

LIIVAR LEPPIK
FOUNDATION ARCHIMEDES

**COMPARISON OF ESTONIAN
AND EUROPEAN ICT
SECTORS' STATE OF AFFAIRS
AND DEVELOPMENTS**



CONTENTS

	Foreword _____	35
2.1	Telecommunication infrastructure – current situation and developments __	36
2.2	Current state of affairs in Internet/PC infrastructure _____	41
2.3	Internet usage and services _____	44

Many international reports have included analyses of the situation and trends of Estonian information society and information communication technology (ICT). Most of them have declared the findings to be surprisingly positive. For example the United Nations Development Report places Estonia to the 30th place in the domain of general technological achievement (Viik 2001). At the same time Estonia's position in overall human development is only 44th, and in purchase parity GDP per capita it is even lower (UNDP Development report 2001). Moreover, in McConnell's reports (2000, 2001), which specifically evaluate and compare e-readiness of different countries, Estonia is placed ahead of not only the most Central and Eastern European Countries (CEEC) but also many highly industrialized Western European countries. That estimation is confirmed by the World Competitiveness Yearbook (2001) where Estonia is considered to be on the 9th place in online environment development, and in 22nd place in overall competitiveness for calculation of which the country's overall success in ICT take-up has an important role to play.

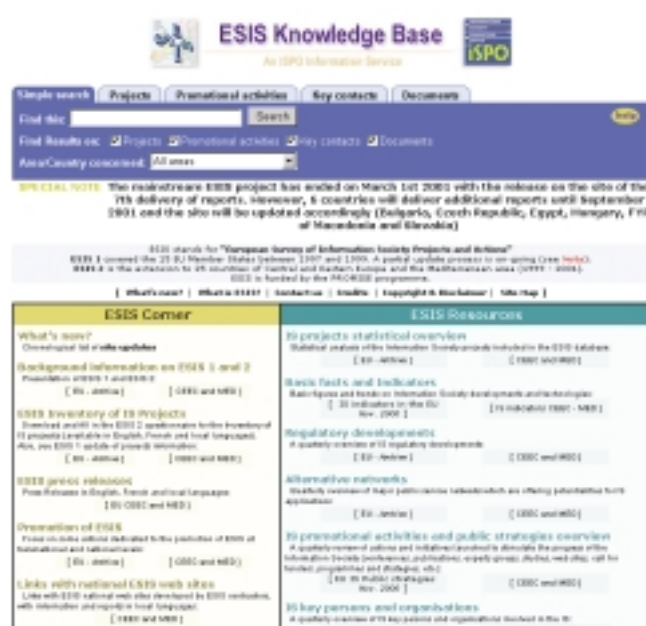
However, most of the above-mentioned reports do not include the measurable basis for their estimations – i.e. the state of affairs of different domains of ICT development in Estonia. Therefore, the present analysis strives to give a more specified picture of Estonian comparative international position – i.e. the position compared foremost to CEEC countries but also to Western European countries (the latter comparison is prompted by Estonia's high position) – in implementing ICT technologies. The data for analysis has been obtained mainly from the newest publications of European Commission (different Eurobarometers)¹, OECD different reports², Global E-commerce survey 2001, and ESIS³ survey. For obtaining some of the newest Estonia's data, BNS databases have also been used.

Drawing some preliminary conclusions from the analysis, it can be noted that although Estonia has achieved a remarkable success in some areas – e.g. comparatively high usage rates of Internet and government online services, high penetration of Internet among Estonian enterprises, comparatively high rates of mobile penetration, upsurge of Public Internet Access Points (PIAP) etc. – it still has lot to do providing for schools and households needs for Internet connectivity. And while Estonia has enjoyed a rapid upsurge of new broadband connection lines, the prices for these connections are still relatively high, and thus these technologies remain mostly inaccessible to socially disadvantaged groups. Moreover, as the latter group remains mainly dependant on traditional means of Internet access – i.e. modem connections – the comparatively low penetration of digital telephone lines and increased local call charges are still a matter of concern in Estonia. Finally, the e-commerce related Internet usage, problematic in all over the world, is remarkably low in Estonia compared to its population's overall eagerness to use Internet.

¹ See http://europa.eu.int/information_society/eeurope/benchmarking/list/2001/index_en.htm for reports.

² See <http://www.oecd.org> for the reports.

³ European Survey of Information Society (1999-2000). See www.ispo.cec.be/esis for the reports.

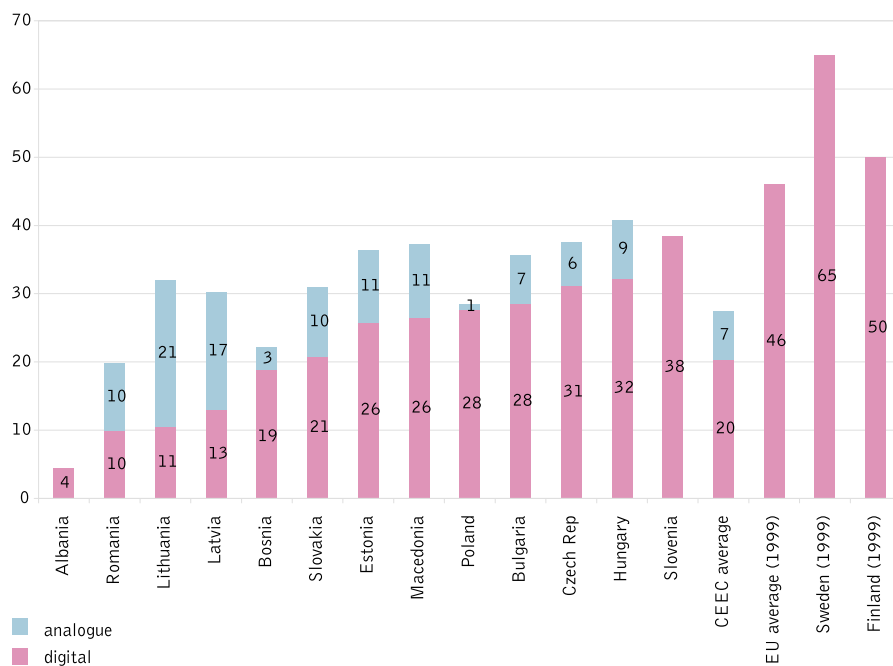


www.ispo.cec.be/esis

2.1 TELECOMMUNICATION INFRASTRUCTURE – CURRENT SITUATION AND DEVELOPMENTS

Chart 1 Main lines per 100 people, 2000

Source: ESIS: SOE (Statistical Office of Estonia)



Estonia has achieved a solid success in the main lines development over the last decade. In 2000 only two Central and Eastern European Countries (CEEC) – Hungary and Slovenia – had more main telecommunication lines per 100 inhabitants. However, as can be seen from Chart 1, the average penetration of main lines in the EU is still substantially higher than that in Estonia, and our Nordic neighbours – Sweden and Finland – are especially advanced in this domain. Moreover, the digitalisation of Estonia’s telecommunication lines still remains a matter of concern, albeit the incumbent operator – Estonian Telephone Company - has achieved noTable progress. Thus in the domain of digitalized lines penetration, Estonia is in the middle position among Central

and Eastern European countries and lags far behind from its Nordic counterparts.

