



**Central and Eastern Europe  
Information Society Benchmarks**

**Survey Results**

**Objective 0**

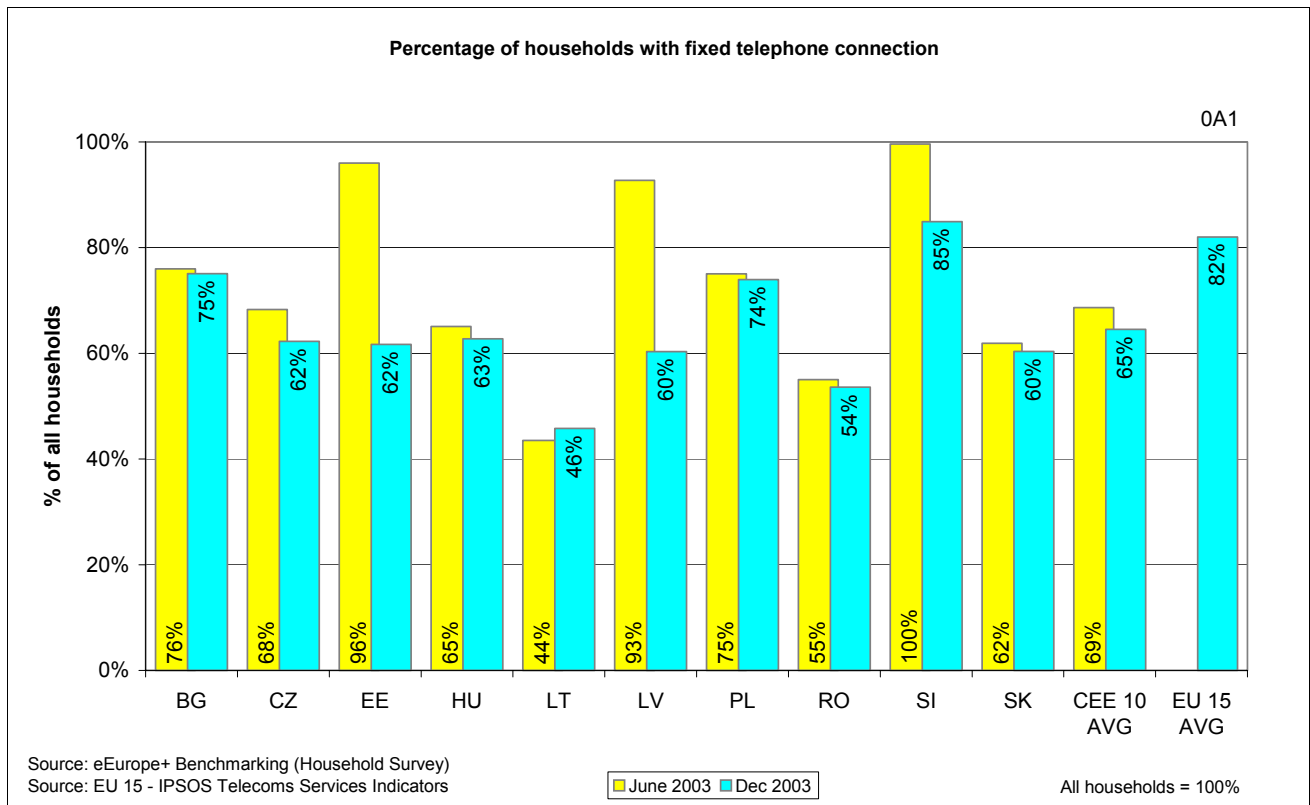
**Putting in place the basic building blocks**

September 2004

## 0.A ACCELERATE THE PROVISION OF AFFORDABLE COMMUNICATION SERVICES FOR ALL

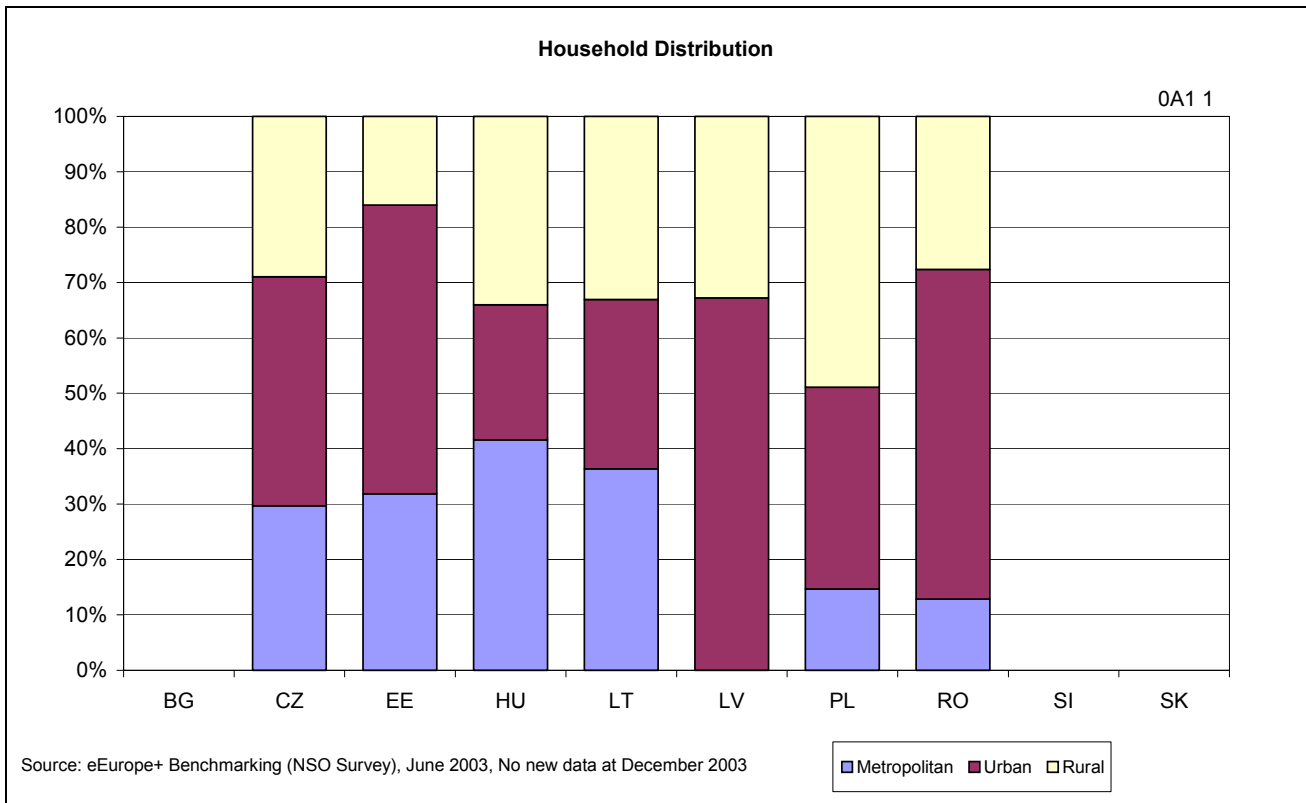
### 0.A.1 Percentage of households that have fixed telephone service

Definition: This indicator determines the type of telephone service available to households. In particular, it determines the service types provided over the available telephone connections that can be used for Internet access disaggregated by technology and by metropolitan, urban, and rural areas.



