POCKETBOOK

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information society statistics

Data 1996-2001

4

EUROPEAN COMMISSION

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THEME 4
Industry, trade and services

A great deal of additional information on the European Union is available on the Internet.
It can be accessed through the Europa server (http://europa.eu.int).

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Preface

This is the second edition of the statistical pocketbook on the Information Society. It aims to provide a statistical overview of key data on the Information Society in the European Union and, for comparison, also the USA and Japan. It also contains data on other European countries, in particular the EFTA and Candidate countries.

The publication starts with general and economic overviews, followed by a more in-depth presentation of the extent to which Information and Communications Technologies (ICT) have impacted the EU business sector and individuals.

Statistical information from a variety of sources (official data from statistical offices, data from research projects, from Commission surveys, from international organisations and from private sources) have been brought together to provide an overview of key aspects of the Information Society. Where more than one source provides information on a particular subject, the one that provides the most comparable data between Member States has been chosen. Issues of comparability which remain are indicated in the footnotes, particularly concerning coverage. Eurostat aims to enhance the role of Information Society statistics within the European Statistical System and work is underway to collect existing statistical data on the Information Society from the Member States, to harmonise data and to build up new official data sets where there are important gaps. Annual surveys on ICT usage and e-commerce in enterprises co-ordinated by Eurostat started in 2001, whilst annual household surveys on ICT usage followed in 2002. Future issues of the pocketbook are therefore expected to rely to a greater extent on data collected in a harmonised form as a part of the European Statistical System.

Yves Franchet
Director-General

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GENERAL DATA

Table 1.1: Demographic data

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Population, 1st of January (thousands) (1)																		
1991	**365,382**	9,987	5,147	79,753	10,200	38,875	56,841	3,521	56,744	384	15,010	7,769	9,878	4,999	8,591	57,685	250,660	124,043
1996	**372,355**	10,143	5,251	81,818	10,465	39,249	57,936	3,620	57,333	413	15,494	8,055	9,921	5,117	8,838	58,704	264,162	125,504
2000	**376,462**	10,239	5,330	82,164	10,554	39,733	58,749	3,777	57,680	436	15,864	8,103	10,178	5,171	8,861	59,623	275,563	126,550
2001	**377,888**	10,263	5,349	82,193	10,565	40,122	59,037	3,826	57,844	441	15,987	8,121	10,243	5,181	8,883	59,832	278,059	126,772
2020 (2)	**385,984**	10,338	5,740	80,152	10,806	39,331	61,280	3,947	58,042	488	17,492	8,296	10,526	5,222	9,222	61,082	324,927	123,380
Population age structure, 2001 (% of total) (3)																		
under 15	**16.9**	17.6	18.6	15.5	15.2	14.7	18.8	21.5	14.4	19.0	18.6	16.6	16.6	18.1	18.4	19.0	21.4	14.6
15-64	**66.8**	65.5	66.6	67.8	67.5	68.4	65.1	67.3	67.4	66.7	67.7	67.8	67.9	66.9	64.4	65.4	66.2	68.0
65 and over	**16.2**	16.9	14.8	16.6	17.3	16.9	16.1	11.2	18.2	14.3	13.6	15.5	15.5	15.0	17.2	15.6	12.4	17.4
Average household size (number of persons per household)																		
2000 (4)	**2.4**	2.4	2.2	2.2	2.7	3.0	2.4	3.0	2.6	2.6	2.3	2.4	2.9	2.2	2.0	2.3	2.6	2.7

(1) 2000 and 2001 including estimates.
(2) Eurostat baseline scenario for EU-15, EL and P; national statistical authorities forecasts for other Member States; US Census Bureau projected population middle series for US; US Census Bureau, International Data Base for JP.
(3) EU-15, EL, US and JP, 2000; Japan, shares calculated excluding persons with "age unknown".
(4) EU-15, Eurostat estimate; IRL, 1997.
Source: For EU and Member States: Eurostat (New Cronos Theme3/demo/dgen and dpro) for population; Eurostat (New Cronos Theme3/demo/dpop) for population structure; Eurostat, Labour force survey for average household size (except DK, FIN and S: data from national sources).
For US and JP: Eurostat (New Cronos Theme3/demo/dgen) for population from 1991 to 2001; US Census Bureau for population forecasts; US Census Bureau for US population structure and household size; Japanese Statistics Bureau and Statistics Center for Japanese population structure and household size.

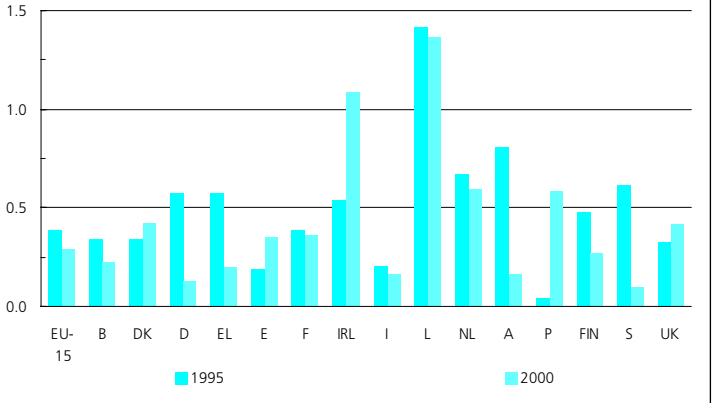
Demography

The population of the EU stood at 378 million inhabitants on 1st January 2001 compared to around 278 million in the USA and 127 million in Japan.

As a result of declining fertility rates, there has been a gradual slowing down of the European population growth over the last 35 years. The average household size is furthermore tending to decrease.

Population and household figures are often used as denominators for calculating penetration rates for information and communication technologies. As a result of the increase in the number of households, household penetration rates are growing less rapidly than the absolute number of ICT equipment in use. There were around 154 million households in the EU in 2000.

Figure 1.1: 5-yearly annual average growth rates of average population (%)



Source: Eurostat (New Cronos Theme3/demo/dgen/gind).

Table 1.2: Gross domestic product

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
GDP at current market prices (billion EUR)																		
2001 (1)	**8,817**	257	181	2,063	130	650	1,464	115	1,217	21	425	211	123	135	234	1,591	11,398	4,633
Index of GDP at current market prices per head in PPS (EU-15 = 100)																		
1998	**100**	111	118	106	67	79	99	106	104	178	115	110	73	101	102	103	147	117
1999	**100**	106	119	106	68	82	100	112	103	185	114	111	73	101	101	101	142	108
2000	**100**	107	121	105	69	82	100	118	102	195	115	111	73	103	102	102	143	107
2001 (1)	**100**	106	121	104	68	84	100	122	103	192	115	110	74	102	101	102	142	105
Annual average growth rate of GDP at market prices at 1995 PPS (%)																		
1998	**2.9**	2.2	2.5	2.0	3.4	4.3	3.4	8.6	1.8	5.8	4.3	3.5	4.5	5.3	3.6	3.0	4.3	-1.1
1999	**2.7**	3.0	2.3	1.8	3.6	4.1	3.2	10.8	1.6	6.0	3.7	2.8	3.5	4.1	4.5	2.1	4.1	0.7
2000	**3.5**	4.0	3.0	3.0	4.1	4.1	3.8	11.5	2.9	7.5	3.5	3.0	3.5	5.6	3.6	3.0	4.2	2.4
2001 (1)	**1.5**	1.0	1.0	0.6	4.1	2.8	1.8	6.8	1.8	3.5	1.1	1.0	1.7	0.7	1.2	2.2	1.2	-0.5
Annual average growth of labour productivity (%) (2)																		
1998	**1.2**	1.0	0.8	0.9	-0.7	0.5	2.4	0.0	0.8	1.3	1.4	2.7	1.8	3.2	2.3	1.6	2.0	-0.4
1999	**1.1**	1.6	0.8	0.6	4.4	0.5	1.6	4.6	0.8	0.9	1.2	1.8	1.6	1.3	2.3	1.1	2.2	1.5
2000	**1.6**	2.4	2.2	1.3	4.4	1.0	1.5	6.5	1.1	1.8	1.1	1.6	1.8	3.6	1.5	2.0	2.1	2.6
2001 (1)	**0.4**	-0.2	0.8	0.4	4.2	0.3	-0.4	3.7	0.2	-2.0	-0.9	0.8	0.0	-0.5	-0.6	1.4	1.3	-0.1

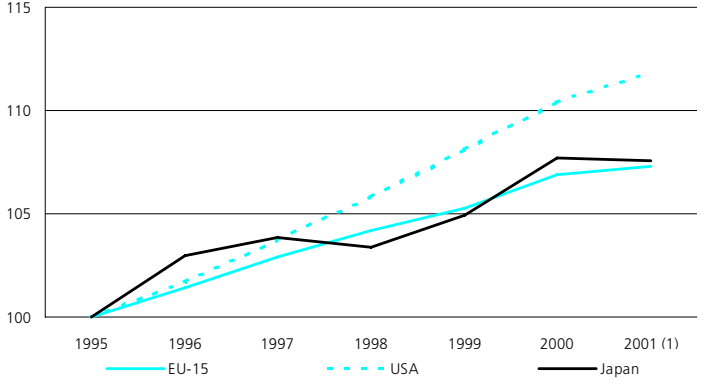
(1) Including estimates/forecasts.
(2) GDP at market prices at 1995 prices and exchange rates / total employment.
Source: Eurostat (New Cronos Theme2/aggs/aggs_gdp) for GDP at current market prices;
Eurostat and DG ECFIN data in EC economic data pocket book, 7-8 2002, for all other data.

Gross domestic product

In the second half of the 1990s, growth of productivity in the USA accelerated and was higher than the EU average. At the same time economic growth rates were higher than the EU average and unemployment rates lower. This strong development in the USA was attributed partly to the impact of ICT. However, sluggish growth in the USA in 2001 sparked doubts about the solidity of this economic trend.

At the end of the nineties a number of EU Member States, notably Belgium, Denmark, Greece, and Ireland, showed a similar economic situation to that which had been observed since the mid-nineties in the USA, namely an improvement in labour productivity and declining unemployment rates in an increasingly expanding economy. However, as can be seen in figure 1.2 labour productivity growth slowed in 2001 from the generally high values recorded in 2000.