From Table 1 it comes out that Estonia’s main lines growth rates are over two times lower than those of CEEC, and that slowdown in the progress can be observed. Notwithstanding, the main lines penetration in the EU has increased even at much lower pace than that in Estonia. It can be concluded that a certain level has been achieved by Estonia in this area, and the future growth will appear in the domain of new access paths – broadband connections, wireless technologies etc.

Table 1. Main lines yearly average growth rates, 1996-2000

	1996-2000 (%)	1999-2000 (%)
Estonia	4.9	2.5
CEEC	9.5	6.5
EU*	-2	

* 1996-99 mean growth rate

Source: ESIS: SOE

Local incumbent operator Estonian Telephone operated until the end of 2000 under the privileges arising from the concession agreement concluded with the Estonian government. In that way, as is seen from Chart 2, Estonian Telephone has been able, albeit through rigorous authorization process, to reduce substantially the charge of the long distance call and to increase the charge of the local call over the recent years. The company’s motive is, as it has been communicated to the public, to establish cost-based, fair and

competitive prices to its services as fundamental costs for providing both the long distance and short distance call service are the same for Estonian Telephone. Although the reduction of long distance call charges more than by the factor of 2 is certainly positive for overall Estonian information communication technologies development, more than three-fold surge of local call charges over the span of six years is certainly inhibiting certain areas of ICT develop-

ment. The price increase is, for instance, especially undermining the Internet usage possibility of socially disadvantaged group (unemployed, retirees etc), for these groups of people generally do not have the means to afford new broadband connections, where substantial cost savings can be achieved in case of frequent usage and large amounts of time spent online, and have to rely on traditional modem connections. In contrast, the EU average price levels, since the beginning of liberalisations in telecommunication market in 1998, have constantly decreased (OECD 2001).

Due to harsh competition in the mobile communication services market and Estonians' overall high receptiveness to wireless services, the mobile penetration has reached relatively high levels in Estonia. Compared to CEEC level (Chart 3), Estonia is one of the leaders in that domain and only the Czech Republic and Slovenia have higher penetration rates. However, the EU average penetration is still somewhat higher (especially considering that EU data is only from 1999), with Finland's mobile penetration being almost twice as high as that of Estonia.

From Chart 3 the surge of ISDN lines in Estonia can also be observed, as Estonia's position is second in CEEC in this area; but it can be also concluded that EU countries, especially Estonia's Nordic neighbours, are far ahead.

Chart 2. Local and long distance call charges developments 1996-2001⁴

Source: BNS; www.et.ee ;

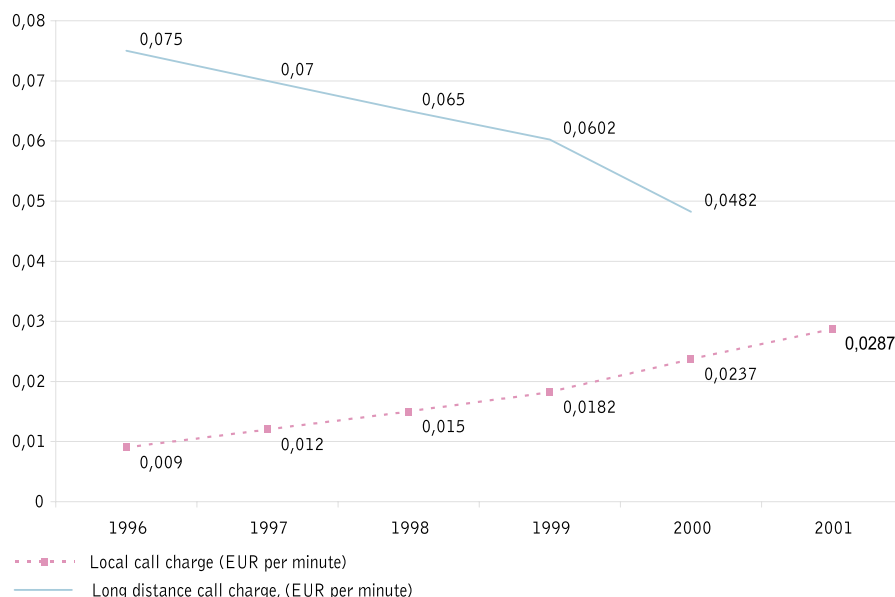
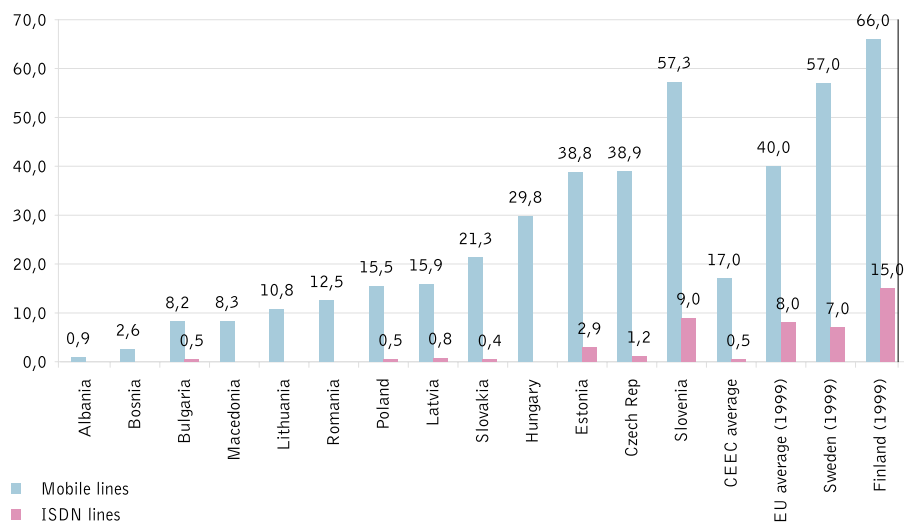


Chart 3. Mobile and ISDN lines per 100 inhabitants, 2000

Source: ESIS; SOE



⁴ In 1999 Estonian Telephone imposed, in addition to minute rate, a fixed call-starting fee to all communications. The latter is included into calculations of the minute costs for 1999, 2000 and 2001 as the starting fee is divided by 3 – the average length of a call in minutes in 1999 (BNS) – and then added to the per minute charge.

Table 2 Mobile and ISDN lines yearly average growth rates

	1996-2000 (%)	1999-2000 (%)
Mobile lines		
Estonia	70.8	44.8
CEEC	99.5	73.5
Finland; Sweden*	26	
EU*	70.5	
ISDN		
Estonia	73.5	55.7
CEEC		100
EU*	48.5	

*1996-99 mean growth rate

Source: ESIS; SOE

From Table 2 it follows that the growth rate of Estonia's mobile penetration over the span of 5 years has been similar to that of EU; and although the growth has slowed down recently, it is still rapid enough to carry Estonia closer to the levels attained by Sweden and Finland, where the growth has significantly diminished due to achieving relatively stable level of mobile penetration. Thus the somewhat higher average growth rates of mobile and also ISDN penetration of CEEC countries is logical and can be expected, for Estonia is one of the leader countries in these domains. However, the importance of ISDN connection lines as the more advantageous options as regards speed and price to ordinary modem connection is diminishing with the upsurge of new broadband solutions.