In December 2003, Slovenia had the highest penetration level at 85% followed by Bulgaria at 75% and all others at 60% or more, apart from Lithuania and Romania with the lowest fixed line penetration levels at 46% and 54% respectively. The graph shows sharp falls for Estonia, Latvia, and Slovenia but they can be disregarded as they are due to the change from CATI (Computer Aided Telephone Interviews), to face-to-face interviews carried out in all countries during the second eEurope+ Benchmarking Survey. When aligned with IBM data (3rd and 4th Reports, IBM December 2002, June 2003 Monitoring Candidate Countries), it is clear that *stagnation or decline is generally apparent in fixed line telephone penetration among CEE 10 countries*. This is also noted by OECD amongst OECD countries (OECD 2003), and probably accounted for by substitution of mobile telephony. Whilst IBM obtained their data from National Regulatory Authorities (NRAs), eEurope+ obtained its data from household interviews. IBM also note the following: that the number of fixed lines in Estonia has increased slightly due to the increase in digitalisation levels and wider use of xDSL and that there was an increase of 10% in fixed line penetration in Poland between June 2002 and June 2003 but that the eEurope+ Surveys report subsequent stagnation. The EU 15 countries have higher levels of fixed line penetration<sup>1</sup>.

<sup>1</sup> See Annex 2 ICT Infrastructure for more details p....



Data from the National Statistical Offices (NSOs) in Estonia and Lithuania, defined by rural, urban, and metropolitan areas, report significant rural/urban/metropolitan divides in two CEE 10 countries. For example, in Estonia, just less than one in five rural households has a fixed line connection compared to one out of two households in urban areas and all households in metropolitan areas. In Lithuania, just over one in four rural households, nearly one out of two urban households and nearly three out of four households in metropolitan areas have fixed line connections so a rural/urban divide is less pronounced in Lithuania than in Estonia

Data from TNS estimates indicate that more than 30% of the population in Lithuania, Latvia, Poland, and Slovenia live in rural areas, with all countries apart from Hungary having a rural population of more than 20%. These levels are overall much higher than for many EU 15 countries. With these low rural fixed line penetration levels, the opportunities for household Internet access are limited unless wireless solutions can be introduced, as no commercial telecommunications providers have expressed commercial interest in significantly extending their fixed line network in rural areas.

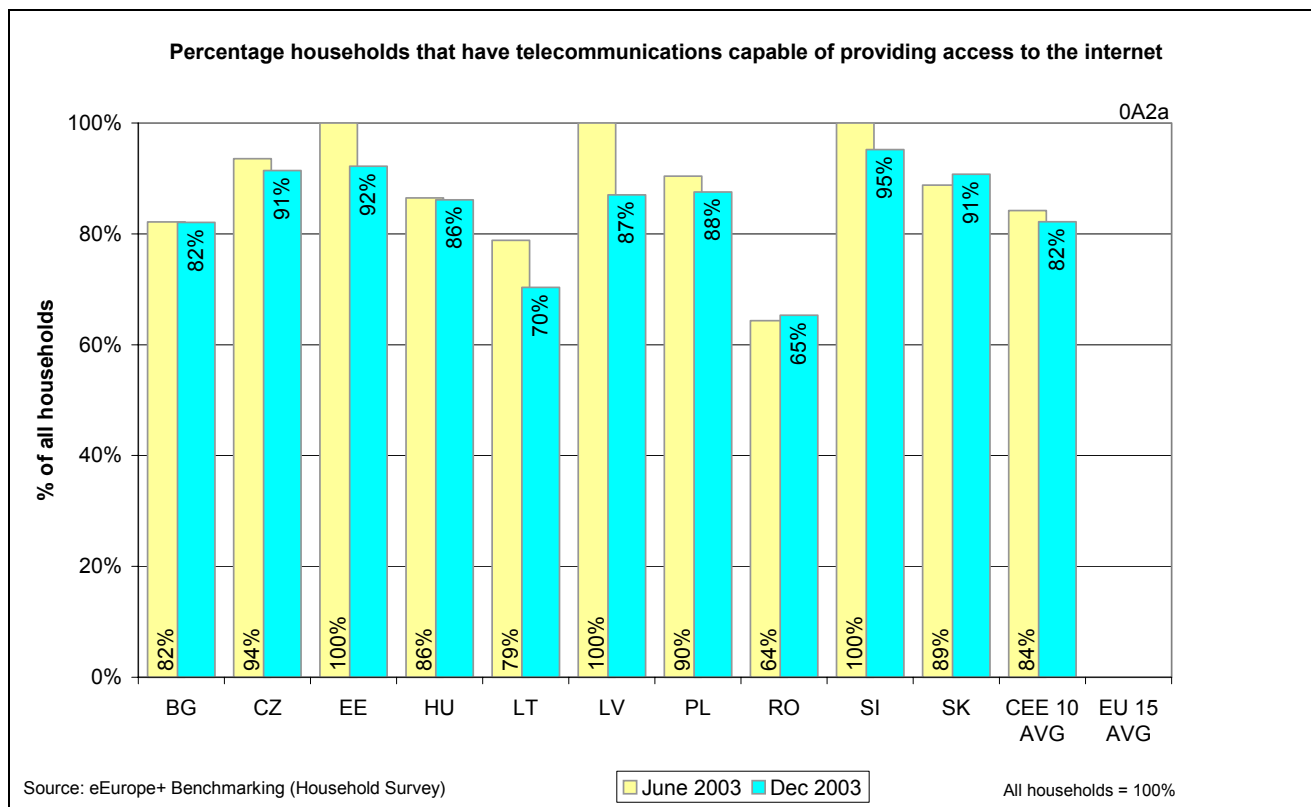
This type of data is very informative and needs to be collected in future from all of the CEE 10 NSOs. Even though the eEurope+ Action Plan was agreed in June 2001, some of the National Statistical Offices were unable to provide breakdowns of the population and households into metropolitan, urban, and rural areas in a consistent fashion using an agreed definition.

