

Information Society Statistics

Statistics in focus

INDUSTRY, TRADE AND SERVICES

THEME 4 – 6/2001

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Data for Central European Candidate Countries (CEC)

Richard Deiss

Main results

- The number of PCs and Internet hosts per 100 inhabitants in Central European Candidate countries (CEC) is still relatively low: in 1999 it was only about 1/4 of the EU average.
- However the CEC countries record a strong growth of the number of PCs (+ 19% in 1999) and the Internet hosts (+ 34% in 1999). The number of mobile phone subscriptions is also growing strongly (+ 85% in 1999).
- Differences between CEC countries are considerable: while the density of PCs in Slovenia and of Internet hosts in Estonia is close to the EU average, it stands at only about 1/10 of the EU average in Bulgaria and Romania.

Table 1: Information Society 1999/2000 (in million)

	CEC	EU-15	USA	Monde	Source
Number of PCs (Dec.1999)	7	93	141	387	ITU
- per 100 inhabitants	6	25	52	6	
Internet hosts (Oct.2000)	0.8	15.4	67.4	99.2	Netsizer
- per 100 inhabitants	0.8	4.1	24.4	1.6	
Internet users (Nov.2000)	8	88	144	360	NUA
- per 100 inhabitants	7	23	52	6	
Mobiles phones (Dec.1999)	11	147	86	481	ITU
- per 100 inhabitants	10.7	39.1	31.7	8	



Manuscript completed on: 20.12.2000
ISSN 1561-4840
Catalogue number: KS-NP-01-006-EN-I

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Introduction

The availability and use of Information and Communication Technologies (ICT) has strongly increased in Europe in the last decade.

This is also true for the candidate countries of Central and Eastern Europe (Bulgaria, Czech Republic, Hungary, Poland, Romania,

Slovakia, Slovenia, Estonia, Latvia, and Lithuania) although they are still lagging behind if compared to the EU.

This report aims at providing a statistical overview on key Information Society related parameters in CEC countries.

The report is based on data from

Eurostat (NewCronos), EITO, ISPO, ITU, OECD, and RIPE NCC (see list of sources on page 7).

The report offers information about the number of PCs, Internet hosts, Internet users, IT hardware expenditure, number of schools' web sites and the number of mobile phone subscribers in CEC countries.

