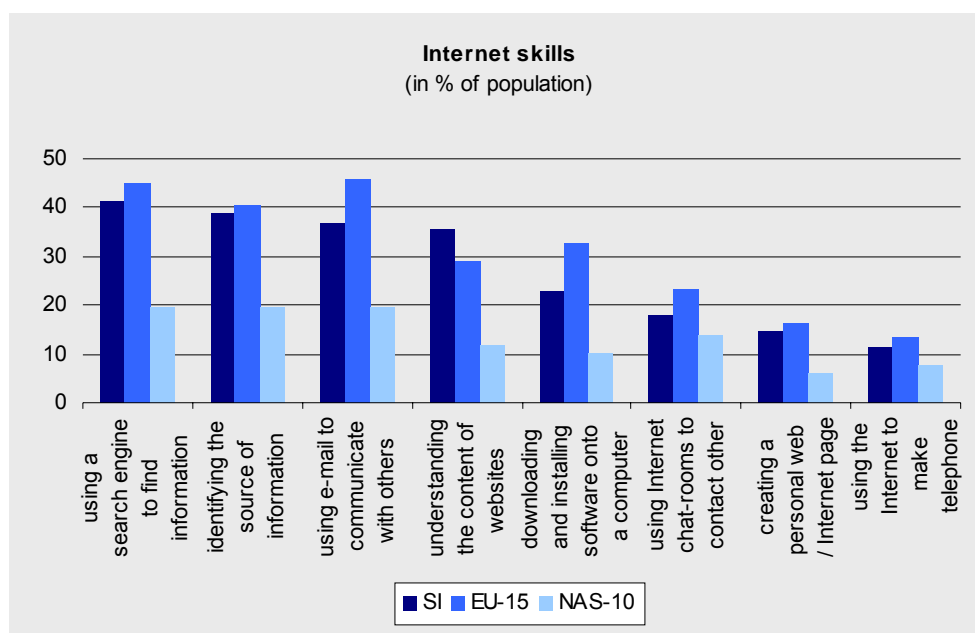


Figure 44 – Internet skills: all measured indicators for SI, EU-15, and NAS-10

Base: all respondents, weighted column percentages

Questions: D1a, D1b, D1c, D1d, D1e, D1f, D1g, D1h

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

In the EU, 40% of the population regard themselves as very or fairly confident in identifying the source of information on the Internet (Denmark 62% and France 24 %) (Figure 44).

With this indicator, Slovenia is right below the EU average, with 39% of the population very or fairly confident. Similar percentage (and difference) is obtained by confidence in using a search engine to find information (Slovenia 41% vs. EU-15 45%). 46 % of the EU population regard themselves confident in communicating with others by using e-mail (Slovenia 37%). Slovenia is ahead of EU average by understanding the content of websites, with 36% of the population confident (EU-15 29%).

A similar 10% gap exists with downloading and installing software onto a computer (Slovenia 23% vs. EU-15 33%). With more advanced applications (using Internet chat rooms, creating personal web page, and using Internet to make telephone calls) the percentage of the population confident in using them decreases. Here, Slovenia is lagging behind EU average up to 6%.

We can conclude that with respect to the skills and life-long education Slovenia takes its typical position slightly below the EU average.