	Households with Telephone	Households without telephone
Estonia – Metropolitan area	100%	0%
Estonia – Urban area	53%	47%
Estonia – Rural area	23%	77%
Lithuania – Metropolitan area	70%	30%
Lithuania – Urban area	41%	59%
Lithuania – Rural area	27%	73%

The table above shows the percentage of households in metropolitan, urban, and rural areas with a fixed line telephone. Unfortunately, the only countries where the telecommunications operators have been able to provide a breakdown of the area in which their residential customers are located are Estonia and Lithuania.

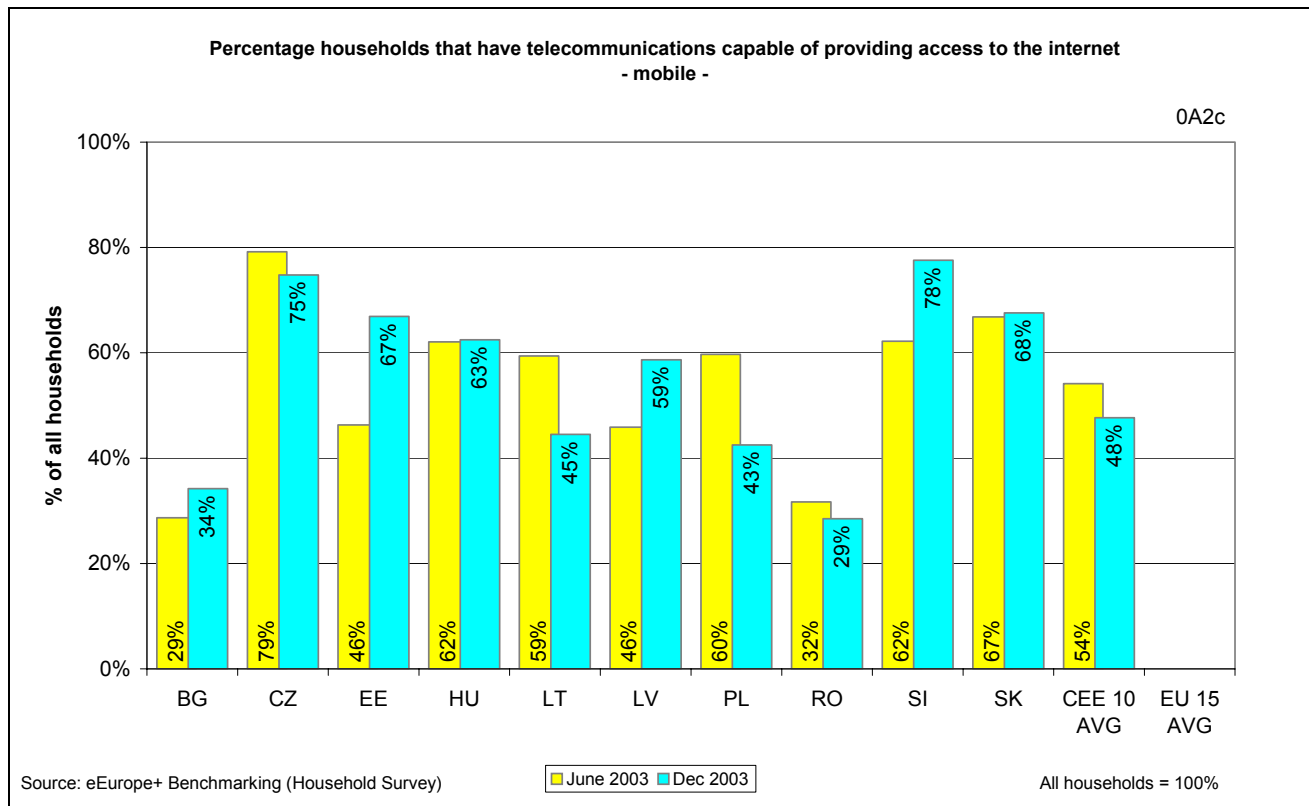
This incomplete information indicates the *existence of rural/urban/metropolitan divides and with over 70% of households in rural areas and sometimes over 50% of households in urban areas without a fixed line telephone service* in these two countries.

**0.A.2 Percentages of households that have some form of telecommunications that is capable of providing access to the Internet.**



All countries, apart from Lithuania and Romania, have more than 80% households with some sort of

telecommunications capable of providing access to the Internet but this data does not inform as to the quality of the access, with many fixed lines not being of sufficient quality to support useable Internet access.