Figure 1.2: Index of labour productivity (1995 = 100)



(1) Including estimates/forecasts.
Source: Eurostat and DG ECFIN data in EC economic data pocketbook, 7-8 2002.

Table 1.3: Employment

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Total employment (thousands)																		
1996	**155,638**	3,780	2,628	37,210	3,805	13,748	22,941	1,331	21,736	168	7,297	3,904	4,555	2,069	4,055	26,412	138,018	67,013
1997	**157,121**	3,809	2,659	37,145	3,784	14,147	23,058	1,405	21,793	170	7,533	3,924	4,626	2,137	4,015	26,916	141,184	67,706
1998	**159,622**	3,855	2,704	37,549	3,940	14,653	23,356	1,506	21,983	174	7,733	3,950	4,751	2,182	4,060	27,227	144,309	67,260
1999	**162,231**	3,909	2,744	38,015	3,910	15,162	23,774	1,600	22,235	178	7,915	3,999	4,837	2,241	4,152	27,560	146,993	66,690
2000	**165,036**	3,970	2,765	38,636	3,898	15,624	24,190	1,679	22,616	183	8,102	4,019	4,920	2,283	4,240	27,913	149,805	66,525
Annual average growth rate of employment (%)																		
2000	**1.7**	1.6	0.8	1.6	-0.3	3.0	1.7	4.9	1.7	2.8	2.4	0.5	1.7	1.9	2.1	1.3	1.9	-0.2
1996-2000	**1.3**	1.1	1.2	0.7	0.4	2.8	1.1	5.5	1.0	1.8	2.6	0.5	1.9	2.3	0.8	1.4	2.0	-0.1
Harmonised unemployment rate, total (%) (1)																		
1997	**10.1**	9.2	5.2	9.9	9.8	17.0	11.8	9.9	11.6	2.7	4.9	4.4	6.8	12.7	9.9	6.9	4.9	3.4
1998	**9.5**	9.3	4.9	9.3	10.9	15.2	11.4	7.5	11.7	2.7	3.8	4.5	5.1	11.4	8.3	6.2	4.5	4.1
1999	**8.7**	8.6	4.8	8.6	11.9	12.8	10.7	5.6	11.3	2.4	3.2	3.9	4.5	10.2	7.2	5.8	4.2	4.7
2000	**7.9**	6.9	4.4	7.9	11.1	11.3	9.3	4.2	10.4	2.3	2.8	3.7	4.1	9.8	5.9	5.4	4.0	4.7
2001	**7.4**	6.6	4.3	7.9	10.5	10.6	8.6	3.8	9.4	2.0	2.4	3.6	4.1	9.1	5.1	5.0	4.8	5.0

(1) According to ILO definitions: persons at least 15 years of age.
Source: Eurostat (New Cronos Theme2/aux_ind/aux_pem) for employment; Eurostat (New Cronos Theme3/unemploy/har_une/ura1f8t1) for unemployment.

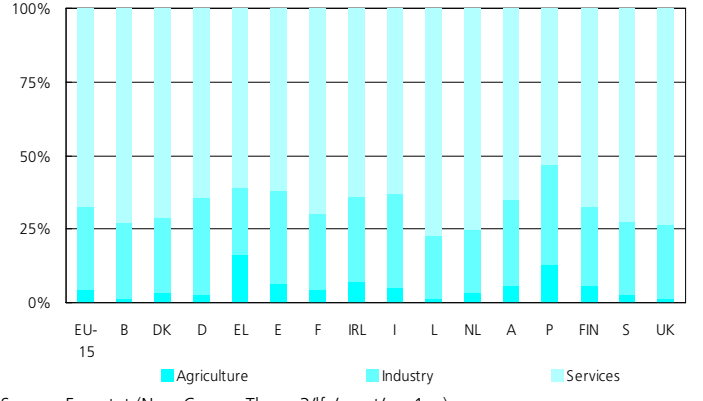
Employment

In 2000, 165 million people were in employment in the EU, 4% of whom were employed in agriculture, 28% in industry and 67% in services. This pattern is rather similar in all Member States, with the exception of Greece and Portugal, where a larger share of people are working in agriculture and a smaller share in services.

Between 1995 and 2001 nearly all Member States recorded a significant increase in the number of persons employed in the service sector and a fall in the agricultural sector.

12.9 million people were unemployed in the EU in 2001. Since 1996 the unemployment rate has fallen from 11.0% to 7.6% in 2001. This downward trend can be observed, to varying degrees, in most Member States with the fall in Greece starting later.

Figure 1.3: Breakdown of employment by sectors, 2001



Source: Eurostat (New Cronos Theme3/lfs/empt/e_n1_a).

Table 1.4: Venture capital

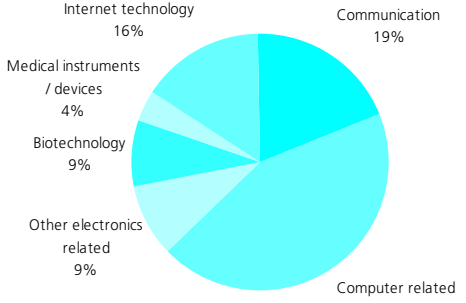
		EU-15 (1)	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
								Investment and funds raised (million EUR)									
1998	Total funds raised	**20,343**	415	46	1,875	70	692	3,811	164	936	:	1,162	123	47	365	999	8,959
	Of which venture capital	**4,914**	352	46	:	70	439	1,911	82	0	:	674	111	36	90	340	763
	Total investment	**14,461**	259	40	1,948	20	363	1,777	64	933	:	1,059	50	50	189	203	7,105
1999	Total funds raised	**25,401**	772	169	3,812	81	630	4,278	316	1,755	:	1,057	183	71	628	990	9,870
	Of which venture capital	**12,092**	587	107	2,220	62	440	1,604	257	1	:	809	100	45	369	799	2,764
	Total investment	**25,116**	673	116	3,159	71	723	2,817	105	1,779	:	1,710	89	119	249	1,277	11,501
								Technology investment (million EUR)									
2000	Private equity - total technology investment (2)	**10,998**	312	144	2,269	70	334	2,390	183	834	:	642	65	51	155	575	2,974
	Of which venture capital	**8,730**	276	110	1,806	8	297	2,256	178	707	:	574	65	51	135	317	1,950

(1) Excluding Luxembourg.
(2) Technology sector includes i) communications, ii) Internet technology, iii) computer related activities, iv) biotechnology, v) medical instruments and devices, vi) other electronics related activities. Private equity includes venture capital, replacement capital and buy-outs.
Source: EVCA Yearbook 2000 for investment and funds raised; PricewaterhouseCooper - Technology investment report 2000 for technology investment.

Venture capital

In 1999 the highest level ever of funds raised and investment made was recorded in the EU, both at over 25 billion EUR. Investments in venture capital exceeded 12 billion EUR in 1999. The largest increases compared to 1998 were in Finland, the United Kingdom and Ireland. Private equity investment in technology industries in 2000 reached 8.7 billion EUR, 2.6 billion EUR more than in 1999.

Figure 1.4: European private equity technology investment by sector, 2000 (1)



(1) Coverage is EU-15 (excluding L), IS, NO, CH, CZ, PL, SI.
Source: PricewaterhouseCooper - Technology investment report 2000.

Table 1.5: Computer professionals employed in the EU (1)

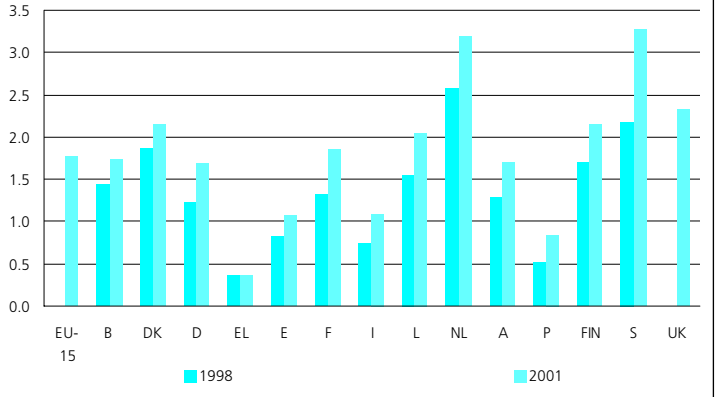
	EU-15	B	DK	D	EL	E	F	IRL (2)	I	L	NL	A	P	FIN	S	UK
Number of employed computer professionals and assistant computer professionals (thousands)																
1995	:	41	33	350	8	64	289	:	141	2	135	32	:	:	:	:
1998	:	56	50	434	15	108	296	:	152	3	191	47	24	37	86	:
1999	:	64	54	469	11	127	354	:	183	3	211	51	31	49	100	:
2000	:	60	63	552	15	142	374	21	193	3	249	56	32	46	135	:
2001 (3)	**2,790**	70	58	615	14	159	436	23	232	4	256	63	42	52	135	654
Computer professionals and assistant computer professionals as a share of total employment (%)																
1995	:	1.1	1.3	1.0	0.2	0.5	1.3	:	0.7	0.9	2.0	0.9	0.8	:	:	:
1998	:	1.4	1.9	1.2	0.4	0.8	1.3	:	0.7	1.5	2.6	1.3	0.5	1.7	2.2	:
1999	:	1.6	2.0	1.3	0.3	0.9	1.6	:	0.9	1.8	2.8	1.4	0.6	2.1	2.5	:
2000	:	1.5	2.3	1.7	0.4	1.0	1.6	1.2	0.9	1.5	3.2	1.5	0.6	2.0	3.3	:
2001 (3)	**1.8**	1.7	2.2	1.7	0.4	1.1	1.8	1.3	1.1	2.0	3.2	1.7	0.8	2.2	3.3	2.3

(1) Data are for the second quarter of the reference year except for Austria which uses the first quarter.
(2) Excluding assistant computer professionals.
(3) EU-15 excluding IRL.
Source: Eurostat, Labour force survey.

Computer professionals

ICT skills are important for competitiveness and the growing importance of the ICT in society has increased demand for personnel with these skills. In 2001 approximately 2.8 million people were employed as computer professionals or assistants in the EU, equivalent to 1.8% of total employment. In absolute terms, Germany and the United Kingdom had the largest number of computer professionals and assistants and each accounted for between one-fifth and one-quarter of the EU total. In relative terms the concentration was highest in Sweden and the Netherlands where these categories of workers accounted for over 3.0% of total employment.