E-Economy and e-commerce

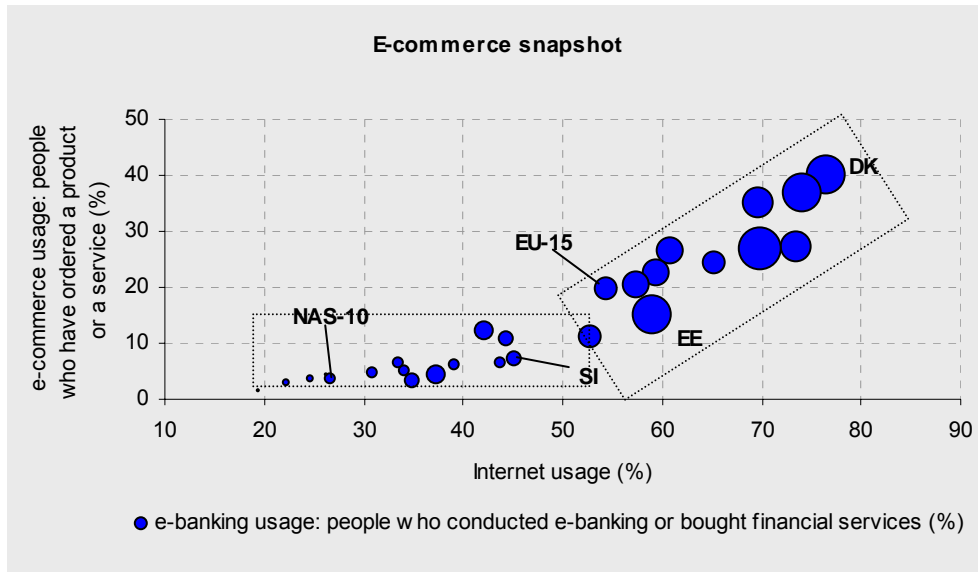


Figure 45 – Mobile snapshot: Internet usage (axis x); e-commerce usage: people who ordered a product or a service (axis y); e-banking usage: people who conducted e-banking or bought financial services (bubble size)
 Bases: all respondents, weighted column percentages
 Questions: A7, A8, B1b, B1c
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

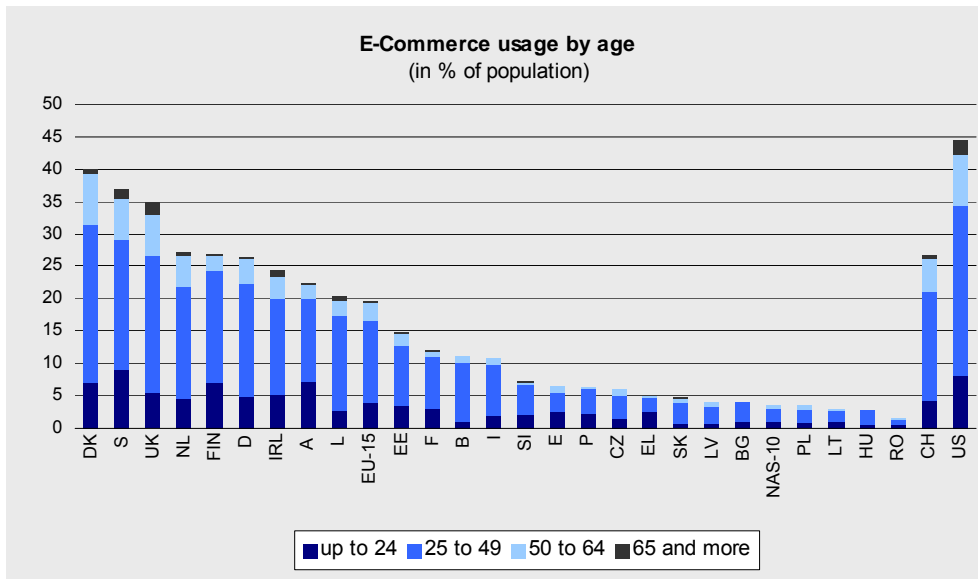


Figure 46 – E-commerce usage by age
 Base: all respondents, weighted column percentages
 Questions: B1, IN1
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

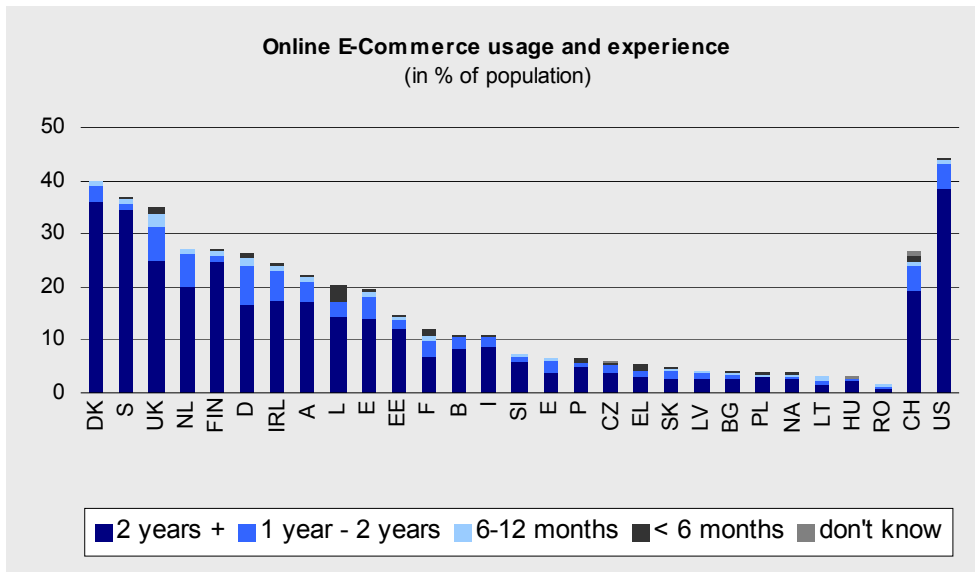


Figure 47 – Online e-commerce usage and experience
 Base: all respondents, weighted column percentages
 Questions: B1, A10
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