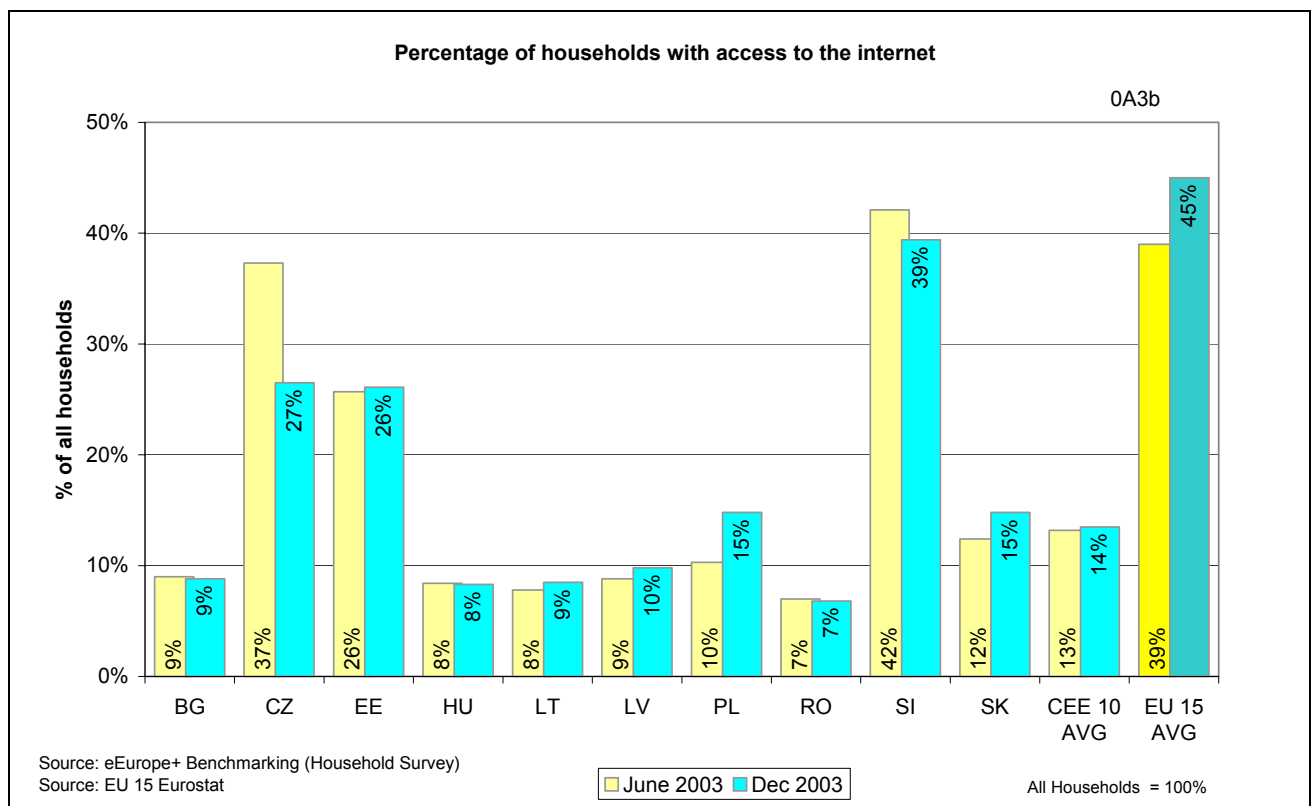


For mobile telephone penetration levels, Slovenia and the Czech Republic are the leaders at 78% and 75%, (levels approaching many EU 15 countries); the Slovak Republic (68%), Estonia (67%) and Hungary (63%) and Latvia (59%) cluster together, followed by Lithuania (45%) and Poland (43%), with Bulgaria and Romania at 34% and 29% respectively. Mobile penetration levels are clearly related to personal incomes, with the wealthier countries reporting higher penetration levels.

Mobile phone ownership is more important in rural areas than in metropolitan/urban areas in Bulgaria, Estonia, Latvia and Lithuania, (eEurope+ December 2003), four of the CEE 10 where rural fixed line penetration is low; substitution of mobile telephones for fixed lines is clearly taking place. In Latvia, it is reported that mobile phones have become cheaper due to competition and a wider range of additional services available (Briksne, December 2003). According to IBM, (IBM June 2003), rapid growth in the mobile sector in the Czech Republic has been driven by pre-paid packages and competition between the providers. In Estonia, mobile value added services allow mobile phones to be used for m-parking, m-payment and m-banking, (PRAXIS 2003).

ISDN access: reported at very low levels i.e. less than 2% for all countries apart from Slovenia (11%) where IBM (IBM Fourth Report June 2003) reports the highest penetration levels among the CEE 10 at 20% of all residential lines.

**0.A.3 Percentage of households with access to the Internet broken down by service.**

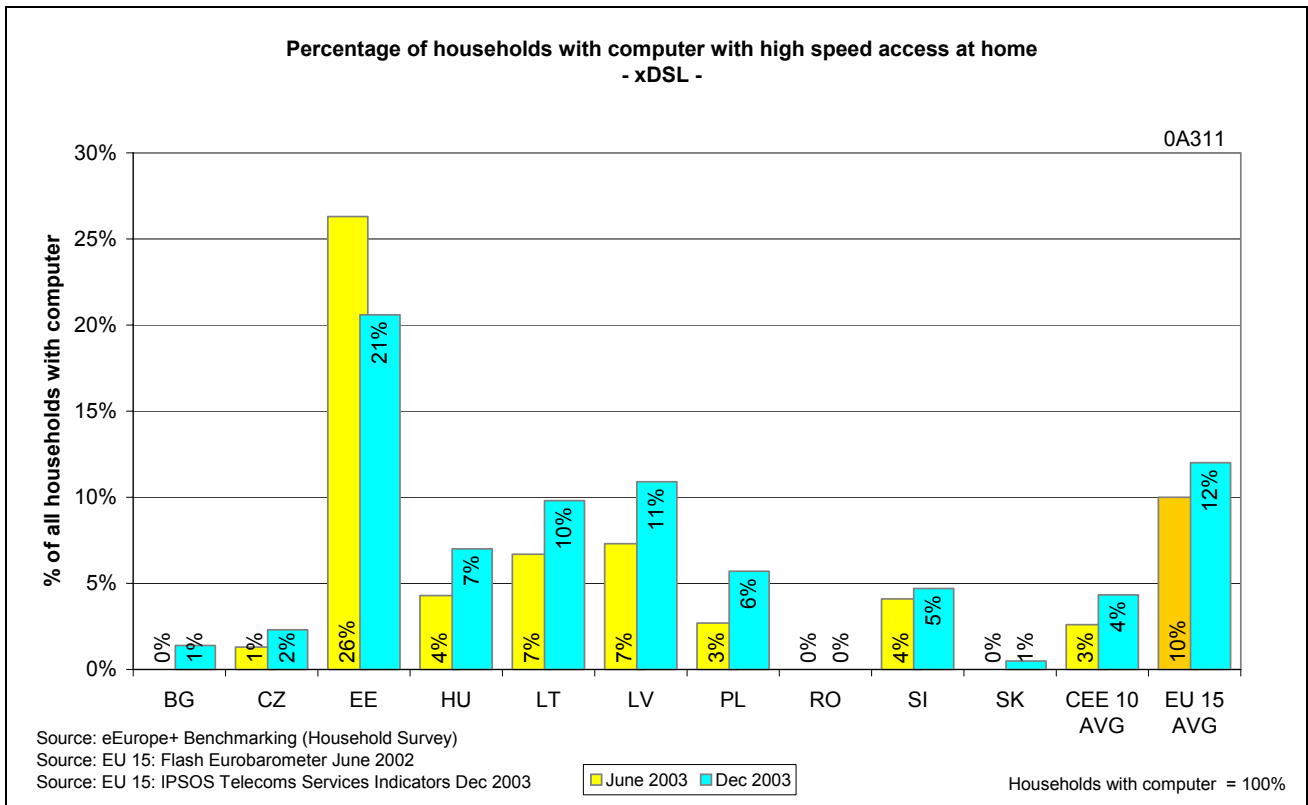


Three countries lead for Household Internet access: Slovenia (39%) is followed by the Czech Republic (27%) and Estonia (26%). They are followed, after a large gap, by Poland (15%) and the Slovak Republic (15%) and five other countries at 10% or less. Stagnation is apparent with further triggers required to boost access levels e.g. more affordable access, greater opportunity for acquiring computer skills and content that is more attractive. See Objective 1.A.2 Inhibitors for Internet access.