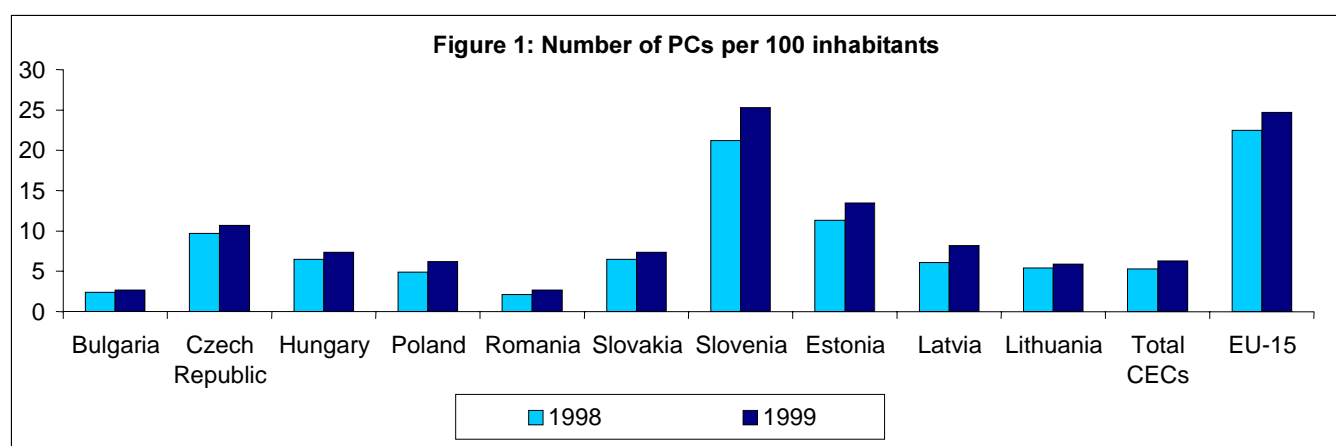
Personal computers

Table 2: Personal computers 1998-1999

	Total number of PCs (1 000) ¹		Growth (%) 1999/1998	Number of PCs per 100 inhabitants		Share of all PCs used ² (%) 1999	
	1998	1999		1998	1999	households	businesses
Bulgaria	200	220	10.0	2.4	2.7	7	93
Czech Republic	1 000	1 100	10.0	9.7	10.7	24	76
Hungary	660	750	13.6	6.5	7.4	30	70
Poland	1 900	2 400	26.3	4.9	6.2	23	77
Romania	480	600	25.0	2.1	2.7	32	68
Slovakia	350	400	14.3	6.5	7.4	25	75
Slovenia	420	500	19.0	21.2	25.3	54	46
Estonia	165	195	18.2	11.3	13.5	61	39
Latvia	150	200	33.3	6.1	8.2	14	86
Lithuania	200	220	10.0	5.4	5.9	32	68
CEC Total	5 525	6 585	19.2	5.3	6.3	30	70
EU-15	84 725	93 200	10.4	22.6	24.8	:	:

Sources: (1) ITU - Telecommunication Indicators

(2) ISPO - European Survey of Information Society Projects and Actions



The number of PCs per 100 inhabitants in CEC countries is low compared with the level in EU-15 (about 6 versus 25). However, the number of PCs in CEC countries

increased in 1999 twice as fast as in the EU. Bulgaria and Romania have the lowest PC density of all CEC countries (only 1/9 of the EU level). Slovenia on the other hand

records a density close to the EU average. The number of PCs per 100 inhabitants closely correlates with GDP per capita.

Internet hosts

Table 3: Number of Internet hosts 1998-2000 and Internet access providers

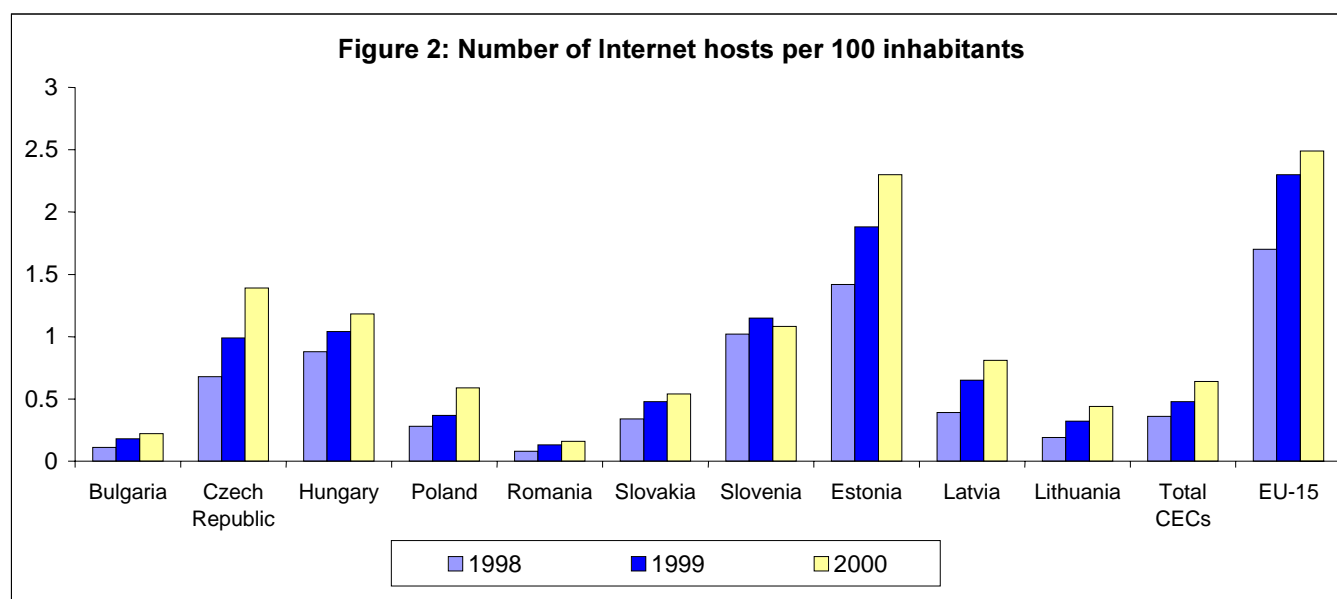
	Access providers ¹	Internet hosts ² (1 000)			Growth (%)	Internet hosts per 100 inhabitants (July)		
	1999	July 1998	July 1999	July 2000	2000/1999	1998	1999	2000
Bulgaria	170	9.1	15.2	18.4	21.1	0.1	0.2	0.2
Czech Republic	13	70.1	102.2	143.7	40.6	0.7	1.0	1.4
Hungary	:	89.3	105.5	119.1	12.9	0.9	1.1	1.2
Poland	250	109.6	142.1	228.7	60.9	0.3	0.4	0.6
Romania	150	18.5	28.5	36.3	27.4	0.1	0.1	0.2
Slovakia	:	18.3	26.1	29.1	11.5	0.3	0.5	0.5
Slovenia	33	20.3	22.8	21.5	-5.7	1.0	1.2	1.1
Estonia	9	20.6	27.2	33.3	22.4	1.4	1.9	2.3
Latvia	22	9.6	16.0	19.7	23.1	0.4	0.7	0.8
Lithuania	29	7.4	11.9	16.3	37.0	0.2	0.3	0.4
CEC Total	800 *	372.8	497.5	666.1	33.9	0.4	0.5	0.6
EU-15	2 820 **	5 496.8	6 778.4	9 322.3	37.5	1.7	2.3	2.5