In total, Estonia's total effective lines penetration is high enough to bolster its position in leading CEEC countries. The biggest role here is to be played by the rapid uptake of mobile communication habits by the Estonian population since Estonia has one of the highest percentages of mobile lines in total effective lines in CEEC. However the levels of effective lines penetration achieved by EU countries

still remain substantially higher than these attained by Estonia. Moreover, from Chart 4 it follows that compared to Estonia, Finland and Sweden have reached even twice as high the levels of effective lines penetration.

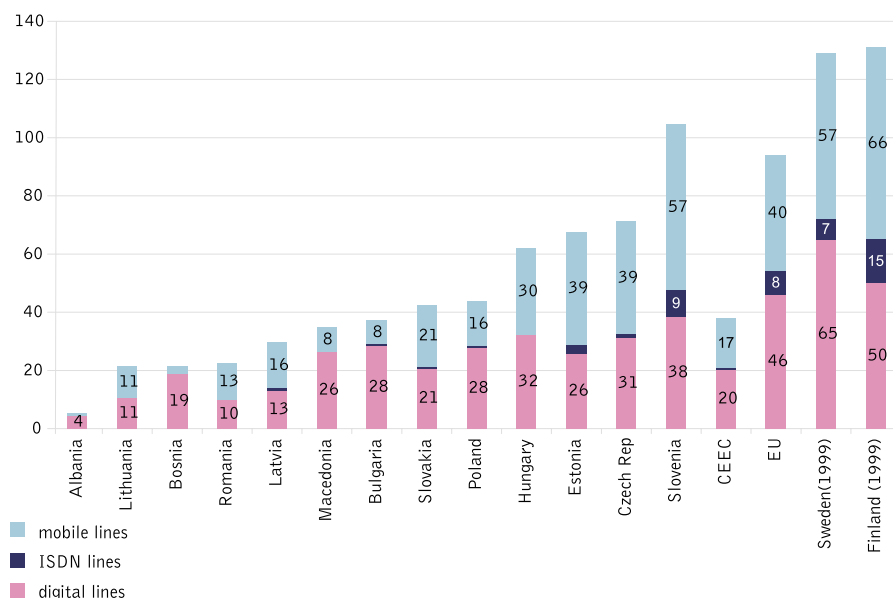
Total lines yearly average growth rates of Estonia have been similar to these of EU and CEEC. However, certain slowdown can be observed in the lines growth rates in Estonia, whereas the growth tempo of total lines penetration in CEEC is surging up (Table 3). Considering the findings at the beginning of the chapter, the latter tendency indicates that Estonia is moving close to a certain saturation point in conventional lines as well as mobile lines development. Therefore, the levels of total lines penetration

achieved by EU countries, and especially by Nordic countries, will not be attained in Estonia in the near future. Thus, the focal point of ICT infrastructure development has to shift to the promotion of new broadband and wireless services to ensure Estonia a leading place in Europe in these areas.

The biggest and most influential telecommunication operators in the Estonian market are mostly owned by Nordic, especially Finnish, parent companies. Moreover, as Estonia is geographically and historically much more bound to these countries than to CEEC countries, it has much stronger trade relations with its Nordic

Chart 4. Effective communication lines per 100 inhabitants, 2000

Source: ESIS, SOE



neighbours (especially, again, with Finland) than with Eastern European countries. Therefore, it is but natural that Estonia's telecommunication sector structure, and in the present case structure of total lines (Chart 5), is resembling more the structure of the telecommunication paths of the Nordic countries than the structure of main lines of CEEC, or even EU. Nevertheless, one should bear in mind that although the structure of the total lines in Estonia may be similar to that in Finland, the total line penetration rate in Estonia is still far behind from the levels achieved either by Nordic countries or by EU countries in general.

The new ADSL broadband technologies have established themselves as viable data communication options to the end-line customer – private as well as corporate – since the beginning of 2001. The biggest success has been achieved by the countries that had effectively unbundled their local telecommunication network and thus created basis for natural competition in the sector (OECD 2001). However, some countries that have dominating monopoly operating in the local telecommunication market have still been able to implement quickly and in a large number the new ADSL connections. The reason is that the incumbent telecommunication players have been willing to maintain their competitive advantage in the face of potential future competition, coming from the new market entries, by providing new and innovative solutions to the customers. The latter tendencies are exemplified in Estonia where the uptake of the ADSL technologies has been remarkably quick (Table 4) compared to other countries in the world. Moreover, the high level Estonia has reached is even more outstanding considering that the incumbent operator – Estonian Telephone – was the only one to start providing that service⁵.

The relatively low and affordable prices of the new broadband communication possibilities are of utmost importance as regards the new ICT technology uptake by the whole country. The probability for such an outcome is determined by the prevailing market conditions, either be they competitive and consumer friendly, or monopolistic and burdensome for customers to bear. Therefore, it should come as no surprise that despite Estonian Telephone's strong initiative to promote new ADSL solutions in the Estonian market, the charges for these solutions have remained relatively high comparing with other countries (Table 5 and 6). One can explicitly see the price level difference by comparing relative costs of the broadband access with maximum data transfer rate (in this case maximum downstream data rate).

It can be also noticed that for corporate customers (Table 6) the charges for ADSL connections are somewhat more advantageous than for private customers. However, that is true only in case of bigger companies that do need such a high maximum download rate as 8 MB per second. The relative cost for the alternative (e.g. Atlas ADSL Plus) with lower data transfer rate is still higher than in most other countries. The relatively high cost for the new broadband access is especially hinder-

⁵ Now Uninet has also started to provide the DSL service (<http://www.uninet.ee/kodu/teenused>), and also cable Internet broadband connection providers have increased the competition. Therefore the prices have fallen substantially recently (see also <http://www.et.ee>).

⁶ See <http://www.point-topic.com> for reports.