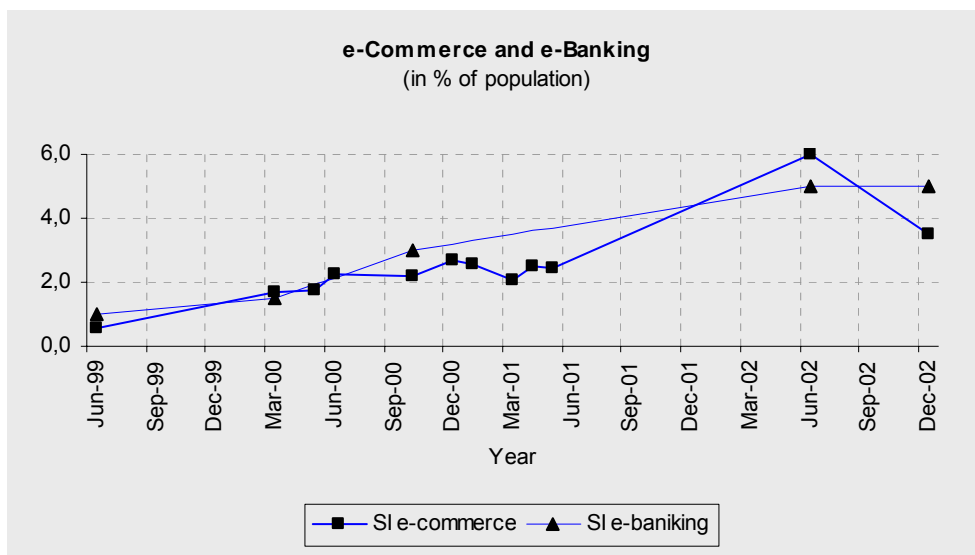


Figure 48 – Time series for e-commerce and e-banking in Slovenia from 1999 to 2002
 Bases: Population: SI 1999 all respondents; weighted; SI weighted by SI population
 Population: SI 2000 all respondents (N=216, 315, 410, 494); weighted, SI weighted by SI population
 Population: SI 2001 all respondents (N=338, 341, 564, 453, 235, 87)
 Questions: 'Have you bought something via the Internet, in the last 12 months?'; 'Do you use e-banking for your personal purposes?'
 Source: RIS 1999-2002, GPS

The rise of e-banking in Slovenia from 1999, based on RIS data, is similar to that of e-commerce: in 1999. There was approximately 1% of the population conducting e-banking for their personal use or e-shopping, and the percentage increased to 5% and 4% respectively. In the last half year there is almost no increase in e-banking, while the slight decrease in e-commerce usage is observed. The percentages differ from SIBIS+ data (8% vs. 5% e-banking; 4% vs. 7% e-commerce) due to the methodological differences.