Sources: (1) ISPO - European Survey of Information Society Projects and Actions

(2) RIPE NCC - Internet Statistics (country-code top level domains considered only)

* estimate

** data for the end of 1998; without Germany



The number of Internet hosts (only number of country code top level domains considered in the table) increased in CEC countries between 1998 and 2000 by 78%. This compares to a growth of 70% in the EU in the same period. The

liberalisation of communication services contributed to the boom of the Internet. The difference between EU countries and CEC countries regarding the density of Internet hosts is, however, still large. There are also strong

differences between CEC countries: Romania and Bulgaria show a very low density while Estonia has an Internet host density that is close to the EU average.

Internet users

Table 4: Number of Internet users 1998-1999

	Number of Internet users ¹ (1 000)	Number of Internet users ² (1 000) 1999		Number of Internet users per 100 inhabitants		
	1998	Total	of which: households	1998	1999	of which: households
Bulgaria	150	206	41	1.8	2.5	0.5 *
Czech Republic	400	720	206	3.9	2.5	2.0
Hungary	300	606	101	3.0	6.0	1.0
Poland	1 580	2 320	387	4.1	6.0	1.0
Romania	150	630	675	0.7	2.8	0.3
Slovakia	500	378	108	9.3	7.0	2.0 *
Slovenia	200	257	119	10.1	13.0	6.0
Estonia	150	188	116	10.3	13.0	8.0
Latvia	100	107	10	4.1	4.4	0.4
Lithuania	80	112	74	2.2	3.0	2.0
CEC Total	3 610	5 524	1 837	3.4	5.3	3.7
EU-15	34 506	55 942 ²	:	9.2	15.5	:

Sources: (1) ITU - Yearbook of Statistics

(2) ISPO - European Survey of Information Society Projects and Actions

* estimate

The number of Internet users in CEC countries increased by over 50 % in 1999. The number of Internet users per 100 inhabitants is, however, still only 1/3 of the EU average. This situation is mainly

explained by income levels and the relatively high costs of Internet access, limiting the number of users in private households. According to OECD the average Internet access price for 20 hours per month (peak

rate) in EU countries in 1999 was about 50 USD while for the three OECD member countries (Czech Republic, Hungary and Poland) the average was 150 USD.

In CEC countries the Internet is increasingly used in the education sector. This is also reflected in the number of schools (primary, secondary, high schools and universities are included in the figures in the table) which have an own web site.

The number of schools with web sites is relatively high in Slovenia (more than 50% of schools have their own web site). Bulgaria and Romania record the lowest levels.