Table 3 Total lines yearly average growth rates 1996-2000*

CEEC	22.4%
CEEC (1999-2000)	25.30%
Estonia	22.30%
Estonia (1999-2000)	21.80%
EU (1997-1999)	19.50%

*Analogue lines included

Source: ESIS: SOE

Chart 5 Structure of lines (2000)

Source: ESIS: SOE

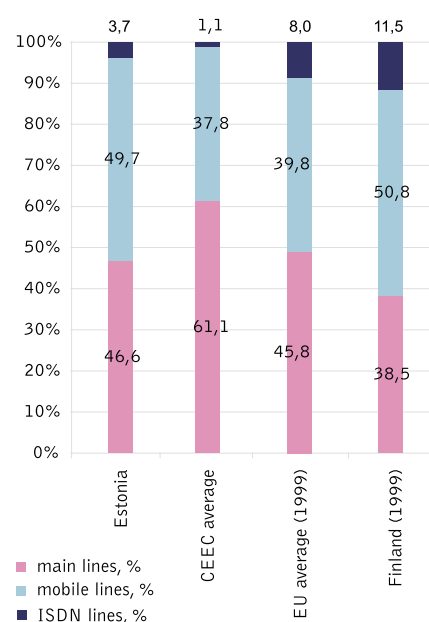


Table 4 Number of ADSL-s in some selected countries (August 2001)

	ADSL (000)
US&Canada	4070.7
Austria	68.8
Belgium	94
Denmark	70
Germany	615.6
Italy	210
Netherlands	60
Spain	112
Sweden	68
Switzerland	15
UK	80.7
Estonia	10.7
Hungary	5
Latvia	1.5
Hong Kong	249
South Korea	3361

Source: Point-Topic⁶

Table 5. Low and residential DSL service price comparisons (in US\$) August 2001

Country	Operator	Service	Amortised costs ⁷ per month, USD	Max Down-stream data rate (Kbps)
Korea	Korea Telecom	ADSL Light	26.07	2000
Canada	Bell Canada	Sympatico High-speed Edition	27.64	1000
Taiwan	Chungwa	HiFly Residential	28.82	512
Japan	Yahoo Japan	ADSL	29.6	2000
Estonia ⁸	Estonian Telecom	ADSL Light	36.32	256
Germany	Deutsche Telekom	T-Online dsl flat	41.48	768
Italy	Telecom Italia	Teleconomy 24 ADSL Home	48.48	256
Belgium	Belgacom	Turbo Line Starter Go	49.68	750
USA	Verizon	Online DSL Enhanced	49.95	768
France	France Telecom	Wanadoo ADSL Xtense	52.95	512
Estonia (1)	Estonian Telecom	Atlas ADSL Medium	53.10	384
Spain	Telefonica de Espana	ADSL Class	57.89	256
USA (1)	SBC	Basic DSL	58.2	1500
United Kingdom	British Telecom	Openworld Home	66.92	500

Source: Point-Topic; ET

Table 6. Selected Business DSL Tariffs (in US\$), August 2001

Country	Operator	Service	Amortised costs ⁷ per month, USD	Max Down-stream data rate (Kbps)
Canada	Bell Canada	Internet high-speed Access	65.27	1500
USA	Verizon	Online Business DSL Advanced Plus	85.7	1500
USA (1)	Covad	TeleSoho	89	1500
France	France Telecom	Netissimo 2	94.98	1000
Estonia	Estonian Telecom	Atlas ADSL Plus	103.03	512
Korea	Korea Telecom	Multi IP	150.63	2000
Estonia (1)	Estonian Telecom	Atlas ADSL Extra	165.66	1000
United Kingdom	British Telecom	Business 1000 PLUS	223.02	1000
Germany	QSC	Q-DSL Office	224.15	1500
Estonia (2)	Estonian Telecom	Atlas ADSL Premium	334.48	8000
Germany (1)	Deutsche Telekom	T-Interconnect Variante 1 Flatrate	481.03	1500

Source: Point-Topic; ET

ing the development of the ICT sector regarding that the general price levels and living standards of most other countries, used as comparison, are an average 2- 3 times higher than these of Estonia (UN development reports 1999-2001). Therefore, even much bigger discrepancies could be observed when using purchase parity methodology. However, these results should be subject to cautious scrutiny as the new broadband communication services market is only taking up and changes are very fast to occur⁹.

⁷ The amortised costs have been calculated by adding one-twelfth of the fixed payment to the monthly payment.

⁸ Estonian kroons are converted to USD by the Estonian bank's monthly average exchange rate in August 2001 (1:17.39).

⁹ Due to the competition between different operators the prices of DSL connections have indeed fallen substantially recently (Aripäev Online 28.02.2002 – <http://www.aripaev.ee>).

2.2 CURRENT STATE OF AFFAIRS IN INTERNET/PC INFRASTRUCTURE

The penetration level of personal computers among country's citizens has big impact on its overall ability to embrace new information communication technologies. It is important, therefore, that each and every person, if not already the owner of a PC, has at least an option to use one.

From Chart 6 the rapid increase in Estonia's computerization can be observed. From 1999 till 2001 the average PC penetration in households has increased almost one hundred percent, and thus Estonia is quickly catching up with western market economies like France and Italy. However, the most computerized nations in the world like USA, Finland etc. still have twice or more computers in their households than there are computers in Estonian households.

In the framework of Estonian "Tiger Leap" program the computerization of primary and secondary schools has been one of the main priorities. During last years a certain saturation point has been achieved and the priority has shifted from the simple approach of only the hardware provision to the more diligent approach of providing skills also for teachers and pupils to use that hardware. However, as is seen from Chart 7, hardware provision in schools should still be a matter of concern for Estonia as it lags almost two and a half times be-

Chart 6. PC penetration in households

Source: Ariko Marketing; OECD

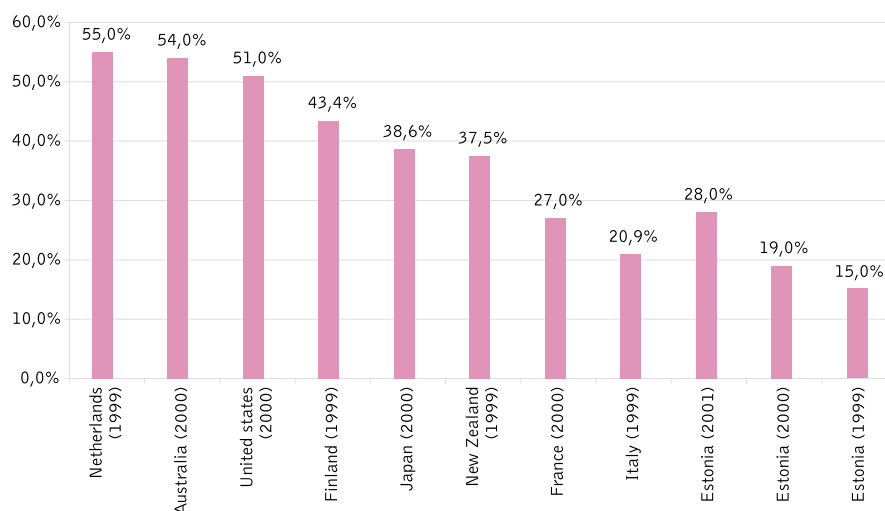
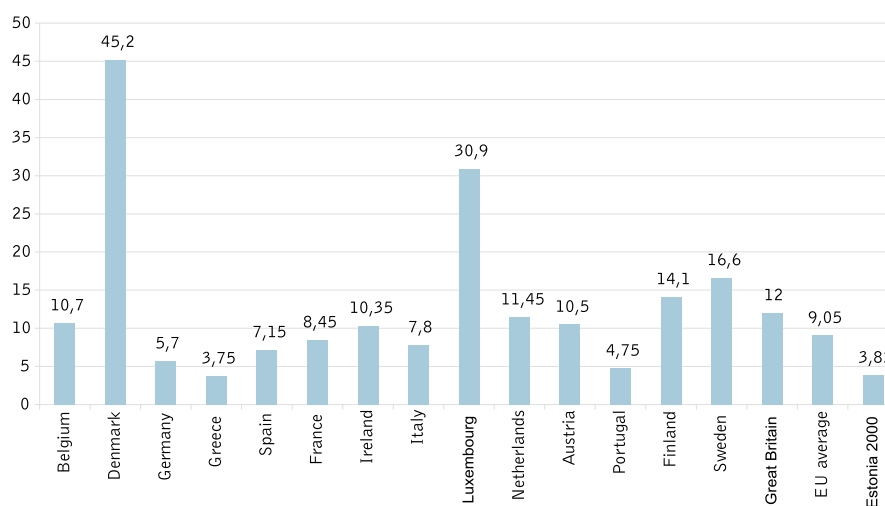