E-Work

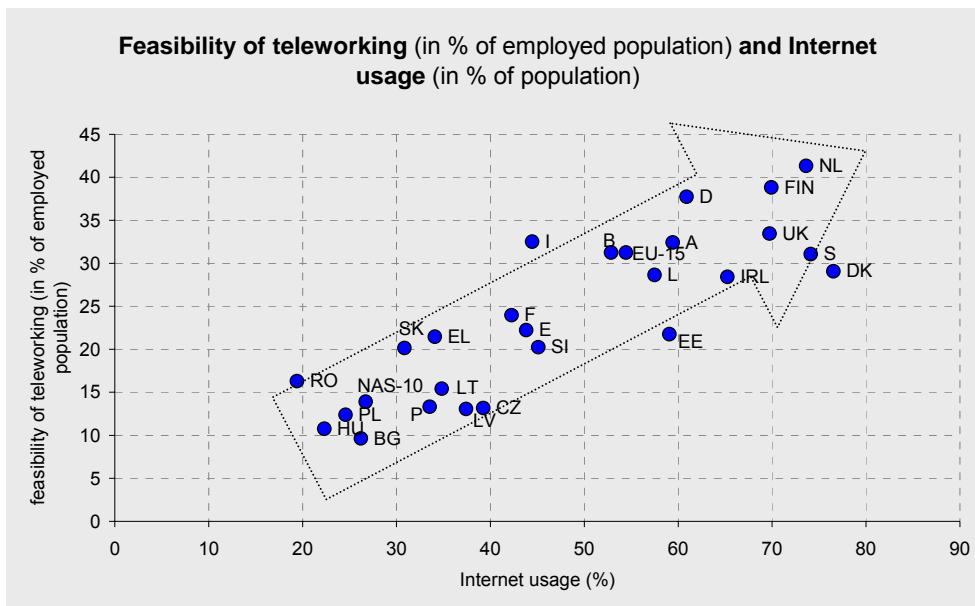


Figure 49 – Feasibility of teleworking and Internet penetration
 Bases: all persons employed resp. all respondents, weighted column percentages
 Questions: A7, A8, E9a
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

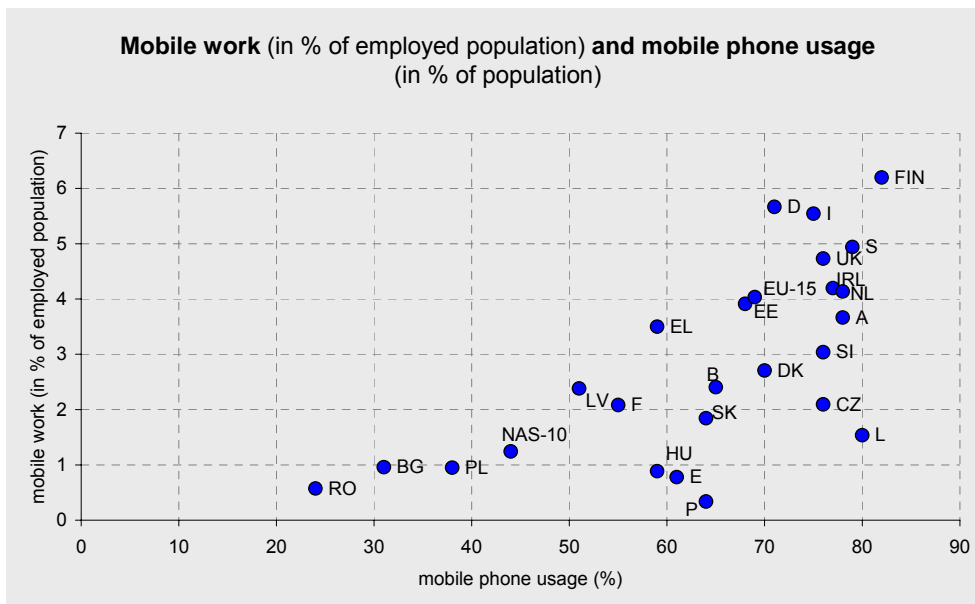


Figure 50 – Mobile teleworking and mobile phone usage
 Bases: all persons employed resp. all respondents, weighted column percentages
 Questions: A19c, F1
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

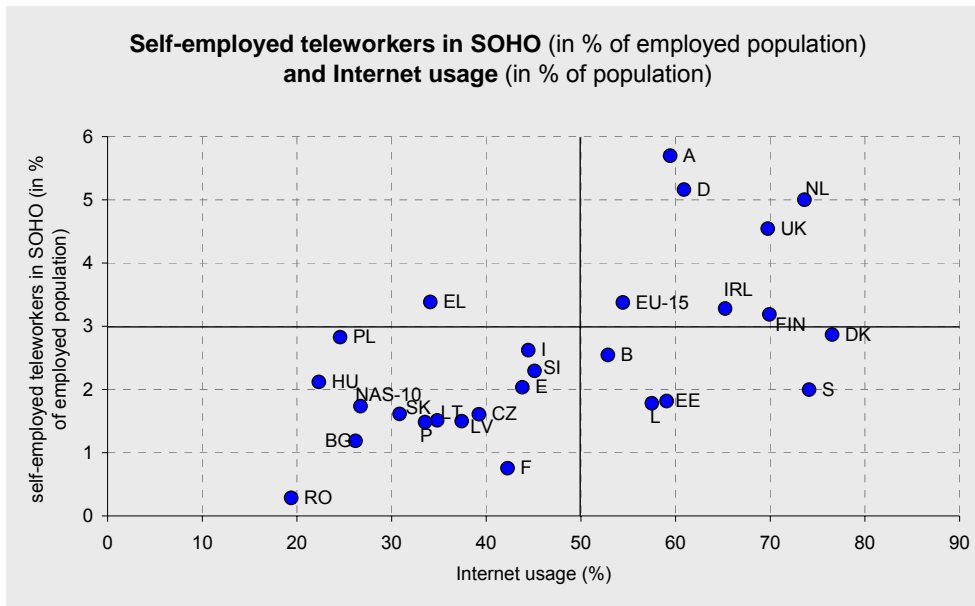


Figure 51 – Self-employed teleworkers in SOHO and Internet usage
 Bases: all persons employed resp. all respondents, weighted column percentages
 Questions: A7, A8, IN6, E1
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