Table 5: Number of school web sites

	Number of school web sites ¹ 1999	Percentage of schools having a web site 1999
Bulgaria	127	3
Czech Republic	1 018	19
Hungary	903	19
Poland	4 230	15
Romania	224	1
Slovakia	444	15 *
Slovenia	358	57
Estonia	197	26
Latvia	120	11
Lithuania	140	10
Total CECs	7 761	12

Source: (1) ISPO - European Survey of Information Society Projects and Actions

* estimate

Information Technology Expenditure

Table 6: IT expenditure 1998

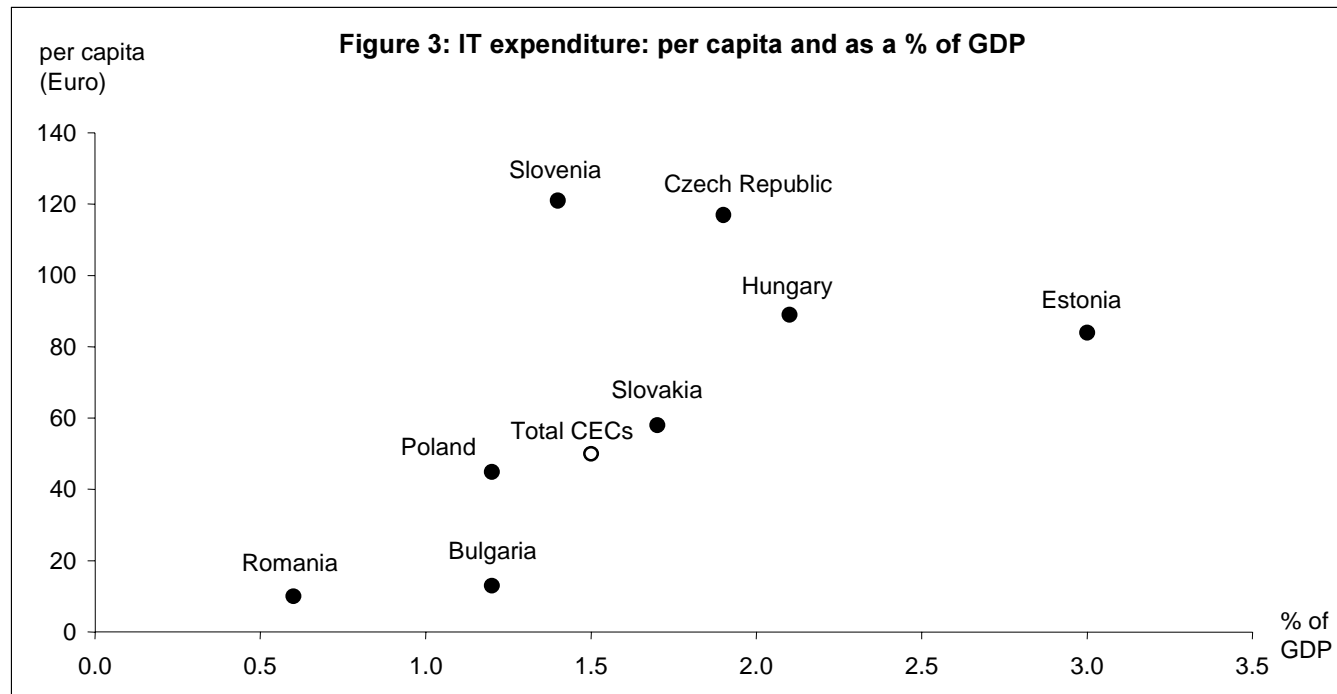
	IT expenditure ¹ (Mio Euro) 1998	Of which IT hardware ¹ (Mio Euro) 1998	GDP ² (Mio Euro)	IT expenditure 1998	
				as a % of GDP	per capita (Euro)
Bulgaria	132	70	11,000	1.2	16
Czech Republic	1,200	619	49,500	1.9	117
Hungary	896	417	41,900	2.1	89
Poland	1,724	1,144	140,200	1.2	45
Romania	221	130	36,900	0.6	10
Slovakia	315	167	18,100	1.7	58
Slovenia	239	156	17,500	1.4	121
Estonia	121	91	4,100	3.0	84
Latvia	:	:	5,400	:	:
Lithuania	:	:	9,600	:	:
CEC Total	4,848 ³	2,795 ⁴	319,200 ³	1.5 ³	49 ³

Sources: (1) EITO - European Information Technology Observatory 2000

(2) Eurostat – NewCronos database

(3) without Latvia and Lithuania; 4) estimate; without Latvia and Lithuania

The IT hardware market in CEC countries had a size of about 3 billion Euro in 1998 (compared to over 200 billion Euro for EU 15). Poland represents 40% of this market. IT expenditure per capita in the Czech Republic and Slovenia is more than twice the CEC average.