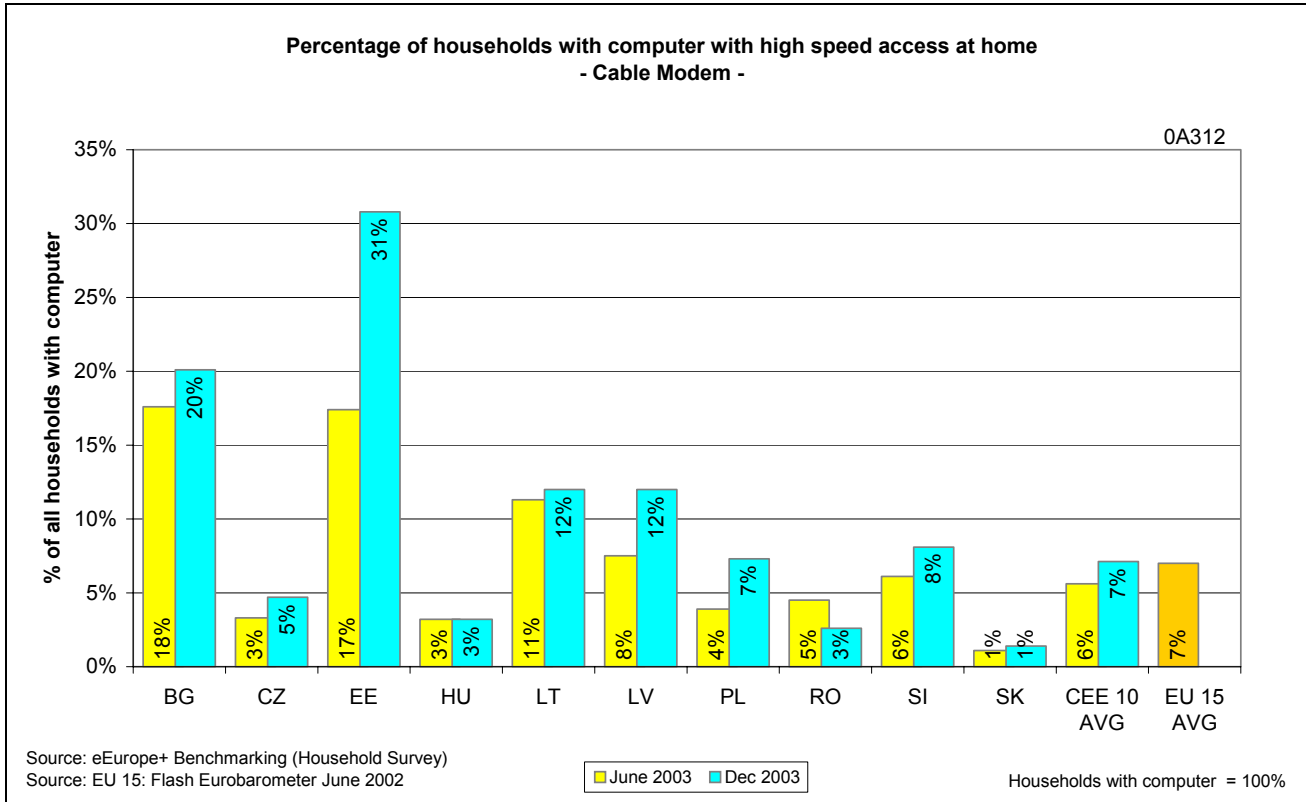
With an EU 15 average of 45% (Eurostat 2003), compared to a CEE 10 average of 14%, there is much catching up to do. The highest access penetration levels for EU 15 countries are found in Denmark (64%), UK (55%), and Germany (51%), with Spain (25%), Portugal (22%), and Greece (16%) trailing. It is encouraging that some of the CEE 10 are at least as good as the weaker EU 15 and that Slovenia is positioned more closely to the EU 15 leaders.

Cable modem Internet connection: the EU 15 average (June 2002) was 7% and six of the CEE 10 are performing as well as if not better than this: Bulgaria (20%), Estonia (31%), Lithuania (12%), Latvia (12%), and Slovenia (8%).

0.A.3.1 Percentage of households with high-speed access at home, high speed defined as xDSL, cable, satellite, and fixed-wireless, UMTS.



High-speed access (xDSL), amongst computer owners, is most important in Estonia (21%), followed after a large gap by Latvia (11%) and Lithuania (10%), and then by all other countries at levels of less than 10%. One in five Estonian households is using an xDSL connection, and one in ten in Latvia and Lithuania. At a penetration level for the whole population, Estonia lies just below the EU 15 (2003) average of 9%.



For high-speed access (cable modem) used by computer owners, Estonia, (31%), is again the leader, followed by Bulgaria (20%). With Lithuania and Latvia at 12%, all other countries lie below 12%.

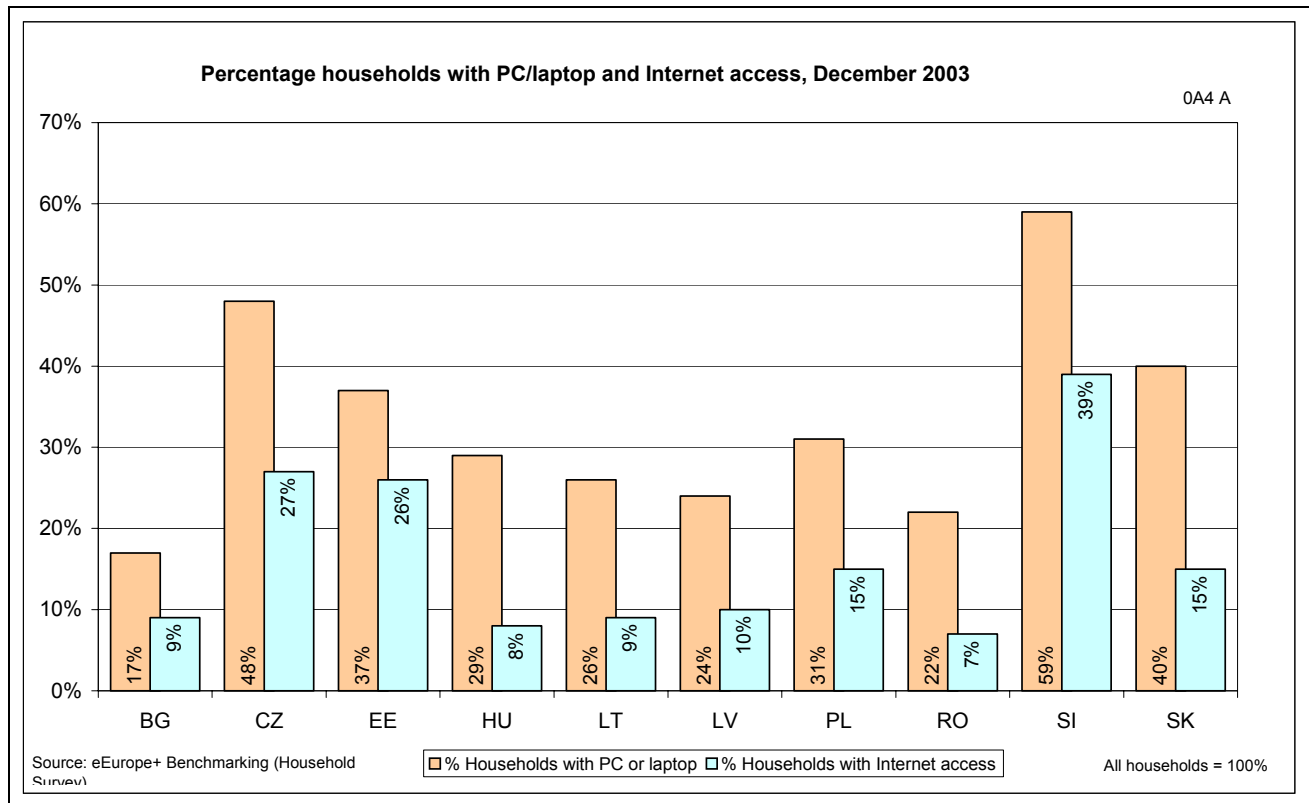
Estonia reports an increase of (+14%) so it is possible that users are favouring cable broadband over xDSL and indeed, TNS Estonia (July 2004) reported informally that cable modem connections were becoming more popular as they were cheaper than xDSL and that cable modem providers were waging large campaigns to gain ADSL clients. In Tallinn, the cable connection is much more widely used already than ADSL but the weakness of the cable modem is that the connection is offered in larger towns only and mainly in apartment buildings.