Figure 1.5: Computer professionals employed in the EU as a share of total employment (%) (1)



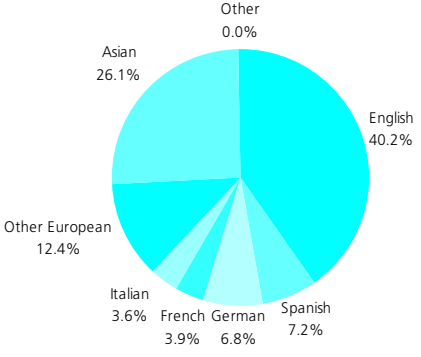
(1) EU-15 excluding IRL; EU-15 and UK not available for 1998.
Source: Eurostat, Labour force survey.

Internet languages

World-wide, English is by far the language with the largest on-line presence. According to estimates by Global Reach, approximately two-fifths of the world's on-line population are English speaking. The remaining three-fifths is split between other European languages (34% of the total) and Asian languages (26%). Among the other European languages, the largest share of the world's on-line population is accounted for by Spanish which is spoken by a world-wide on-line population estimated at over 40 million. The next largest of the European languages is German, concentrated mainly in Germany, Switzerland and Austria.

The Asian language on-line population is dominated by three language groups: Chinese, Japanese (both between 9% and 10% of the world total) and Korean (4%). The next most significant, but with less than 5 million speakers on-line are Arabic and Malay (both included within the category Asian).

Figure 1.6: World's on-line population by language, March 2002



Source: Global Reach (www.global-reach.biz/globstats).

THE ICT SECTOR AND EXTERNAL TRADE IN ICT GOODS

Table 2.1: Number of ICT enterprises (units)

	EU-15 (1)	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Total number of enterprises in the ICT sector																
1996 (2)	**:**	:	:	:	:	15,997	42,925	1,454	65,637	645	11,950	6,344	3,925	4,677	16,732	74,384
1997 (3)	**:**	:	:	:	:	18,104	44,812	1,654	69,725	729	13,875	6,275	3,682	4,831	20,214	100,241
1998 (4)	**:**	:	2,463	:	:	20,250	47,390	2,313	81,145	838	15,580	7,771	3,746	5,489	22,403	120,506
1999 (5) (6)	**442,000**	8,881	7,286	57,439	:	22,930	49,521	:	90,354	920	5,740	7,859	4,104	5,525	23,974	143,064
Number of enterprises in ICT manufacturing																
1997	**:**	:	725	:	:	1,634	7,129	217	13,452	10	1,120	410	509	666	1,716	8,150
1998	**:**	:	724	:	:	1,634	6,997	222	13,602	12	1,195	477	456	729	1,756	7,924
1999 (6)	**44,000**	225	591	6,476	:	1,635	6,884	228	14,278	11	1,210	449	555	714	1,765	9,350
2000	**:**	531	706	6,405	:	1,558	6,452	230	:	:	1,295	472	552	669	1,850	9,530
Number of enterprises in ICT services																
1996 (2)	**:**	:	:	38,934	:	14,448	35,660	1,244	52,531	635	11,105	5,887	3,367	3,989	15,333	66,774
1997 (3)	**:**	:	:	42,132	:	16,470	37,683	1,437	56,273	719	12,755	5,865	3,173	4,165	18,498	92,091
1998 (4)	**:**	:	1,739	46,641	:	18,616	40,393	2,091	67,543	826	14,385	7,294	3,290	4,760	20,647	112,582
1999 (5)	**397,000**	8,656	6,695	50,963	:	21,295	42,637	:	76,076	909	4,530	7,410	3,549	4,811	22,209	133,714
Number of enterprises in telecommunication services																
1996	**:**	:	138	194	:	999	827	28	238	42	380	99	113	163	238	:
1997	**:**	:	165	279	:	1,059	1,123	53	313	42	475	133	115	175	279	4,106
1998	**:**	:	179	369	:	1,198	1,606	:	512	44	635	159	147	210	278	4,954
1999	**12,800**	315	245	551	:	1,040	2,362	:	583	46	830	186	149	224	280	5,946

(1) Estimates, excluding EL. (2) E, excluding NACE 51.64; UK, excluding NACE 64.2. (3) E, excluding NACE 51.64. (4) DK, excluding NACE 72; IRL, excluding NACE 64.2.
(5) NL, excluding NACE 72. (6) L, excluding NACE 30.
Descriptions of the NACE codes used for ICT manufacturing and ICT services for the purposes of this publication can be found on page 97.
Source: Eurostat Structural Business Statistics (New Cronos Theme4/sbs/enterpr/enter_ms).

Number of ICT enterprises

In 1999 there were around four 442 thousand ICT enterprises in the EU, nearly one-third of which were in the United Kingdom. The service sector accounted for close to nine-tenths of the total number and the majority of these are in computer and related activities.

Based on the available 1999 data (see table 2.2) around 80% of ICT manufacturing enterprises employed less than 10 people. All of the Member States with 1999 data reported that the corresponding percentage for ICT services enterprises was close to or in excess of 90%.

Table 2.2: Number of ICT enterprises by size classes in terms of the number of persons employed, 1999 (units)

	Manufacturing				Services			
	1-9	10-49	50-249	250 +	1-9	10-49	50-249	250 +
B (1)	:	:	:	:	5770	569	116	20
DK	382	128	60	21	:	:	:	:
D (2)	3,818	1,514	659	227	:	:	:	:
EL	:	:	:	:	:	:	:	:
E (3)	738	432	99	43	16,169	1,198	280	55
F	4,814	1,481	440	149	29,923	2,832	729	163
IRL (4)	46	70	76	36	936	127	28	8
I	12,014	1,847	340	77	66,364	3,250	405	79
L (5)	6	2	1	1	:	:	:	:
NL (6)	935	180	:	:	9,995	640	:	:
A	285	83	54	26	6,096	437	57	21
P (7)	258	52	19	10	:	:	:	:
FIN	518	128	41	27	3,374	267	93	25
S (8)	1,420	217	86	42	18,201	915	161	48
UK (9)	5,260	1,327	536	213	:	:	:	:

Note that, exceptionally, services covers NACE 64.2 and NACE 72.
(1) Services excluding NACE 64.2. (2) Manufacturing excluding NACE 33.3. (3) Manufacturing covers enterprises with at least 1 employee; manufacturing excluding NACE 30 and NACE 33.3; services excluding NACE 64.2. (4) Manufacturing size class 1-9 covers 3-9; services 1997 and excluding Group 64.2. (5) 1995. (6) 1998; size classes are based on the number of employees.
(7) Manufacturing 1998; manufacturing excluding NACE 30 and NACE 31.3 and NACE 33.2; size classes are based on the number of employees. (8) Manufacturing size classes are based on the number of employees. (9) Manufacturing 1997 and excluding NACE 31.3 and NACE 33.3.
Source: Eurostat Structural Business Statistics (New Cronos Theme4/sbs/sizclass).

Table 2.3: Employment in the ICT sector (units)

	EU-15 (1)	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Total number of persons employed in the ICT sector																		
1996 (2) (3)	:	95,786	:	:	:	:	697,345	52,480	522,649	:	:	:	64,521	73,157	:	:	4,204,143	:
1997 (4)	:	95,931	:	:	:	:	546,616	62,737	514,484	:	182,055	136,923	67,149	79,797	150,190	:	4,536,734	:
1998 (5) (6)	:	101,863	62,080	:	:	256,974	580,720	59,934	548,441	:	200,141	101,740	71,113	89,395	170,060	:	4,856,985	:
1999 (5) (7)	**4,500,000**	114,625	99,321	785,928	:	270,345	622,106	:	581,334	:	:	103,871	72,893	98,710	186,656	:	5,167,944	:
Number of persons employed in ICT manufacturing																		
1997	:	23,033	22,713	:	:	55,680	278,061	34,339	185,751	:	64,778	39,400	26,568	36,900	64,563	321,250	:	1,210,545
1998 (5)	:	22,868	20,334	:	:	55,261	283,178	35,594	179,419	:	61,078	39,253	28,105	40,869	69,178	:	:	1,210,715
1999 (5)	**1,500,000**	23,857	21,805	359,576	:	58,671	287,815	39,414	175,818	:	59,190	38,532	27,767	45,672	73,968	:	:	1,161,325
2000 (8)	:	25,406	22,520	371,807	:	60,615	293,338	42,696	186,035	:	24,006	40,869	26,481	48,389	74,218	:	:	1,133,689
Number of persons employed in ICT services																		
1996 (3)	:	71,088	:	:	:	:	419,930	24,700	329,238	3,527	105,632	:	38,519	39,543	:	:	:	:
1997 (4)	:	72,898	:	:	:	:	268,555	28,398	328,733	4,440	117,277	97,523	40,581	42,897	85,627	:	:	:
1998 (6)	:	78,995	41,746	:	:	201,713	297,542	24,340	369,022	5,141	139,063	62,487	43,008	48,526	100,882	:	:	:
1999 (7)	**3,000,000**	90,768	77,516	426,352	:	211,674	334,291	:	405,516	5,838	:	65,339	45,126	53,038	112,688	:	:	:
Number of persons employed in telecommunication services																		
1997	:	29,730	15,262	:	:	:	:	13,229	94,733	530	:	64,542	20,527	16,892	:	:	:	:
1998	:	28,759	19,550	:	:	78,662	:	:	97,773	609	:	23,459	21,817	18,062	:	:	:	:
1999	**950,000**	31,041	20,538	:	:	74,372	:	:	105,296	907	49,633	24,441	21,225	19,444	:	:	:	:
2000	:	33,384	20,950	:	:	71,685	155,965	:	89,965	:	60,713	24,325	21,184	22,434	:	:	:	:

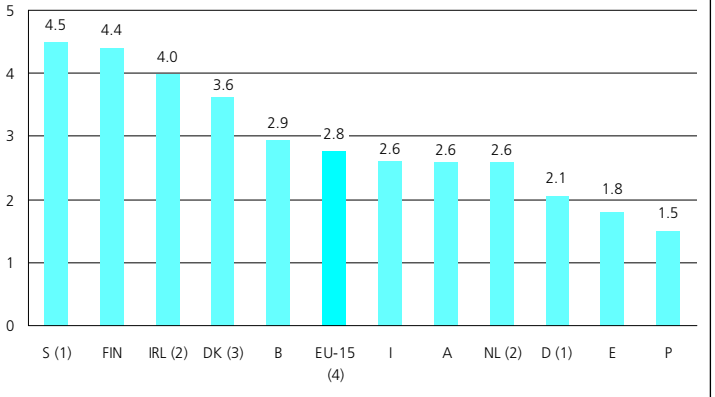
(1) Estimates, excluding EL. (2) DK, excluding NACE 33.3. (3) L, NL, excluding NACE 64.2. (4) F, NL, S, excluding NACE 64.2. (5) DK, excluding NACE 31.3.
(6) F, IRL, NL, S, excluding NACE 64.2; DK, excluding NACE 72. (7) D, F, S, excluding NACE 64.2. (8) DK, excluding NACE 31.3; NL, excluding NACE 32;
JP, for 2000, survey methods have been revised.
Source: Eurostat Structural Business Statistics (New Cronos Theme4/sbs/enterpr/enter_ms) for EU-15 and Member States; OECD for USA and JP.