Chart 7 Computers per 100 pupils in primary and secondary level 2001 (Estonia 2000)¹⁰

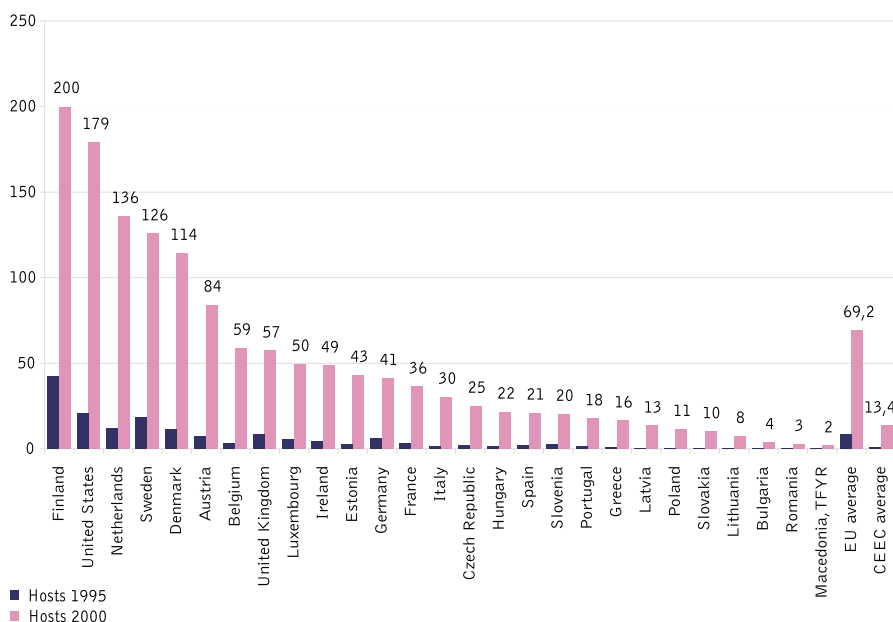
Source: European Commission (EC): Eurobarometer101-102 (Teachers; Headteachers); Estonian Tiger Leap Foundation



¹⁰ To compare the Estonian data, where the rate of computerization has been obtained using primary and high school as a single pool, with the European data, which has been obtained separately both from primary and high schools, the arithmetic average has been calculated according to EU indicators. Therefore, the results could not be fully comparable.

Chart 8. Internet hosts¹¹ (per 1,000 inhabitants), 2000

Source: UN development report 2001



hind the European average level of computers per 100 pupils in primary and secondary schools. Moreover, the computerization level in Finnish and Swedish schools is 3-4 times higher than in Estonia. Nevertheless, one can note high divergence in the distribution of the EU data, and Estonia is thus edging Greece and has about an equal amount of computers with Portugal.

For new ICT technologies to thrive, not only the relative rate of computers' ownership is important but also how many of these computers are connected to the Internet. Only then it is possible to profit from the rich content offered by the modern web, and thus to participate in the process of e-learning.

One possibility to assess the

rate of computers connected to the Internet is to utilize the Internet hosts' measure, which entails calculating the number of computers connected to the Internet at any given time. Chart 8 indicates that in this domain Estonia is clearly the leader among CEEC countries having almost twice as much the hosts per 1000 inhabitants as the Czech Republic, which holds the second place. Moreover, Estonia leapfrogs many big EU economies like Germany, France and Italy. However, due to very high Internet connectivity rates in the Nordic countries – e.g. the number of hosts per 1000 people in Finland is almost 5 times higher than that in Estonia – the average level of hosts per 1000 people in the EU is still one-third superior to that in Estonia.

From Chart 8 as well as from Table 7 it can be observed that the average growth rates of Internet hosts have been remarkably high for all the countries during the last six years. Moreover, in Estonia computers' connectivity to Internet has increased especially quickly, surpassing the growth tempos of not only the EU countries, where certain saturation point could have been achieved, but also CEEC countries that should supposedly have higher increase rates as their Internet hosts penetration level is substantially lower than that of Estonia.

Nevertheless, Chart indicates that households and enterprises do not have the same level of connectivity to the Internet in Estonia. In fact, the more than four times discrepancy between Internet penetration levels of households and enterprises implies bigger inequality between these

two groups in the Estonian society than in the EU society, where the difference in penetration level is much smaller. The latter disparity can also indicate the eagerness of Estonian entrepreneurs to take up new ICT technologies, or at least connect their computers to the Internet. Therefore, the level of Internet connectivity in

Table 7. Average growth rate of Internet hosts per 1000 inhabitants, 1995-2000

Estonia	78,2
Finland	36,5
Sweden	46,6
EU average	51,9
CEEC average	67,5
United States	53,4

Source: UN development report 2001

¹¹ A computer system connected to the Internet—either a directly connected single terminal or a computer that allows access to network services for multiple users.

Estonian companies in the middle of 2001 is almost equal to the European Union level in the end of 1999.

Although in Estonian households the Internet access level is twice as low as that in the EU and 3-4 times lower of the levels attained by Estonian Nordic neighbours, the progress in this area in recent years has been but spectacular. Within the last three years the Internet access level of Estonian households has tripled; but the computerisation level has only doubled during the same period, which means that even older computers are being increasingly connected to the Internet (Ariko Marketing 2001).

From Chart 9 it comes out that only around one-sixth of the total Estonian households could use Internet at home. And although pupils/students and working population can profit from connections respectively either at school or at work, the complementary solutions for more disadvantaged and especially older people are needed to fulfil the objective to give each and every citizen a possibility to use Internet and thus benefit from the upsurge of e-learning.

The latter concern has been addressed by the "Look@World" initiative, which combines public and private sectors' efforts to enhance the Internet accessibility options for all the different groups of society, and especially for most disadvantaged people in that regard. One of the main activities of that project has been extending the network of Public Internet access points (PIAPs) where everybody has a chance to discover the opportunities offered by the World Wide Web for free. Therefore, it should come as no surprise that Estonia has quickly achieved a very solid position as regards the density of PIAPs all over the country, and by this token Estonia's level of PIAPs per 100 000 persons, as seen from Chart 10, is one of the highest in the whole European Union.