E-government

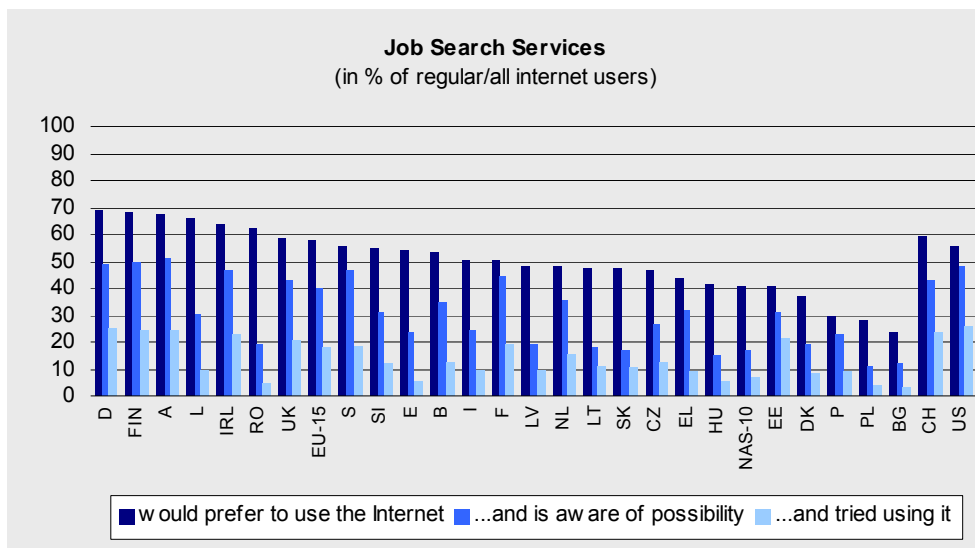


Figure 52 – Job search services
 Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages
 Question: K1b
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Job search service is rather popular for online usage (Figure 52). Slovenia is high in interest for the service (55% vs. EU-15 58%), and somewhat lower in awareness (31% vs. EU-15 40%) and actual usage (12% vs. EU-15 18%).

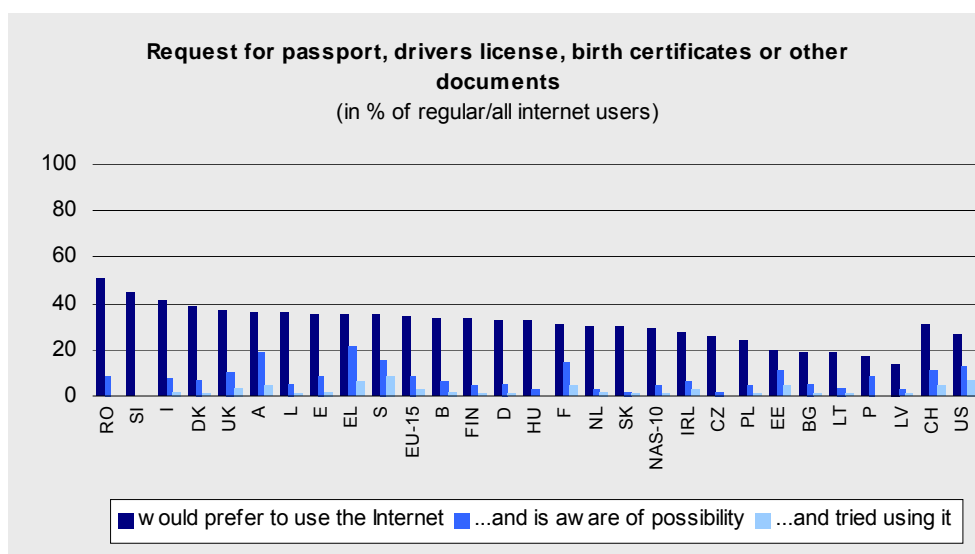


Figure 53 – Request for passport, drivers license, birth certificates or other documents

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

Question: K1c

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

Citizens do not show a high preference for on-line document request service, and (awareness of) availability and usage are low (Figure 53). But in contrast to other countries, Slovenian Internet users have the second highest interest (45% vs. EU-15 35%). Again, among them no one is aware of the possibility of such service.