Employment in the ICT sector

In 1999 4.5 million persons or 2.8% of all persons employed in the EU were employed in the ICT sector compared to a share of 3.3% in the USA and 3.1% in Japan (1997). Sweden and Finland were the EU Member States where the ICT sector accounted for the largest share of employment, followed by the United Kingdom and Ireland.

Services accounted for approximately two-thirds of ICT employment in the EU in 1999. Amongst the Member States only Ireland recorded higher employment in the manufacturing part of ICT than in services although in both Germany and Finland ICT manufacturing employment was quite close to the ICT services total.

Figure 2.1: Share of ICT employment in total employment, 1999 (%)



(1) Excluding NACE 64.2 (2) 1998; excluding NACE 64.2. (3) Excluding NACE 31.3.
(4) Estimates, excluding EL.
Source: Eurostat Structural Business Statistics
(New Cronos Theme4/sbs/enterpr/enter_ms) for ICT employment;
Eurostat (New Cronos Theme2/aux_ind/aux_perm/1000hab/emp) for total employment.

Table 2.4: Value added at factor cost in the ICT sector (million EUR)

	EU-15 (1)	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP (2)
Value added at factor cost in the ICT sector																		
1996 (3) (4)	:	7,483	:	:	:	:	44,728	3,763	29,985	:	:	:	2,888	4,599	10,394	:	412,433	194,970
1997 (5)	:	7,447	:	:	:	:	28,732	4,959	31,084	:	10,351	7,641	3,161	5,802	11,550	65,784	519,681	212,465
1998 (6) (7)	:	8,046	4,400	:	:	17,282	31,618	3,907	34,782	:	9,294	7,320	3,724	7,436	10,294	79,915	577,896	209,199
1999 (6) (8)	**365,000**	9,340	6,934	88,794	:	14,895	36,019	:	33,535	:	:	7,840	4,178	8,949	11,803	88,518	674,900	259,022
Value added at factor cost in ICT manufacturing																		
1996 (3)	:	1,547	932	:	:	2,937	14,939	2,161	8,627	:	3,615	:	589	2,098	3,558	13,873	:	:
1997	:	1,654	941	:	:	2,747	15,061	2,906	8,319	:	3,741	2,197	676	2,961	6,983	17,726	:	:
1998 (6)	:	1,401	934	:	:	2,749	15,522	2,644	8,153	:	1,381	2,626	807	4,031	4,675	18,965	:	:
1999 (6)	**95,000**	1,824	1,199	21,941	:	2,942	16,700	4,666	7,345	:	1,348	2,728	768	5,066	5,218	19,961	:	:
Value added at factor cost in ICT services																		
1996 (4)	:	5,936	:	:	:	:	29,790	1,602	21,359	179	:	:	2,299	2,501	6,836	:	:	:
1997 (5)	:	5,794	:	:	:	:	13,671	2,052	22,765	523	6,610	5,444	2,484	2,840	4,567	48,058	:	:
1998 (7)	:	6,645	3,466	:	:	14,533	16,097	1,263	26,629	599	7,913	4,694	2,916	3,406	5,619	60,951	:	:
1999 (8)	**270,000**	7,516	5,735	66,853	:	11,953	19,319	:	26,191	892	:	5,112	3,410	3,883	6,585	68,558	:	:
of which in telecommunication services																		
1996	:	3,462	1,707	:	:	:	16,696	1,091	12,769	:	:	:	1,856	1,216	2,907	:	:	:
1997	:	3,180	2,123	:	:	:	:	1,222	13,919	346	:	3,502	1,928	1,408	:	21,540	:	:
1998	:	3,414	2,230	:	:	10,291	:	:	15,846	400	:	2,356	2,224	1,629	:	24,229	:	:
1999	**131,000**	3,744	2,330	29,099	:	7,455	:	:	14,441	567	:	2,555	2,514	1,886	:	26,402	:	:

(1) Estimates, excluding EL. (2) Excluding NACE 51.64, 72.1, 72.5 and 72.6, including NACE 71.33. (3) DK, excluding NACE 33.3. (4) L, excluding NACE 64.2.
(5) F, NL, S, excluding NACE 64.2. (6) DK, excluding NACE 31.3; NL, excluding NACE 32. (7) F, IRL, NL, S, excluding NACE 64.2; DK, excluding NACE 72.
(8) F, S, excluding NACE 64.2.
Source: Eurostat Structural Business Statistics (New Cronos Theme4/sbs/enterpr/enter_ms).

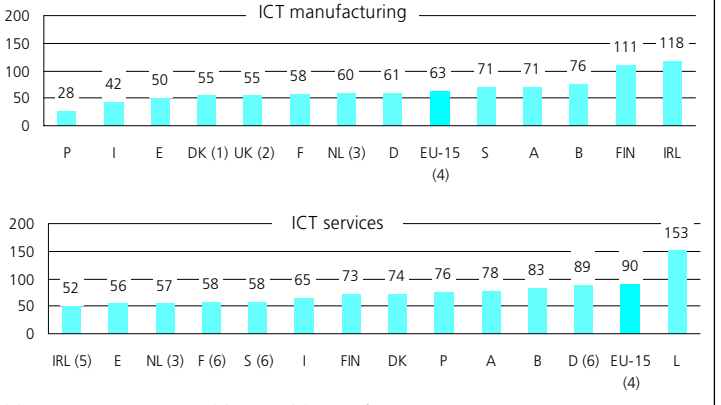
Value added at factor cost in the ICT sector

In 1999, the value added at factor cost of the ICT sector in the EU amounted to about 365 billion EUR. ICT services value added was estimated at 270 billion EUR, close to three times as high as the 95 billion EUR value added in ICT manufacturing.

In 1999, in the EU the value added per person employed in ICT manufacturing enterprises varied from less than 30,000 EUR in Portugal to over 100 thousand in Finland and Ireland.

ICT service enterprises showed a different picture with Ireland at the lower end of the ranking.

Figure 2.2: Value added at factor cost per person employed (thousand EUR), 1999



(1) Excluding NACE 31.3. (2) 1997. (3) 1998 for services; excluding NACE 32.
(4) Estimates, excluding EL. (5) 1998. (6) Excluding NACE 64.2.
Source: Eurostat Structural Business Statistics
(New Cronos Theme4/sbs/enterpr/enter_ms).

Table 2.5: Turnover in the ICT sector (million EUR)

	EU-15 (1)	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Turnover in the ICT sector																
1996 (2) (3)	:	17,803	:	:	:	:	119,430	12,753	72,194	:	:	:	7,293	13,475	33,424	124,065
1997 (4)	:	19,723	:	:	:	:	100,056	16,560	75,672	:	49,548	20,885	8,521	16,669	31,714	169,810
1998 (5) (6)	:	22,175	13,173	:	:	42,205	112,732	17,784	91,578	:	43,415	21,455	10,699	21,458	37,940	197,736
1999 (5) (7)	**990,000**	25,812	19,497	189,295	:	48,763	124,394	:	89,176	:	:	23,073	11,572	27,198	43,148	226,717
Turnover in ICT manufacturing																
1997	:	4,108	2,580	:	:	10,656	55,284	12,127	29,222	:	16,122	7,837	2,685	8,998	16,661	64,338
1998 (5)	:	4,519	2,529	:	:	11,355	60,013	13,763	30,573	:	5,212	9,017	3,138	12,127	19,045	66,740
1999 (5)	**350,000**	5,001	3,223	74,044	:	12,404	64,746	20,687	26,427	:	5,424	8,753	3,240	16,593	22,546	72,004
2000 (5)	:	6,416	3,438	90,059	:	14,033	77,355	28,805	34,094	:	6,196	9,648	3,931	25,098	32,075	84,458
Turnover in ICT services																
1996 (3)	:	13,705	:	83,052	:	:	66,351	3,284	43,594	584	:	:	4,854	6,531	19,416	75,809
1997 (4)	:	15,615	:	86,641	:	:	44,772	4,434	46,450	1,182	33,426	13,047	5,836	7,671	15,053	105,473
1998 (6)	:	17,656	10,644	99,873	:	30,850	52,719	4,021	61,006	1,323	38,203	12,438	7,561	9,330	18,895	130,996
1999 (7)	**640,000**	20,811	16,274	115,251	:	36,360	59,648	:	62,749	1,891	:	14,319	8,333	10,605	20,601	154,713
of which in telecommunication services																
1996	:	4,701	3,664	33,147	:	:	25,238	1,632	19,730	:	:	:	2,684	2,180	5,620	28,393
1997	:	4,954	4,355	33,871	:	:	:	1,989	21,771	587	:	5,686	2,966	2,597	:	39,142
1998	:	5,870	3,295	36,078	:	15,949	:	:	26,699	664	:	4,391	3,715	3,416	:	47,214
1999	**230,000**	7,219	3,816	40,065	:	18,230	:	:	28,094	818	:	5,583	4,632	4,094	:	55,067

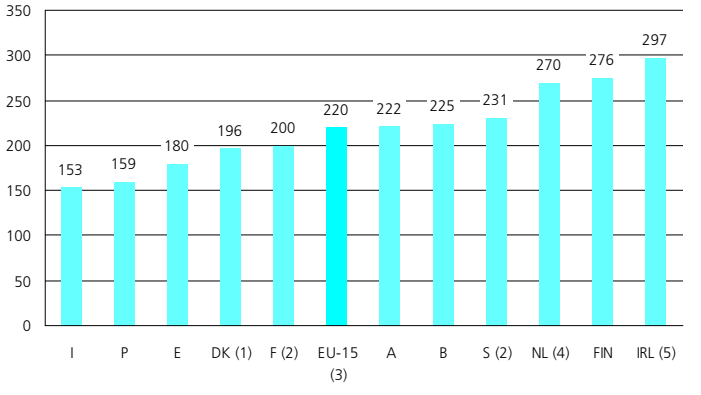
(1) Estimates, excluding EL. (2) DK, excluding NACE 33.3. (3) L, excluding NACE 64.2. (4) F, NL, S, excluding NACE 64.2.
(5) DK excluding NACE 31.3; NL excluding NACE 32. (6) F, IRL, NL, S, excluding NACE 64.2; DK, excluding NACE 72. (7) F, S, excluding NACE 64.2.
Source: Eurostat Structural Business Statistics (New Cronos Theme4/sbs/enterpr/enter_ms).