Chart 9. Access to Internet in households and companies

Source: ESIS; EC: Eurobarometer 103; Emor; Ariko Marketing

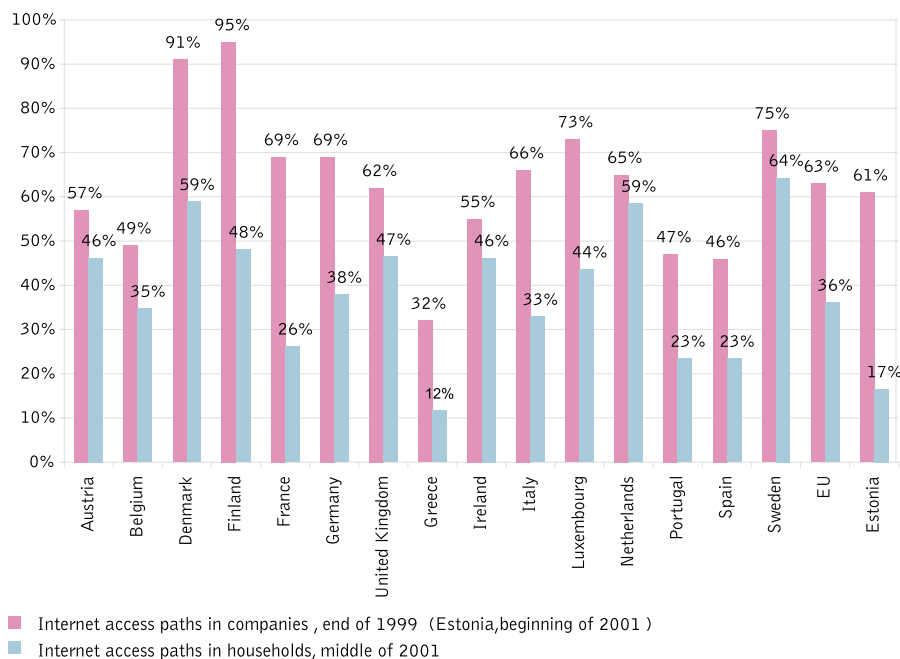
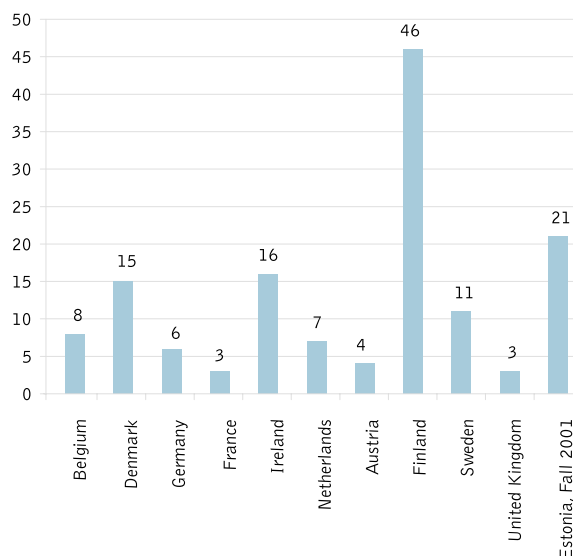


Chart 10. Public Internet access points (per 100 000 inhabitants), 2000

Source: EC: ESDIS¹²; Look@World Foundation¹³



¹² Employment and Social Dimension of the Information Society, see http://europa.eu.int/comm/employment_social/soc-dial/info_soc/esdis/bench_en.pdf for the report

¹³ See <http://www.vaatamaailma.ee> for the reports

2.3 INTERNET USAGE AND SERVICES

Estonia is considered to be a remarkable success story as to the implementation of new ICT technologies, and especially as to very wide usage of Internet among its population. However, from Chart 11 it can be observed that despite Estonia's leader position among Central and Eastern European countries, its Nordic neighbours

like Norway and Denmark have twice as high Internet usage rates as Estonia. Moreover, increase in the Internet usage rates in Estonia has somewhat slowed down; at the same time the Internet usage rates in most other European countries, and especially in CEEC countries, have augmented remarkably.

From the commercial and economic perspective, it is important how motivated the people are who use Internet and what means they have for consuming services and ordering goods through digital network. The usage without any commercial or economic value does not incite enterprise or public agencies to pool their resources to the development of web-based services or the enhancement of the content of their existing web pages.

In Estonia the biggest group of Internet users are persons aged less than 20 years. However, as can be seen from Chart

Chart 11. Internet usage per 100 inhabitants, aged between 15-74, 2000-2001

Source: Global E-Commerce Report 2001; Emor

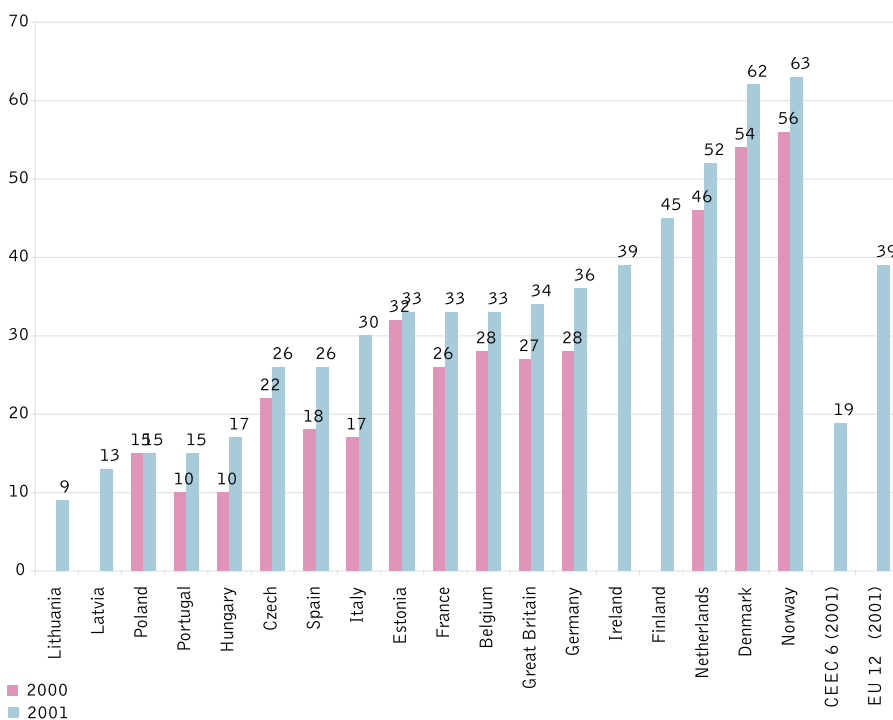
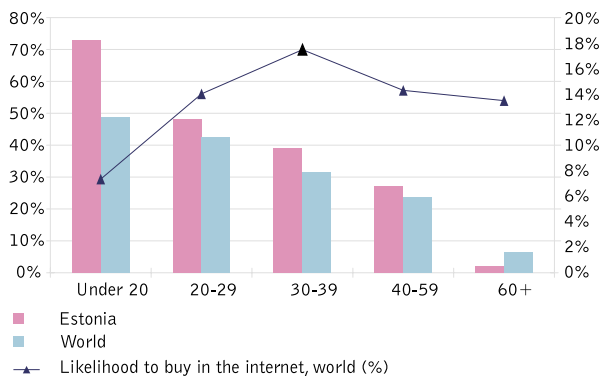


Chart 12. Age groups division and likelihood to consume online services of Internet users

Source: Global E-Commerce Report 2001



12, these people have the smallest likelihood to buy goods and services via the Internet. And although in the world in general the bulk of Internet using population tends to be relatively young, in Estonia the Internet usage distribution is especially unequal. That disparity amplifies among the people aged over 60 years – most often retirees – who in Estonia are remarkably less bound to use the Internet than are people of this age group elsewhere in the world.