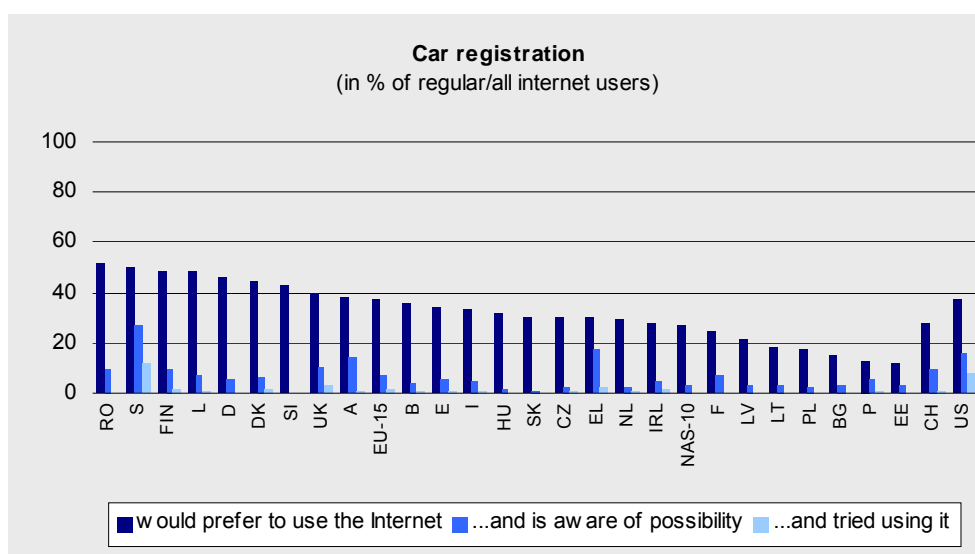


Figure 54 – Car registration

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

Question: K1d

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

For the car registration service (Figure 54) Slovenian Internet users display high interest (compared to other countries), with 42% preferring the use of the Internet (EU-15 38%). In general, awareness of the possibility to use this online service is rather low, and very few citizens tried to use this online service.

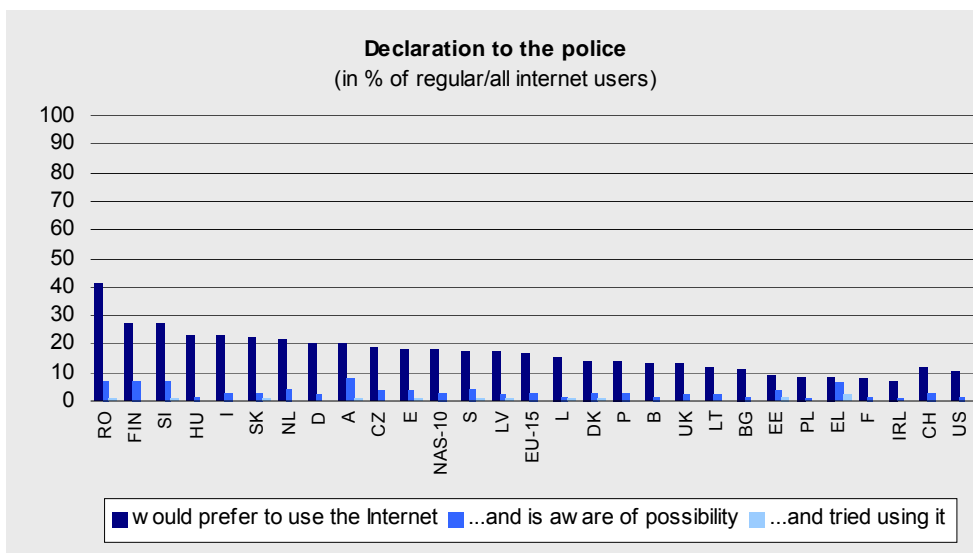


Figure 55 – Declaration to the police
 Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages
 Question: K1e
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Declaration to the police (Figure 55) is the next service that Slovenes are interested in more than other countries (27% vs. EU-15 18%). Also, they are aware to a greater extent of its possibilities (7% vs. EU-15 3%), and tried to use it (0.81% vs. EU-15 0.17%) than the majority of surveyed countries. Overall, it seems that citizens in other countries are rather unwilling to use this online service, and those who prefer to use the Internet are rather aware of the availability of this online service in their region.