Turnover in the ICT sector

ICT turnover in 1999 in the EU was about 990 billion EUR, of which manufacturing accounted for just over one-third. Italy was the only Member State that recorded a fall in ICT turnover between 1998 and 1999. In the EU, all Member States displayed a higher turnover in ICT services than ICT manufacturing except for France, Ireland, Finland and Sweden, although it should be noted that turnover for telecommunications services is not available for France or Sweden.

In 1999 the EU's ICT value added was equivalent to 37% of the sector's turnover.

Figure 2.3: ICT turnover per person employed, 1999 (thousand EUR)



(1) Excluding NACE 31.3. (2) Excluding NACE 64.2.
(3) Estimates, excluding EL. (4) 1998; excluding NACE 32 and NACE 64.2.
(5) 1998; excluding NACE 64.2.
Source: Eurostat Structural Business Statistics
(New Cronos Theme4/sbs/enterpr/enter_ms).

Table 2.6: ICT market value (1)

	EU-15	B / L	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	US	JP
									ICT market value, 2001 (million EUR)								
Total ICT	**609,098**	17,815	12,049	137,069	8,362	38,612	97,094	6,239	70,088	34,265	14,549	8,802	9,612	22,623	131,919	783,389	283,798
Computer hardware	**89,960**	2,619	2,147	22,205	838	4,534	13,701	1,241	8,900	5,184	2,197	1,233	1,745	3,850	19,567	:	:
End user communications equipment	**41,842**	1,120	674	6,782	1,135	3,634	6,205	379	7,251	2,078	1,101	1,206	804	1,477	7,998	:	:
Office equipment	**9,430**	315	197	2,060	114	523	1,728	162	752	760	186	140	128	232	2,133	:	:
Datacom and network equipment	**45,788**	1,293	953	11,654	602	3,297	6,172	455	5,215	2,612	1,161	545	788	1,516	9,525	:	:
Software products	**62,626**	1,708	1,417	15,215	344	2,391	11,214	480	4,978	4,724	1,419	482	1,094	2,325	14,836	104,952	17,992
IT services	**125,889**	3,423	2,960	28,302	561	4,557	26,609	716	11,926	6,646	2,610	698	1,799	5,565	29,518	216,525	60,379
Carrier services	**233,562**	7,338	3,700	50,850	4,768	19,677	31,466	2,806	31,067	12,260	5,876	4,498	3,254	7,659	48,342	261,526	97,302
									ICT market value at current prices per capita (EUR)								
1999	**1,362**	1,398	2,036	1,453	638	790	1,383	1,347	1,007	1,819	1,479	732	1,654	2,185	1,822	2,583	1,991
2000	**1,538**	1,560	2,244	1,622	743	927	1,545	1,545	1,143	2,059	1,714	808	1,810	2,448	2,083	2,827	2,130
2001	**1,612**	1,664	2,252	1,668	792	962	1,645	1,631	1,212	2,143	1,791	859	1,855	2,547	2,205	2,817	2,239
									ICT market value relative to GDP at current market prices (%)								
1999	**6.4**	5.9	6.6	6.0	6.1	5.5	6.0	5.6	5.2	7.7	6.1	6.8	7.1	8.2	7.3	7.0	4.9
2000	**6.8**	6.2	6.9	6.6	6.5	6.1	6.4	5.6	5.7	8.1	6.8	7.1	7.1	8.7	8.0	7.3	5.2
2001	**6.9**	6.4	6.6	6.6	6.3	5.9	6.6	5.4	5.8	8.1	6.9	7.2	7.1	8.8	8.1	7.1	5.6

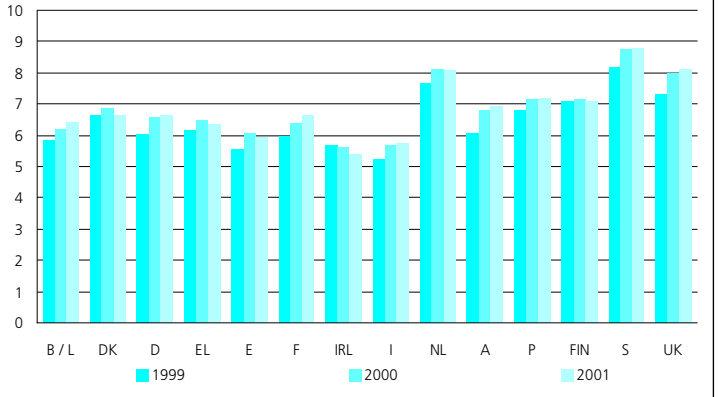
(1) All values and ratios presented at 2000 exchange rates.
Source: EITO 2002 for ICT market value data; Eurostat (New Cronos Theme3/demo/dgen/gind) for population data;
Eurostat (New Cronos Theme2/aggs/aggs_gdp/a_gdp_c) and Eurostat (New Cronos Theme2/aux_ind/aux_cra) for GDP at 2000 exchange rates.

ICT market value

In 2001 the total ICT market value in the EU reached nearly 610 billion EUR, with the largest shares of this reported by Germany (22.5%), the United Kingdom (21.7%) and France (15.9%). In terms of market value per capita, the situation varied across the EU. The EU-15 average of 1,612 EUR per head was quite noticeably less than that of Sweden (2,547 EUR), Denmark (2,252 EUR), the United Kingdom (2,205) and the Netherlands (2,143) while figures below the average were reported for several southern Member States, notably Greece (792 EUR), Portugal (859 EUR) and Spain (962 EUR).

From 1999 to 2000, the ICT market increased or remained stable relative to GDP, in all EU Member States. However, between 2000 and 2001 the ICT market relative to GDP grew in the EU as a whole but fell in several Member States, notably in Denmark, Greece, Spain and Ireland.

Figure 2.4: ICT market value relative to GDP at current market prices, 1999-2001 (%) (1)



(1) At 2000 exchange rates.
Source: EITO 2002 for ICT market value data;
Eurostat (New Cronos Theme2/aggs/aggs_gdp/a_gdp_c) and Eurostat (New Cronos Theme2/aux_ind/aux_cra) for GDP at 2000 exchange rates.

Table 2.7: ICT exports

	EU-15 (1)	B (2)	DK	D	EL	E	F	IRL	I	L (3)	NL	A	P	FIN	S	UK
								ICT exports (million EUR)								
1996	**63,606**	7,348	2,923	36,049	210	4,499	24,449	11,322	11,036	:	22,469	2,599	1,327	4,734	9,559	35,979
1997	**76,457**	8,150	3,513	41,319	274	4,590	29,203	14,837	11,158	:	31,441	3,167	1,560	6,160	11,667	40,713
1998	**82,850**	9,391	3,849	45,061	286	5,623	33,202	17,958	12,023	:	35,009	3,734	1,810	7,782	12,345	45,386
1999	**91,008**	9,625	4,290	50,478	357	5,423	33,344	22,298	12,253	1,351	41,616	4,365	1,883	8,820	14,761	49,322
2000	**125,087**	13,982	5,428	68,941	613	7,376	43,293	28,746	14,840	1,885	53,906	6,962	2,286	12,658	18,657	63,283
2001 (4)	**120,199**	11,982	5,279	66,233	427	6,866	38,047	32,649	15,153	3,456	47,527	7,704	2,471	10,607	10,985	62,619
								Five yearly average annual growth rate of ICT exports (%)								
2001 (4)	**13.6**	:	12.5	12.9	15.2	8.8	9.2	23.6	6.5	:	16.2	24.3	13.2	17.5	2.8	11.7
								Share of ICT in total exports (%)								
2001 (4)	**12.3**	6.0	9.1	10.4	4.0	5.6	10.6	35.3	5.6	30.0	18.6	9.8	9.3	22.0	13.1	20.5

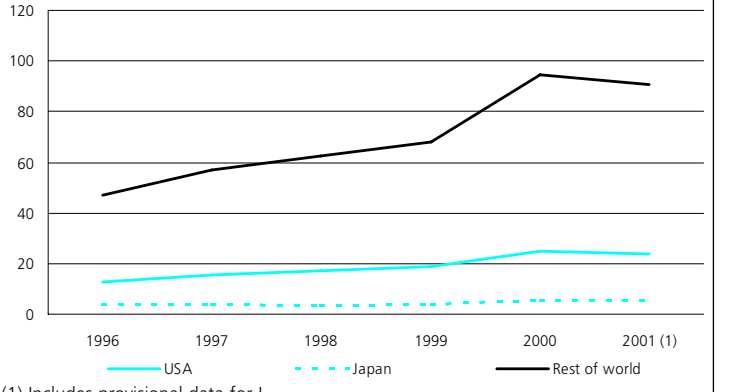
(1) Extra-EU exports only.
(2) Includes L for 1995 to 1998.
(3) Included in B for 1995 to 1998.
(4) EU-15 and L, provisional data.
Descriptions of the coverage of ICT external trade data can be found on pages 98 to 101.
Source: Eurostat, COMEXT (EEC Special Trade since 1988).