*Estonia is clearly the leader for the penetration of broadband for xDSL and cable, followed by Bulgaria for cable broadband.* It is notable that Estonia is also the leader for eGovernment (see 1.A.4) where the ability to download and upload forms is dependent on good bandwidth. It is outstanding that *half of all household Internet access in Estonia is by broadband.* In the light of current EU policies regarding broadband take-up, where broadband is regarded as the enabler for the future development and delivery of services and applications in e-Health, e-Business, e-Government and e-Business these penetration levels in CEE 10 countries are important and encouraging. It could be that the traditional two year path of broadband migration by Internet users will not be followed in all CEE 10 countries and that for some new users, Internet access with a broadband connection takes place immediately.



### 0.A.4 Percentage of households with a computer and with access to the Internet broken down by device.

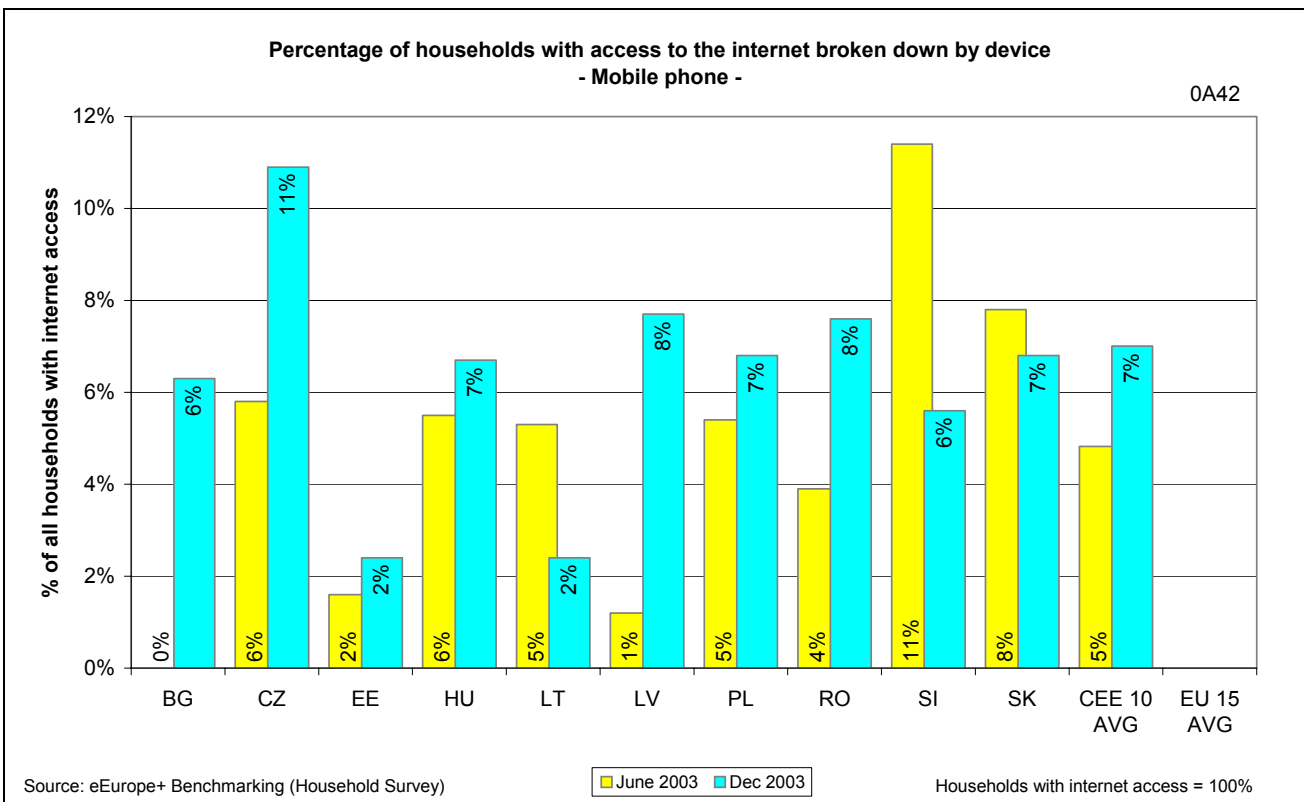
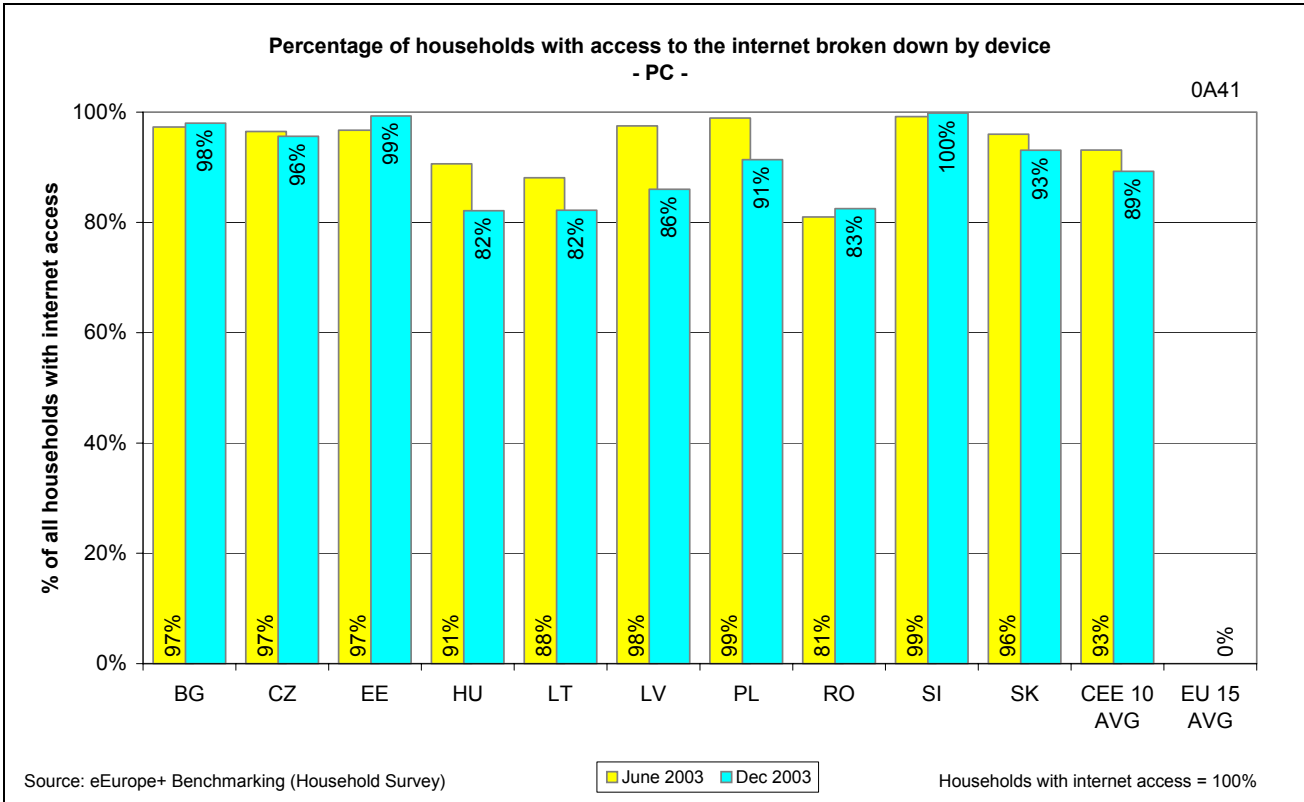
The following chart shows the percentage of households that possess a PC or a laptop and the percentage of households with an Internet connection.