One of the most influential features that discourages people to use web-based services and buy goods via Internet is weak network security. Only if people can be confident that their personal data, which they enter when they form the requests, and their credit card numbers are protected from fraudulent usage, they trust to utilize the services and buy goods and thus increase the profitability of "web economy".

There are several ways to measure the security of the

networks. One way is to count the servers using secure protocol for data transfer via network. In that domain Estonia has achieved quite a solid position placing itself in the middle of EU countries. However, the countries have quite big difference in their penetration levels of secure servers. Particularly the United States, where security concerns are being dealt with highest scrutiny, leapfrogs other nations. Therefore, there should be no satisfaction with current network security level in Estonia, for the biggest concerns are still to be dealt with.

Analysing the purpose of Internet usage, as it is done in Chart 14, one can notice that Estonia has one of the highest rates of people in the world who do not use the Internet for commercial activities. Estonia is thus surpassing in that domain even the highly "networked" USA. However, the relative amount of people who are actually buying via Internet, or using Internet for other commerce related activities like gathering information for potential purchase, is remarkably low in Estonia. It is thus only natural that Internet usage has not substantially increased in Estonia in recent years. And a new upsurge of usage cannot be foreseen in the nearest future, unless the people start to use more web-based services, and start to buy more through the Internet. As for now, the Internet usage has reached a certain saturation point in Estonia, and the further substantial growth can only be achieved through qualitative increase of Internet usage – i.e. the boost of using shopping or service related activities via Internet – than through quantitative increase that is based on the keenness of the younger generation just to "surf" in the Internet.

The more objective perspec-

Chart 13. Secure servers per million inhabitants, July 2001

Source: OECD: Netcraft survey

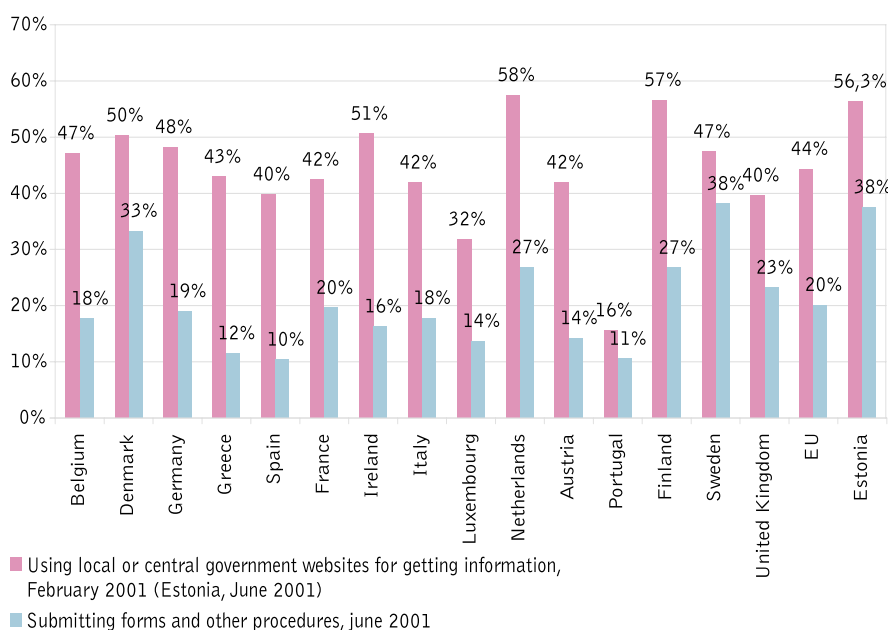


Chart 14. The purpose of Internet usage per 100 inhabitants, aged between 15-74, 2001

Source: Global E-Commerce Report 2001

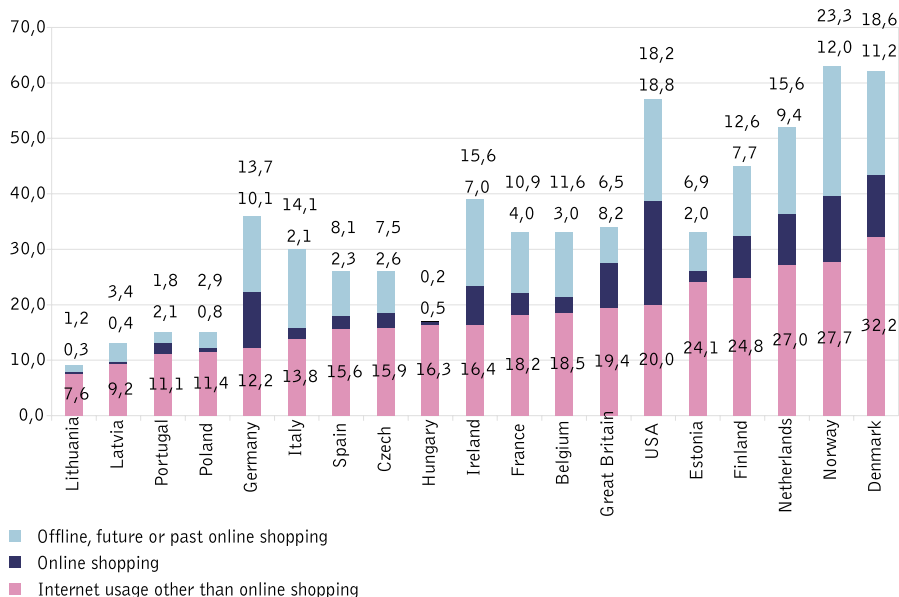
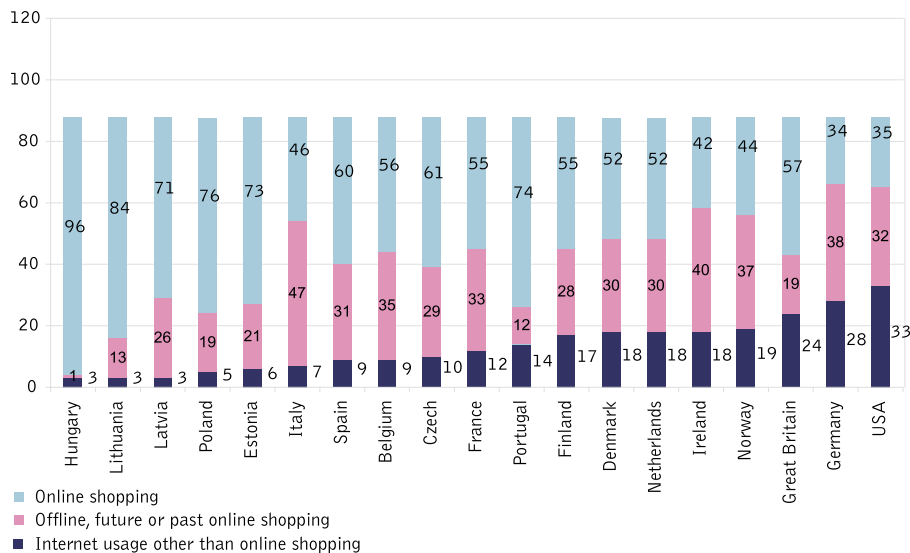