There are strong differences between countries in respect of IT expenditure in % of GDP. IT expenditure as a % of GDP in general increases with growing income levels. Countries like Estonia, the Czech Republic, Hungary and Slovenia have a relatively high level, while expenditure as a % of GDP remains low in Bulgaria and Romania.

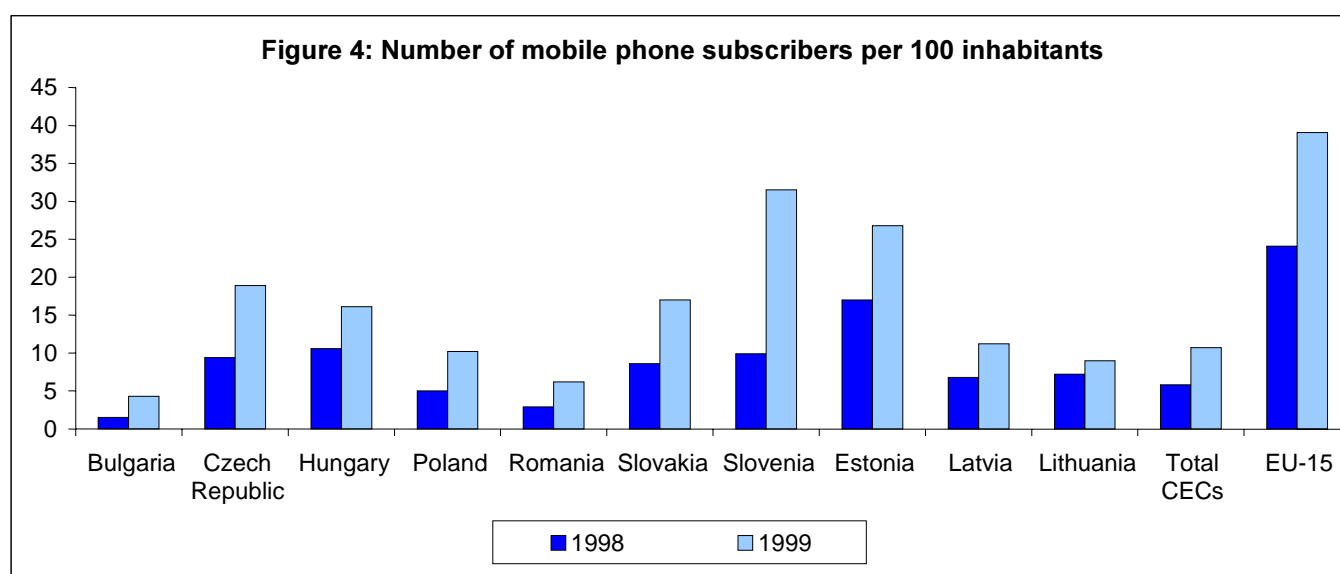
Mobile phone subscribers

Table 7: Mobile phone subscribers 1998-1999

	Number of mobile phones subscribers ¹ at the end of the year (1 000)		Growth (%) 1999/1998	Number of mobile phone subscribers per 100 inhabitants	
	1998	1999		1998	1999
Bulgaria	127	350	175.6	1.5	4.3
Czech Republic	966	1 945	101.4	9.4	18.9
Hungary	1 070	1 628	52.1	10.6	16.1
Poland	1 928	3 956	105.2	5.0	10.2
Romania	643	1 400	117.7	2.9	6.2
Slovakia	465	918	97.4	8.6	17.0
Slovenia ²	196	626	220.0	9.9	31.5
Estonia	247	387	56.7	17.0	26.8
Latvia	168	274	63.8	6.8	11.2
Lithuania	268	332	24.1	7.2	9.0
CEC Total	6 042	11 190	85.2	5.8	10.7
EU-15	90 145	146 579	62.6	24.1	39.1

Sources: (1) ITU

(2) Eurostat (data for Slovenia)



The number of mobile phone subscribers is expanding very rapidly in CEC countries.