Devices included in the indicator are: Personal Computer, Personal Digital Assistant, mobile phone, set top box to television.

**PC/lap-top Access:** this is the most frequently used means of accessing the Internet. *Of those households accessing the Internet, almost 90% of all household Internet users are accessing it in this way, with four countries, (Bulgaria, the Czech Republic, Estonia, and Slovenia) with at or nearly 100% PC Internet access.* Eurostat, (2003), reports that out of ten EU 15 countries, eight of them have more than 90% households accessing the Internet in this way.

**Mobile access:** with widely varying data, four countries show an increase in the use of a mobile as a means of accessing the Internet. Bulgaria, Latvia, and Romania (with 3G mobile penetration) could reasonably be expected to be accessing in this way, if fixed lines are not suitable. The Czech Republic, with the highest mobile penetration levels among the CEE 10 could have more advanced Internet users who are extending their Internet access channels. This data may reflect opportunities offered by operators.

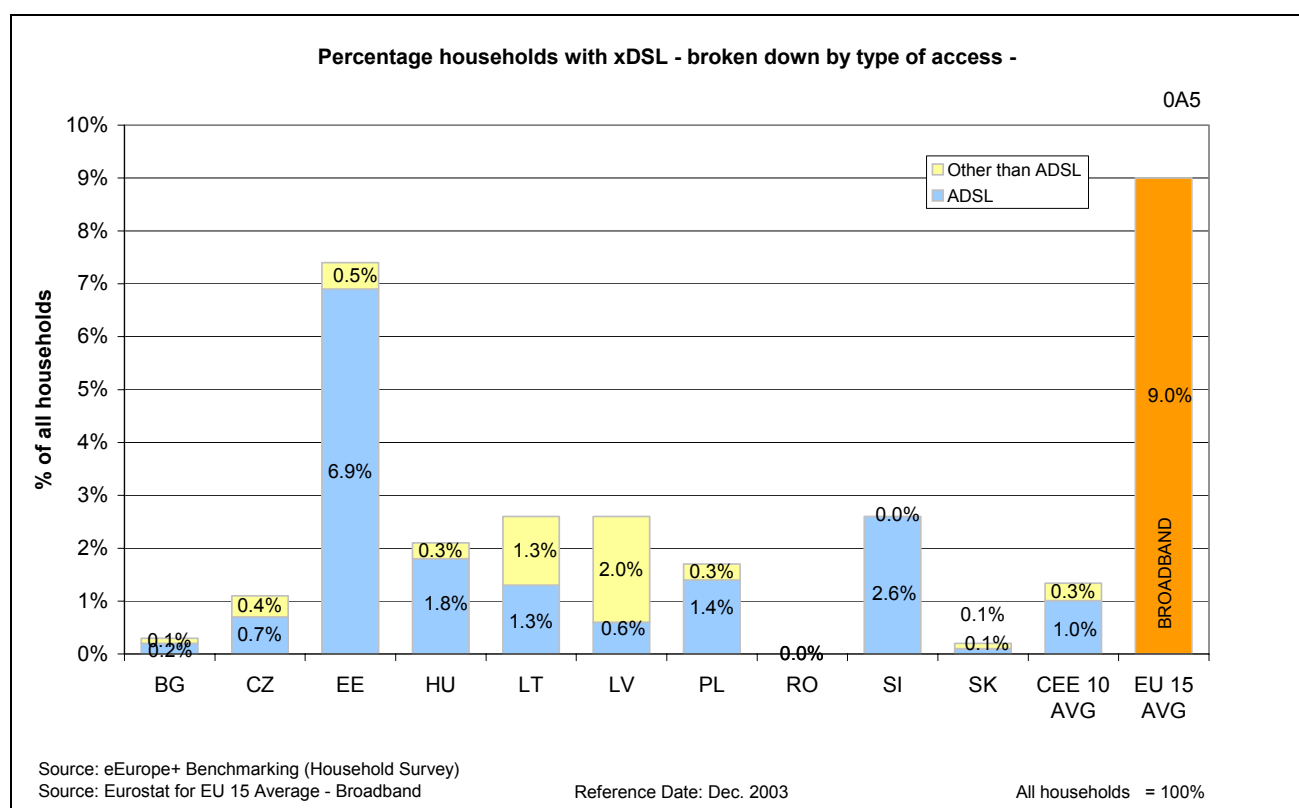


Other access devices: Estonia reports 3% household Internet users accessing the Internet by TV. PDA, Games console and other means of access have negligible usage. Finland (Eurostat 2003) reports 8% of their population accessing the Internet by other means, indicating that the levels for CEE 10 countries are higher.