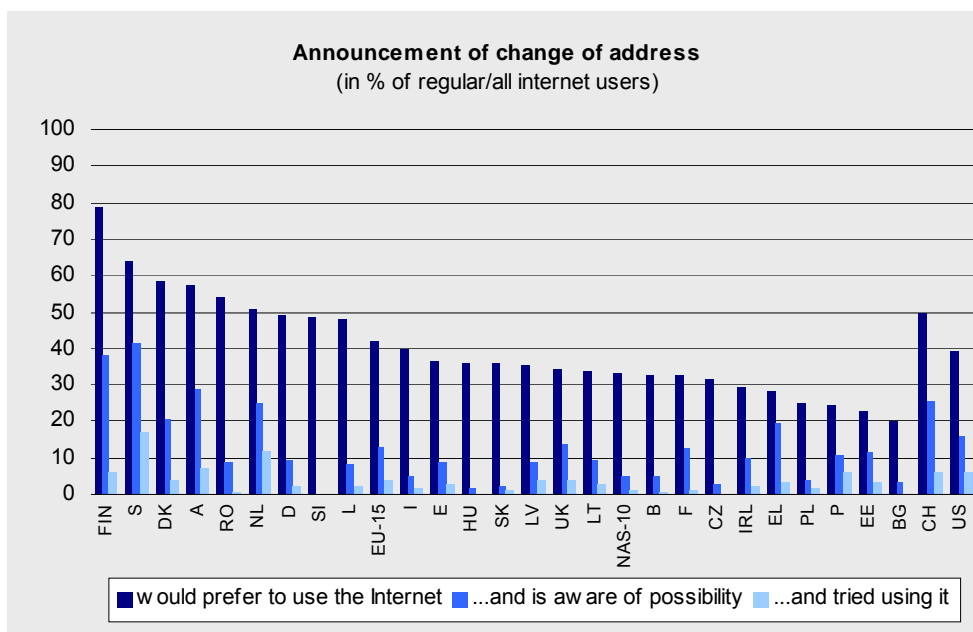


Figure 56 – Announcement of change of address
 Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages
 Question: K1g
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

For the announcement of the change of address via Internet (Figure 56) Slovenian Internet users are also more interested than the EU population on average (Slovenia 49% vs. EU-15 42%). But similar to tax declaration, car registration and personal document requests none of

those surveyed was aware of the possibility of doing so. The usage of this online service is rather low in general, either because people are not aware that this service is available online or because it is not available yet.

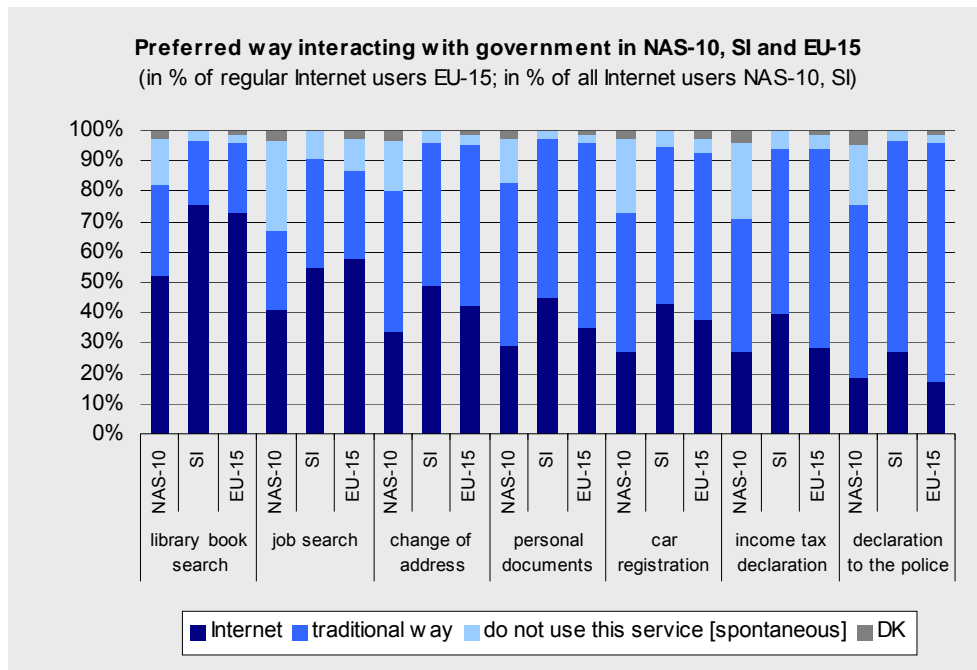


Figure 57 – Preferred way interacting with government in NAS-10, SI, and EU-15
 Bases: EU-15 countries: regular Internet users, NAS-10 countries: all Internet users, weighted column percentages
 Questions: K1a, K1b, K1c, K1d, K1e, K1f, K1g
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