The number of subscriptions in Bulgaria, the Czech Republic,

Poland and Romania more than doubled in 1999.

The expenditure on communication in CEC countries represents on average about 2% of total

household consumption. Hungary, Latvia and Estonia recorded the highest level. In Bulgaria, the Czech Republic and Romania the share of communication expenditure is below the average of CEC countries.

➤ METHODOLOGICAL NOTES

Personal computers (PC): includes portables, desktops and personal workstations. Board-level products are excluded. Data on the number of PCs by country from ITU represent estimates.

Internet service providers (ISP) an organisation that lets users dial into its computers to connect to its Internet link (usually for a fee). ISPs in general provide an Internet connection and an electronic mail address.

Internet hosts are the computers that are directly connected to the Internet and have their own IP address and full two-way access to other nodes on the network. The host data in this report refer to country code Top level domains only (examples: .cz or

.hu), generic top level domains (examples: .com .org) are not included.

Internet user: person using the Internet. The number is several times higher than the number of Internet hosts. Data relate to persons above a certain age limit. Data come from household surveys or represent projections and interpolations based on surveys (example: ITU data).

The Internet basket includes one monthly line rental for a residential user and 20 hours of usage. The price is the equivalent of 20 calls of one-hour duration at peak rates (at 11.00 hours during weekend).

Information Technology (IT) market refers to the combined industries of hardware for

office machines, data processing equipment, data communications equipment and services. The EITO market value is expressed in Million ECU at constant 1998 exchange rates.

Mobile phone subscribers refers to users of portable telephones subscribing to an automatic public mobile telephone service which provides access to the Public Switched Telephone Network (PSTN) using cellular technology.

Web site is a location on the World Wide Web identified by a web address. A Web site consists of one or more pages of information and data (encoded with a hypertext markup language to make them readable by a web browser).

Abbreviations/ sources:

: Data not available

CEC Central European Candidate Countries (CEC)

EU-15 European Union of 15 Member States

GDP Gross Domestic Product

OECD Organisation for Economic Development and Cooperation

Address: 2, rue André-Pascal, 75775 CEDX 16; <http://www.oecd.org>

Statistical publications: Information Technology Outlook 2000

ICTs, E-commerce and the Information Economy 2000 – highlights

Of the CEC countries Poland, Hungary, the Czech Republic and Slovakia are currently OECD Members

EITO European Information Technology Observatory

EU supported private organisation producing an annual analysis of the ICT market.

Address: Lyonerstr 18, D-60528 Frankfurt/Main, <http://www.eito.com>

Publication: EITO 2000 (includes market analysis and statistical data).

ISPO Information Society Promotion Office, the Information Society website of the European Commission provides numerous informations on EU policy but also links to EU external websites providing figures on the Information Society (Eurobarometer figures, Public Opinion Analysis, ESIS report, etc), <http://europa.eu.int/ISPO/esis>

ITU International Telecommunication Union,

Address: Palace des Nations, CH-1211 Geneva Switzerland; <http://www.itu.int/>

ITU is a UN-Organisation. Statistical publication: ITU Yearbook

NUA Address: Merrion House, Merrion Road, Dublin 4, Ireland; <http://www.nua.ie>

NUA is a private web publishing company. On its web site, NUA provides a collection of results of Internet surveys and on the worldwide number of Internet users, <http://www.nua.ie/surveys/how-many-online/>.

RIPE NCC Réseaux IP Européens, Network Coordination Centre

<ftp://ftp.ripe.net/ripe/hostcount/History/>

Issues monthly hostcount statistics

NetSizer Interactive tool providing number of Internet hosts by month and by domain. The associated consulting company Telecordia Technologies provides quantitative and qualitative analyses related to the "Evolution of the Internet", <http://www.netsizer.com>.

Further information:

➤ Databases

New Cronos, Theme 1, Domain CEC (Candidate Countries/Central European Countries)

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 This Statistic in Focus was produced in co-operation with Ms Virginia Balea from the Statistical Office of Romania and C. Quefelec.
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