ICT exports

Between 1996 and 2000, EU ICT exports rose by 18.4% on average per year. In 2001 however they fell by 3.9%: only Ireland, Italy, Luxembourg, Austria and Portugal recorded increases in ICT exports and Greece, Finland and Sweden recorded particularly large reductions in the level of these exports.

In 2001, the EU's ICT exports amounted to 120 billion EUR of which 24 billion EUR went to the USA and 6 billion EUR to Japan. In 2001, the EU's ICT exports represented about 1.4% of GDP. In 2001, ICT exports represented about 12% of total exports, considerably less than the equivalent share accounted for by ICT imports.

Figure 2.5: EU-15 ICT exports, 1996-2001 (billion EUR)



(1) Includes provisional data for L.
Source: Eurostat, Comext (EEC Special Trade since 1988).

Table 2.8: ICT imports

	EU-15 (1)	B (2)	DK	D	EL	E	F	IRL	I	L (3)	NL	A	P	FIN	S	UK
								ICT imports (million EUR)								
1996	**87,985**	8,357	4,168	40,882	1,237	8,596	25,920	6,714	15,422	:	23,547	4,616	2,264	3,542	7,532	38,554
1997	**104,257**	9,589	4,751	44,647	1,430	8,757	30,349	8,672	17,826	:	31,466	5,435	2,546	4,232	8,776	43,139
1998	**119,573**	11,041	4,998	52,394	2,073	11,080	34,671	11,553	19,775	:	38,081	6,523	3,317	4,861	9,993	49,180
1999	**135,388**	12,005	5,727	59,103	2,577	11,941	36,207	13,978	21,614	1,375	43,626	7,731	3,584	5,160	10,252	55,514
2000	**190,280**	16,794	6,873	78,812	2,750	16,799	49,009	19,035	27,005	1,980	55,612	9,831	4,077	7,138	13,705	75,867
2001 (4)	**171,405**	14,203	6,783	74,740	2,422	14,619	43,005	20,592	25,004	2,722	47,671	10,355	4,159	6,438	10,246	65,637
								Five yearly average annual growth rate of ICT imports (%)								
2001 (4)	**14.3**	:	10.2	12.8	14.4	11.2	10.7	25.1	10.1	:	15.2	17.5	12.9	12.7	6.3	11.2
								Share of ICT in total imports (%)								
2001 (4)	**16.8**	7.5	13.4	13.6	7.7	9.2	11.8	36.4	9.6	20.0	20.6	12.4	9.8	17.7	14.7	17.6

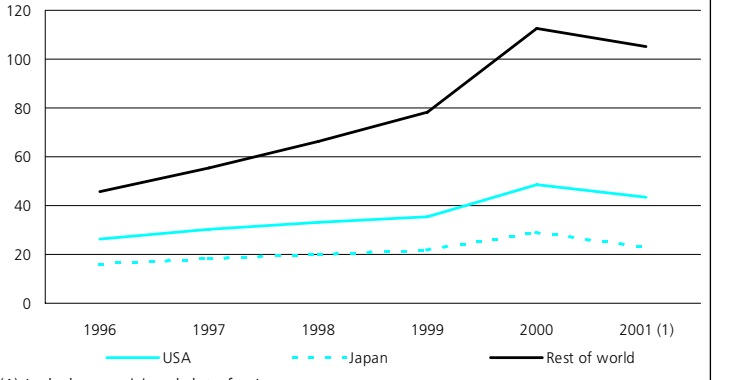
(1) Extra-EU imports only.
(2) Includes L for 1995 to 1998.
(3) Included in B for 1995 to 1998.
(4) EU-15 and L, provisional data.
Source: Eurostat, COMEXT (EEC Special Trade since 1988).

ICT imports

The EU's imports of ICT goods was estimated at 171 billion EUR in 2001, 51 billion EUR more than the level of ICT exports. This represented a fall of 9.9% compared to 2000, a much larger fall than for the EU's ICT exports. Among the 15 EU Member States, compared to 2000, increases in the level of imports of ICT goods in 2001 were only reported by Ireland, Luxembourg, Austria and Portugal.

The EU's imports of ICT goods from the USA were valued in 2001 at 43 billion EUR and from Japan at 23 billion EUR. The share of the EU's imports of ICT goods originating in the USA and Japan has been falling for several years: in 1996 together they accounted for 48.1% of the EU's ICT imports but by 2001 this had fallen to 39%.

Figure 2.6: EU-15 ICT imports, 1996-2001 (billion EUR)



(1) Includes provisional data for L.
Source: Eurostat, Comext (EEC Special Trade since 1988).

Table 2.9: ICT trade balance

	EU-15 (1)	B (2)	DK	D	EL	E	F	IRL	I	L (3)	NL	A	P	FIN	S	UK
ICT trade balance (million EUR)																
1996	**-24,378**	-1,009	-1,245	-4,834	-1,027	-4,097	-1,471	4,608	-4,386	:	-1,078	-2,018	-937	1,193	2,027	-2,575
1997	**-27,799**	-1,439	-1,238	-3,328	-1,156	-4,167	-1,146	6,165	-6,668	:	-25	-2,268	-986	1,928	2,891	-2,425
1998	**-36,723**	-1,650	-1,150	-7,333	-1,787	-5,457	-1,470	6,404	-7,752	:	-3,072	-2,789	-1,507	2,922	2,352	-3,794
1999	**-44,380**	-2,379	-1,438	-8,625	-2,220	-6,519	-2,863	8,320	-9,361	-24	-2,010	-3,366	-1,701	3,660	4,510	-6,191
2000	**-65,194**	-2,811	-1,445	-9,871	-2,137	-9,423	-5,716	9,710	-12,165	-95	-1,706	-2,869	-1,791	5,520	4,952	-12,584
2001 (4)	**-51,206**	-2,221	-1,504	-8,506	-1,995	-7,754	-4,957	12,057	-9,851	735	-144	-2,651	-1,688	4,169	739	-3,018
Five yearly average annual growth rate of ICT trade balance (%)																
2001 (4)	**(16.0)**	:	(3.9)	(12.0)	(14.2)	(13.6)	(27.5)	21.6	(17.6)	:	(-33.2)	(5.6)	(12.5)	28.4	-18.3	(3.2)
ICT trade balance relative to GDP at market prices (%)																
2001	**-0.6**	-0.9	-0.8	-0.4	-1.5	-1.2	-0.3	10.4	-0.8	3.5	0.0	-1.3	-1.4	3.1	0.3	-0.2

(1) Extra-EU trade only; note that the value for EU-15 is not the sum of the trade balances of the Member States because of inconsistencies between intra-EU exports and imports in the data for the Member States.
(2) Includes L for 1995 to 1998.
(3) Included in B for 1995 to 1998.
(4) EU-15 and L, provisional data.
Source: Eurostat, COMEXT (EEC Special Trade since 1988).

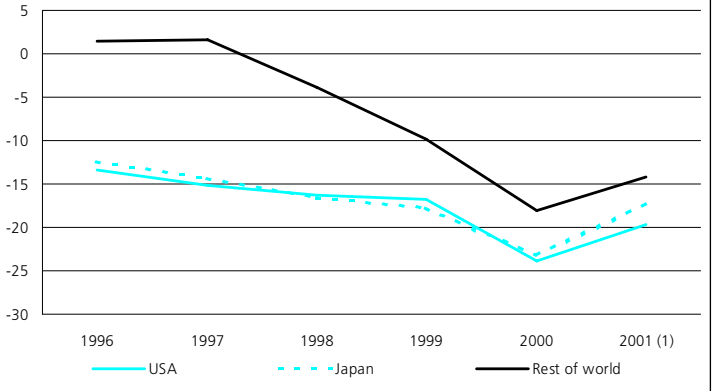
ICT trade balance

The EU's imports of ICT goods exceeded its exports of the same goods by 51 billion EUR in 2001. This trade deficit in 2001 was narrower than in 2000 and represented a reversal of the trend to ever larger trade deficits in ICT goods that had been observed for several years. The narrower trade deficit in 2001 came about because imports of ICT goods fell further than exports in absolute and relative terms.

In 2001 only Ireland, Luxembourg, Finland and Sweden among the EU Member States recorded a trade surplus in ICT goods.

The EU's trade deficit in ICT goods with the USA fell from 23.9 billion EUR in 2000 to 19.7 billion EUR, a fall of 18%. The equivalent trade deficit with Japan fell from 23.2 billion EUR to 17.3 billion EUR over the same period, a fall of 25%.

Figure 2.7: EU-15 ICT trade balance, 1996-2001 (billion EUR)



(1) Includes provisional data for L.
Source: Eurostat, Comext (EEC Special Trade since 1988).

ICT PENETRATION

Table 3.1: Personal computers

	EU-15	B (1)	DK (1)	D (1)	EL	E	F	IRL	I	L	NL	A (1)	P	FIN	S	UK	US	JP
									Number of PCs (million)									
1999	**93.9**	3.2	2.2	24.4	0.6	4.8	15.7	1.2	9.0	0.2	5.7	2.1	0.9	1.9	4.0	18.0	141.0	36.3
2000	**106.1**	3.5	2.3	27.6	0.8	5.8	17.9	1.4	10.3	0.2	6.3	2.3	1.1	2.1	4.5	20.2	161.0	40.0
2001	**118.0**	3.7	2.4	29.0	0.9	6.8	20.0	1.5	11.3	0.2	6.9	2.5	1.2	2.2	5.0	22.0	178.0	44.4
									PCs per 100 inhabitants									
1999	**25**	32	41	30	6	12	27	32	16	39	36	26	9	36	45	30	52	29
2000	**28**	34	43	34	7	14	30	36	18	45	39	28	10	40	51	34	59	32
2001	**31**	36	45	35	8	17	34	39	19	51	43	31	12	42	56	37	62	35

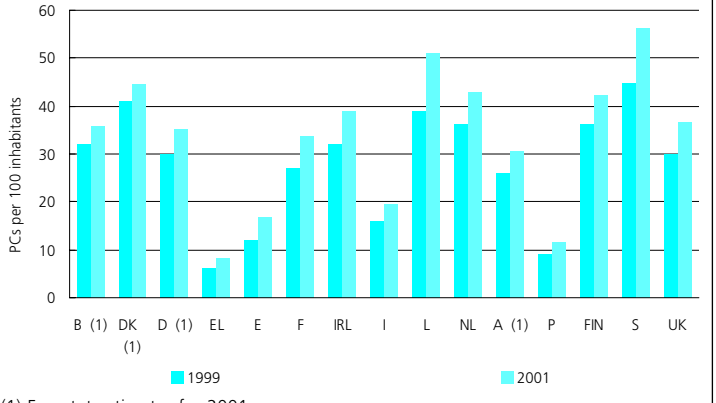
(1) Eurostat estimates for 2001.
Source: ITU estimates.