E-Health

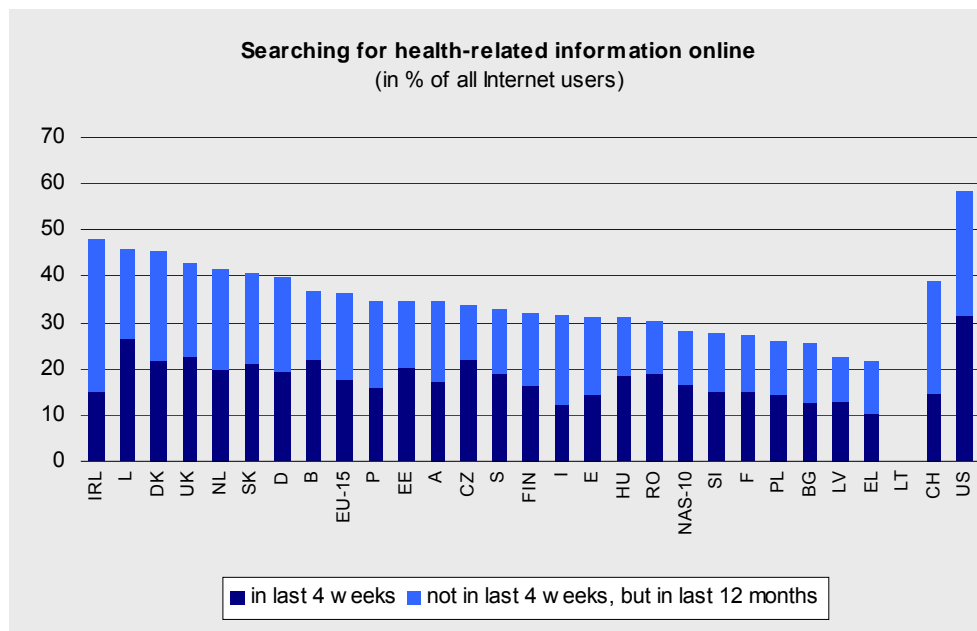


Figure 58: Searching for health-related information online
 Bases: all Internet users, weighted column percentages
 Question: A18f
 Sources: SIBIS 2002, GPS, SIBIS 2003, GPS-NAS

Annex 2 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 online and can be obtained from the SIBIS website: <http://www.sibis-eu.org/sibis/statistics/questionnaires.htm>.

Sample characteristics GPS 2002

	Total		EU-15	
	unweighted	weighted	unweighted	weighted
Total sample	11832	11832	10306	10306
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 online and can be obtained from the SIBIS website: <http://www.sibis-eu.org/sibis/statistics/questionnaires.htm>.

Sample characteristics GPS-NAS 2003

	Total		NAS-10
	unweighted	weighted	weighted
Total sample	10379	10371	10379
Country			
BG	104	1008	-
CZ	1096	1096	-

EE	1001	1001	-
HU	1000	1000	-
LT	1017	1017	-
LV	1006	994	-
PL	1000	1000	-
RO	1054	1054	-
SI	1002	1002	-
SK	1199	1199	-
NAS-10	-	-	10379-
Age groups			
Up to 24	2036	1825	1736
25 to 49	4473	4604	4593
50 to 64	2402	2202	2234
65 and more	1468	1740	1816
Long standing illness			
Existence of health limiting conditions	2272	2386	2555
No existence of health limiting conditions	7961	7836	7688
Don't know	146	149	137
Terminal education age			
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
Employment status			
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
Internet usage			
Never heard of the Internet (incl. don't know)	1349	1437	1506
Ever heard of the Internet	9030	8935	8773
Total Internet use	3700	3507	2773
Regular use (last 4 weeks)	3025	2852	2215
Occasional use (last 12 months)	675	655	559
Non Internet use	6679	6864	7606
Mobile phone usage			
Mobile phone owner	5763	5635	4534
Telework			
Home based teleworkers	162	162	120