### 0.A.5 Difference between availability and take-up of broadband internet access broken down by type of access (ADSL, SDSL, UDSL, IDSL, HDSL, RADSL, VDSL, DSL-Lite).

The implementation of xDSL services in the CEE 10 is at a very early stage. When looking at the percentage of xDSL lines as a percentage of the total network capacity, only Estonia has any significant number of xDSL lines, with approximately 7% of all available lines.

In general, it is observed that there are wide discrepancies in the information provided. In the Czech Republic and Estonia, it is claimed that there are more xDSL lines in service than provided by the operators. This implies that the operators have understated the number of lines available. In Hungary, Lithuania and Poland the usage of xDSL services is very low in comparison to the availability, suggesting that they may be too expensive for many users or not considered advantageous. In the other countries the availability is either zero or almost non-existent and, consequently, so is the take-up.



As regards a breakdown of the different types of xDSL line, (ADSL, SDSL, UDSL, IDSL, HDSL, RADSL, VDSL, DSL-Lite), the main type implemented is ADSL. There are a few hundred SDSL lines in service, mainly for business users, in Estonia and Romania.

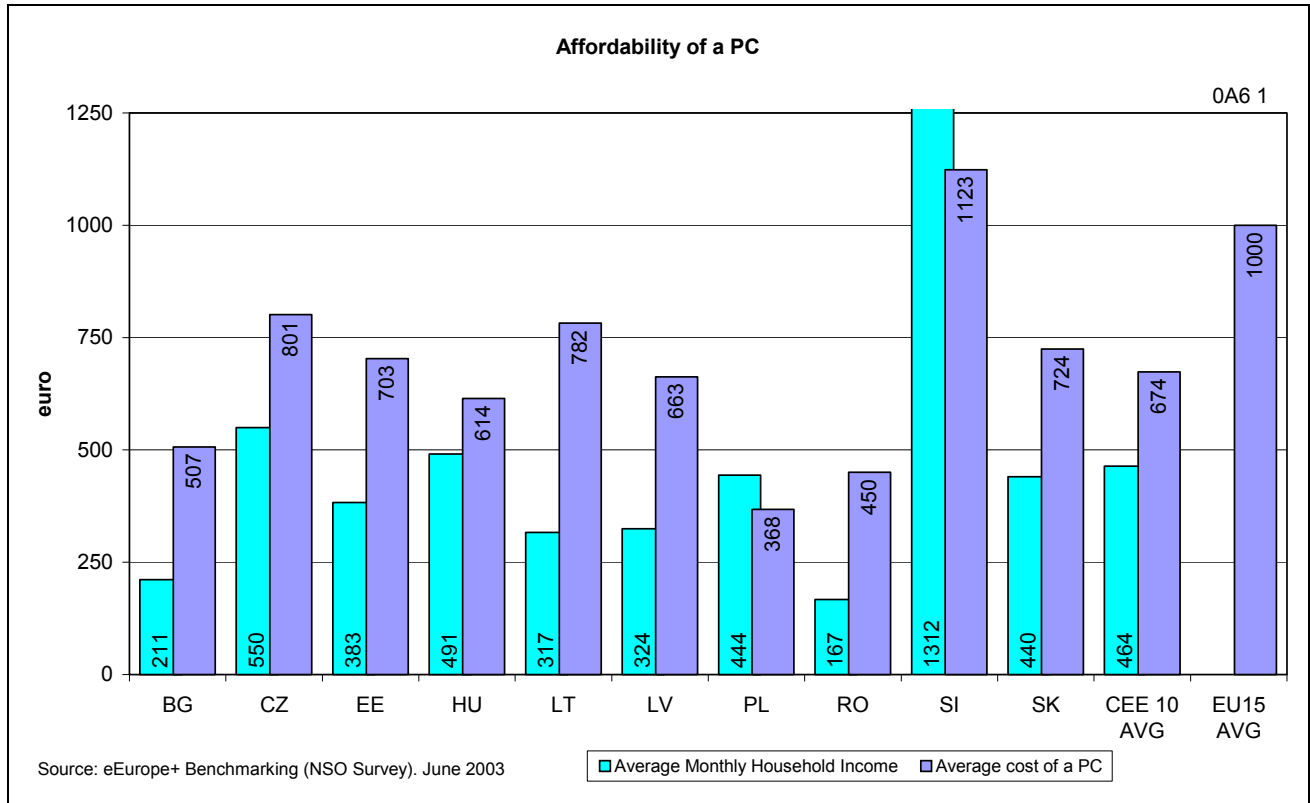
This is an area to be monitored over the next few years, but requires the full cooperation of the Telecommunication Operators and Internet Service Providers. This has not been the case in all countries during the first and second round of the eEurope+ benchmarking surveys. Data is increasingly difficult to collect due to the complexity and commercial sensitivity of the business structures of multinational telecommunications operators.

It is for this reason that specific details have not been included in this report. The reader's attention is drawn to:

[http://europa.eu.int/information\\_society/topics/ecommerce/doc/all\\_about/international\\_aspects/eu\\_enlargement/4th\\_report\\_final.pdf](http://europa.eu.int/information_society/topics/ecommerce/doc/all_about/international_aspects/eu_enlargement/4th_report_final.pdf)

**0.A.6 Affordability of PC's in participating countries.**

The comparative specification is DVD/RWCD drive, 256 Mbyte memory, 15 inch Monitor, Pentium IV or equivalent processor, internet adapter and telephone modem fitted as standard, USB connector. (average price in the EU in June 2003: approximately €1,000)



For the Czech Republic, Estonia, Hungary, Poland, Slovenia, and the Slovak Republic, the cost of a PC is more than the average monthly household income but in Bulgaria, Lithuania, Latvia, and Romania, the cost of a PC is more than twice the average monthly household income. *As using a PC is the favoured means of accessing the Internet, the high cost in many countries will be a major inhibitor.* The four countries with the most expensive PCs are amongst those with the lowest household Internet penetration levels.



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