Personal computers

Over the 5 years to 2001 all Member States recorded an increase in the number of personal computers. Sweden, Luxembourg, Denmark, the Netherlands and Finland came out at the top of a ranking of EU Member States in terms of the PC penetration rate, with between 42 and 56 PCs per 100 inhabitants in 2001. Greece and Portugal remained at the other end of this ranking in 2001 with 8 and 12 PCs per 100 inhabitants respectively.

In 2001, as in earlier years, the USA recorded a higher penetration rate; already by 1999 it was reported that there were more than 50 PCs per 100 inhabitants and by 2001 this had grown to 62.

Figure 3.1: PC penetration

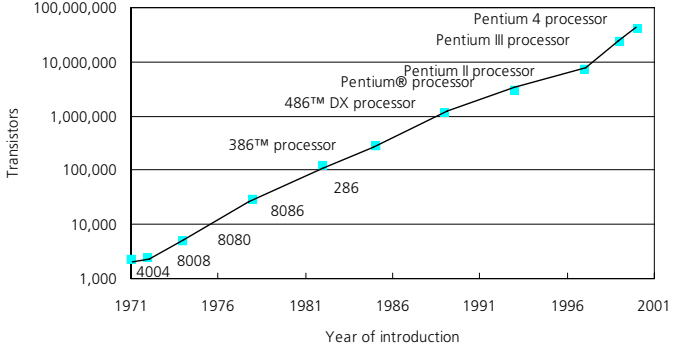


(1) Eurostat estimates for 2001.
Source: ITU estimates.

Technology change in PCs

In 1965, Gordon Moore, co-founder of Intel, observed that the capacity of chips doubled every 18-24 months. Moore's observation is nowadays known as 'Moore's Law', which has been relatively accurate in describing the evolution of chip capacity (number of transistors on a chip) over the last 30 years. In the period 1971-2000, the number of transistors stored on a chip has increased more than 18,000 fold, rising from 2,250 on the Intel 4004 in 1971 to 55 million on the latest Intel Pentium 4 processors in 2002. In 1971 the frequency of a chip was of 108 Kilohertz while in 2002 it reached 2.53 Gigahertz. However, it becomes more and more expensive to develop and produce new generations of chips. 'Moore's Second Law' says that each generation of chips costs twice as much to develop as the last, while 'Rock's law' states that the cost of capital equipment to build semiconductors will double every four years. The cost of a fabrication plant for micro chips increased from 13 million EUR in 1966 to several billion euro at the end of the 1990s.

Figure 3.2: Moore's law: development from the 4004 to the Pentium 4 processor



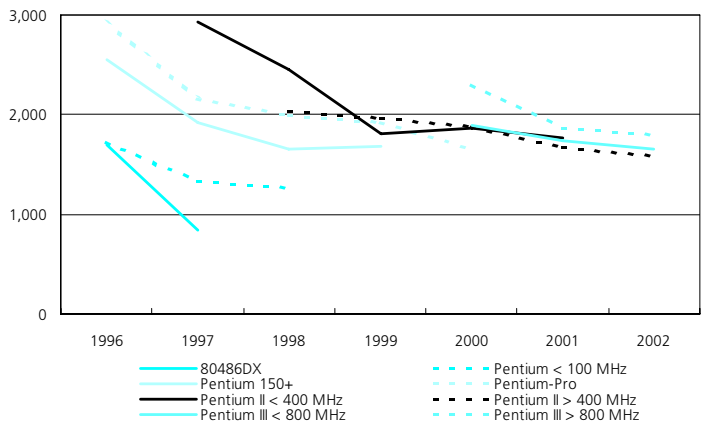
Source: Intel Museum.

Price change in PCs

Personal computers have become cheaper as they have become more powerful. The average selling prices of PCs based on new processors have regularly fallen sharply soon after their introduction, although this appears to have become less extreme with the later Pentium based PCs. As prices of new models of PCs reached a more stable price level older models tended to be withdrawn, sometimes after falling again sharply at the end of their life.

Although prices of individual models have shown a strong tendency to fall over their lifespan, each new model has tended to stabilise at a higher price than its predecessors. This effect has also reduced recently and at the turn of the 21st Century average selling prices for Pentium II and Pentium III based models were stabilising around similar price levels.

Figure 3.3: Average selling prices for PCs in Europe (EUR)



Source: EITO 2002.

Table 3.2: Number of supercomputers per country among the 500 most powerful supercomputers in the world (units) (1)

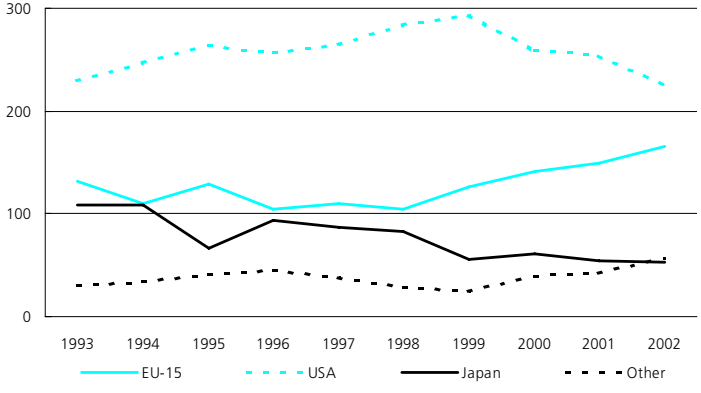
	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
1993	132	0	3	59	1	2	27	0	5	0	6	2	0	2	2	23	229	109
1994	110	1	2	43	1	3	24	0	2	0	6	1	0	2	2	23	247	109
1995	129	2	2	54	1	3	28	0	5	0	7	1	0	3	6	17	264	66
1996	105	0	5	47	0	4	18	0	4	0	7	1	0	1	6	12	257	93
1997	110	0	2	45	0	4	19	0	1	1	5	0	0	1	8	24	265	87
1998	104	1	3	46	0	5	10	0	3	0	4	0	0	1	6	25	284	83
1999	126	3	3	47	0	3	18	0	5	1	6	2	0	2	7	29	293	56
2000	141	0	1	65	1	2	20	0	6	6	5	0	0	2	5	28	259	61
2001	150	1	2	64	0	2	20	0	12	2	7	2	1	2	4	31	254	54
2002	165	3	0	64	0	0	23	0	16	2	9	1	1	4	5	37	225	53

(1) June of the reference year.
Source: www.top500.org.

Supercomputers

Recent data from www.top500.org on the most powerful supercomputers in the world show that nearly one-third of these were located in the EU Member States in June 2002. This represented a significant increase compared to the 21% share in 1998. Nevertheless the USA remained host to the largest share of the most powerful computers with 45% of the total. Approximately 11% of the 500 most powerful supercomputers are located outside of the USA, EU and Japan, mainly in Canada (13 supercomputers), South Korea (11), South Africa (4), Australia, Egypt, Saudi Arabia and Norway (all 3). As of June 2002 none of the 500 most powerful supercomputers were located in any of the Candidate countries, however an analysis of June data over several years shows that both Poland and Slovenia have figured in the ranking.

Figure 3.4: Number of computers among the 500 most powerful supercomputers in the world (units) (1)



(1) June of the reference year.
Source: www.top500.org.

Table 3.3: Internet hosts

TLD	EU sum	.be	.dk	.de	.gr	.es	.fr	.ie	.it	.lu	.nl	.at	.pt	.fi	.se	.uk	.us (1)	.jp	Generic (2)
Number of Internet hosts (thousands) (3)																			
1996	**2,993**	65	107	620	17	113	239	27	148	4	271	89	24	314	238	719	865	496	7,362
1997	**4,652**	107	169	1,132	28	196	355	40	254	5	391	108	42	487	349	988	1,367	956	10,462
1998	**6,417**	209	298	1,450	50	307	511	56	387	8	626	173	56	460	379	1,449	2,661	1,352	23,079
1999	**8,489**	339	338	1,635	75	470	1,233	64	302	10	959	263	78	462	523	1,739	3,118	2,073	37,854
2000	**10,477**	300	334	2,040	111	455	1,122	111	1,020	12	1,624	483	62	529	596	1,678	4,167	3,413	64,731
2001	**12,690**	352	561	2,426	143	539	789	128	680	14	2,632	326	247	887	735	2,231	4,029	5,887	87,307
2002	**13,894**	360	634	2,491	151	1,061	1,254	130	697	14	2,487	342	215	932	775	2,350	4,033	7,118	102,161
Internet hosts per 100 inhabitants (4)																			
1996	**0.8**	0.6	2.0	0.8	0.2	0.3	0.4	0.7	0.3	0.8	1.7	1.1	0.2	6.1	2.7	1.2	:	0.4	.
1997	**1.2**	1.1	3.2	1.4	0.3	0.5	0.6	1.1	0.4	1.1	2.5	1.3	0.4	9.5	3.9	1.7	:	0.8	.
1998	**1.7**	2.0	5.6	1.8	0.5	0.8	0.9	1.5	0.7	1.8	4.0	2.1	0.6	8.9	4.3	2.5	:	1.1	.
1999	**2.3**	3.3	6.4	2.0	0.7	1.2	2.1	1.7	0.5	2.2	6.1	3.2	0.8	8.9	5.9	2.9	:	1.6	.
2000	**2.8**	2.9	6.3	2.5	1.0	1.1	1.9	2.9	1.8	2.7	10.2	6.0	0.6	10.2	6.7	2.8	:	2.7	.
2001	**3.4**	3.4	10.5	3.0	1.4	1.3	1.3	3.3	1.2	3.2	16.5	4.0	2.4	17.1	8.3	3.7	:	4.6	.
2002	**3.7**	3.5	11.9	3.0	1.4	2.6	2.1	3.4	1.2	3.2	15.6	4.2	2.1	18.0	8.7	3.9	:	5.6	.