Chart 15 Structural division of the Internet users as regards commerce related activities

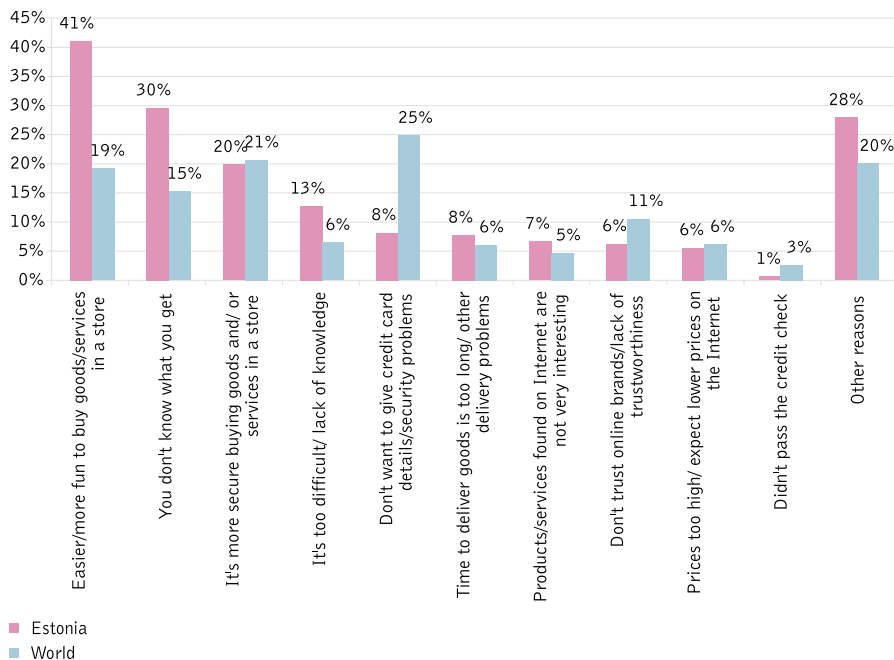
Source: Global E-Commerce Report 2001



tive of the Internet usage can be obtained when rating the countries according to the percentage of Internet users who have used Internet for pursuing commerce related activities. From Chart 15 it becomes evident that compared to the nations with lower levels of "real" welfare, the nations with higher level of economic wealth (i.e. the general economic development of the country as measured for example by GDP level) are having also remarkably higher level of commerce executed via virtual channels. And Estonia's position is all but outstanding as it is placed behind not only all the highly industrialized western economies, but also the Czech Republic, the country with surprisingly high ratio of commerce related Internet usage.

Chart 16. Reasons for non-buying via Internet

Source: Global E-Commerce Report 2001

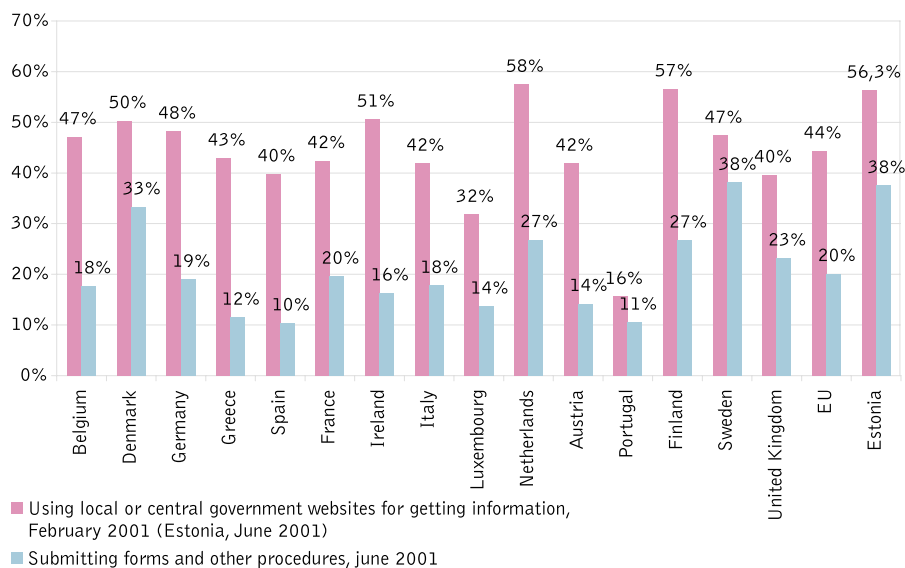


In the following Chart, where the main reasons for the non-buying via Internet are listed, it can be concluded that in Estonia the reasons for not using the Internet as a means for commercial transactions are much different from these in the world. While in the world in general the purpose for the negative behaviour lies in both the service quality and also the network security, in Estonia it lies only in service quality. Twice as high the levels of the Estonian people – who consider the main hindrance to be either the unattractiveness, inconvenience of buying via Internet, or uncertainty over what you finally get – compared to the people in the world, clearly indicates certain shortcomings in service variety, convenience and also trustworthiness of Estonian companies who are providing services and selling products over the web. While the more developed world is already addressing security concerns with the greatest effort, Estonia's greatest concern is still the quality and convenience of the web-based commerce.

However, from Chart 17 it can be concluded that while e-commerce related activities are not widely spread in Estonia, e-government related activities have been much more warmly welcomed there. Estonia is thus one of the leading countries in Europe using online government services, and profiting especially from the possibilities to fulfil different forms – e.g. income tax declarations – and submit documents online. It is to be only hoped that the public leadership will transfer also to the private sector, and particularly that it will propel the companies to enhance the quality of their product and service offerings via web.

Chart 17. Internet users using government online services, 2001.¹⁴

Source: EC: Eurobarometer 103, Emor



¹⁴ The data for Estonia and Europe should be treated with cautiousness, as they might not be fully comparable. The reason is that the poll is handled by different companies (companies undertaking Eurobarometer survey and Emor) that might not use the same underlying techniques to obtain the data. One should be especially careful interpreting the results for "submitting forms and other procedures", as Emor inquired for the rate of information submission, concerning persons themselves or their family, to governmental agencies. The latter can only be broadly interpreted as "submission forms and other procedures" which was the question Eurobarometer questionnaire used. <<<