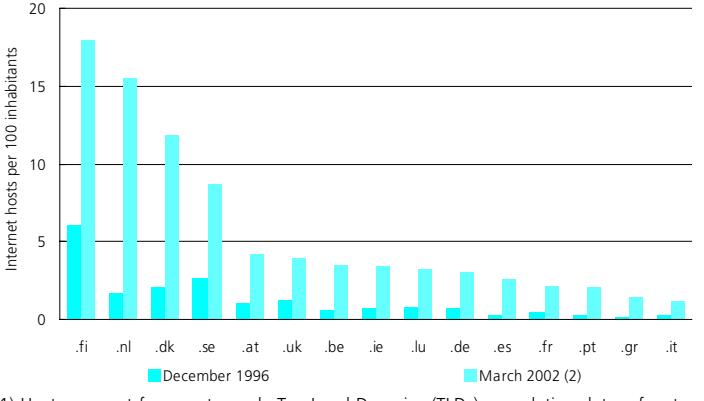
(1) US includes only .us and .mil. Many hosts in the USA in particular use generic TLDs.
(2) Generic includes .com, .org, .int, .net, .edu, .gov
(3) Hosts account for country code Top Level Domains (TLDs) unless otherwise specified; EU and EU Member States: December for all years except 2002 which is March; US, JP and Generic: July for all years except 2002 which is January.
(4) All population data for January of the reference year except for 2002 which uses 2001 data.
Source: RIPE NCC for EU and EU Member States; ISC for US, JP and Generic; Eurostat (New Cronos Theme3/demo/dgen/gind) for population data.

Internet hosts

Hosts are identified by their two-digit country code Top Level Domain (TLD) or by a three-digit generic TLD (such as .com or .org). This does not necessarily entail that the host is physically located in the corresponding country, but reveals how many hosts are interested in being identified with the respective countries or generic type. For generic TLDs only estimates can be made to distribute the number of hosts geographically, although it is widely accepted that many of these are located in the USA. For this and other reasons great care therefore has to be taken when comparing between countries the absolute numbers of hosts and the number of hosts relative to population.

There were 147.3 million Internet hosts world-wide in January 2002 (ISC estimates). In excess of 100 million of these were generic top level domains such as .com or .org. The number of hosts using TLDs of the Member States of the EU was estimated in March 2002 at 13.9 million, with an Internet host density of 3.7 per 100 inhabitants. The highest densities among the EU Member States were recorded in Finland and the Netherlands and the lowest in Italy, Greece, Portugal and France.

Figure 3.5: Internet host penetration (1)



(1) Hosts account for country code Top Level Domains (TLDs); population refers to the situation in January of the reference year.
(2) 2002 uses 2001 population data.
Source: RIPE NCC.

Table 3.4: Internet users

	EU-15 (1)	B	DK	D	EL	E	F	IRL	I	L (1)	NL	A	P	FIN	S	UK	US	JP
Number of Internet users (thousands)																		
1999	**58,087**	1,200	1,500	14,400	750	2,830	5,370	679	8,200	75	3,000	1,250	1,000	1,667	3,666	12,500	102,000	27,060
2000	**89,723**	2,326	1,950	24,000	1,000	5,388	8,500	784	13,200	100	3,900	2,100	2,500	1,927	4,048	18,000	124,000	37,200
2001	**119,102**	2,881	2,400	30,000	1,400	7,388	15,653	895	16,000	150	5,300	2,600	3,600	2,235	4,600	24,000	142,823	57,900
Internet users per 100 inhabitants																		
1999	**15.4**	11.8	28.2	17.5	7.1	7.0	9.2	18.2	14.3	17.2	18.9	15.3	10.0	32.3	41.4	21.0	37.4	21.4
2000	**23.8**	22.9	36.6	29.2	9.5	13.4	14.4	20.7	23.0	22.7	24.4	25.9	24.9	37.2	45.6	30.1	45.1	29.3
2001	**31.4**	28.0	44.7	36.4	13.2	18.3	26.4	23.3	27.6	28.9	32.9	31.9	34.9	43.0	51.6	40.0	50.0	45.5

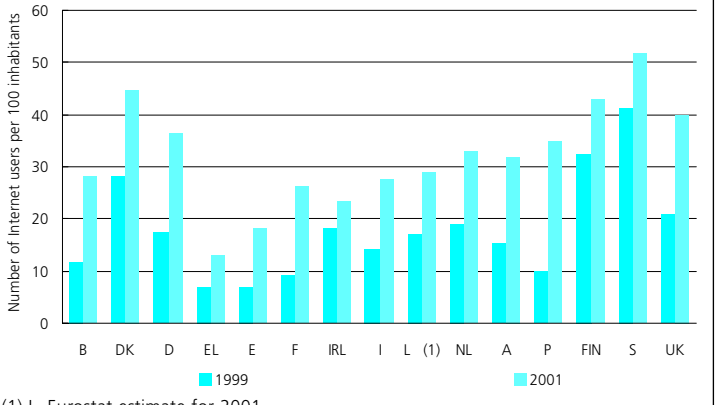
(1) Includes Eurostat estimate for 2001 for L.
Source: ITU.

Internet users

In 2001, just under one-third of the EU population had access to the Internet; for persons aged 15 years or over the proportion was around four-tenths. The total number of Internet users in the EU was estimated at 119 million in 2001.

Among the EU Member States the highest user rates were reported in the Nordic Member States: Sweden (51.6 per 100 inhabitants), Denmark (44.7) and Finland (43.0). The lowest rates were reported in Greece and Spain, with 13.2 and 18.3 Internet users per 100 inhabitants respectively. A comparison of usage rates in 1997 and in 2001 shows that the usage rates in Greece and Spain in 2001 were still below the Swedish level of 1997 and that it is only in 2001 that the usage rates in France and Ireland have managed to pass the 1997 Swedish rate.

Figure 3.6: Internet users



(1) L, Eurostat estimate for 2001.
Source: ITU.

Table 3.5: Mobile phone subscriptions

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Mobile phone subscriptions (thousands)																		
1999	**150,350**	3,187	2,629	23,446	3,904	12,300	21,434	1,655	30,296	209	6,746	4,250	4,672	3,273	5,165	27,185	86,047	56,846
2000	**238,884**	5,336	3,364	48,202	5,932	24,736	29,052	2,490	42,246	303	10,755	6,253	6,665	3,729	6,369	43,452	109,478	66,784
2001	**274,578**	7,690	3,954	56,245	7,962	26,494	35,922	2,800	48,698	432	11,900	6,566	7,978	4,044	6,867	47,026	127,000	72,796
Mobile phone subscriptions per 100 inhabitants																		
1999	**40.0**	31.4	49.5	28.5	36.7	30.6	36.6	44.2	52.8	48.0	42.5	52.0	46.7	63.4	58.3	45.7	31.6	44.9
2000	**63.4**	52.5	63.1	58.6	56.2	61.7	49.3	65.8	73.7	68.7	67.3	77.0	66.5	72.0	71.7	72.7	39.8	52.6
2001	**72.4**	74.7	73.7	68.3	75.1	65.5	60.5	72.9	83.9	96.7	73.9	80.7	77.4	77.8	77.1	78.3	44.4	57.2
Proportion of mobile phone subscriptions that are digital (%)																		
2001	**:**	100.0	99.5	:	100.0	:	100.0	:	:	80.9	100.0	:	95.4	:	:	:	:	99.0

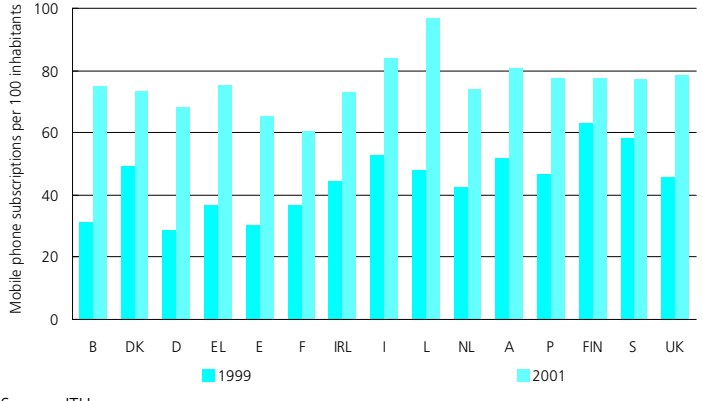
Source: ITU.

Mobile phone subscriptions

In 2001, there were about 275 million mobile phone subscriptions in the EU. This is in excess of twice as many as the number in the USA (where a large number of subscriptions still use analogue services). Mobile subscriptions are one of the most evenly spread of the newer technologies in the EU Member States, with the number of subscriptions per 100 inhabitants in 2001 between 60.5 and 83.9 with only Luxembourg (96.7) outside of this range.

The penetration of mobile phones in EU Member States has increased over the last few years, but appears to be reaching saturation in some markets. The number of mobile phone subscriptions in Austria, Spain, Sweden, Finland and the United Kingdom grew by less than 10% in 2001. In comparison in 2000 all of the EU Member States had recorded year on year growth in excess of this value and the average growth in the EU has been in excess of 50% per year for several years. Mobile telephony has become sufficiently widespread in the EU that the number of subscriptions has surpassed the number of main telephone lines. This first occurred in 1998 in Finland and by 2001 had occurred in every Member State.

Figure 3.7 Mobile phone penetration



Source: ITU.

Table 3.6: ISDN subscriptions

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
								Number of ISDN subscriptions (thousands)								
1995	**1,561**	28	14	961	:	28	284	0	49	2	29	17	8	6	17	117
1996	**3,067**	55	30	1,945	1	96	444	0	110	4	96	42	20	27	53	145
1997	**9,543**	99	58	7,341	2	228	701	6	290	10	279	86	48	58	72	266
1998	**14,540**	185	113	10,254	4	295	1,540	10	653	18	574	156	90	100	122	426
1999	**:**	319	241	13,636	29	544	:	:	1,521	28	:	253	140	157	:	656
2000	**:**	:	351	17,947	:	:	:	:	:	:	:	:	195	208	270	819
								Number of ISDN subscriptions per 1,000 inhabitants (1)								
1995	**4**	3	3	12	:	1	5	0	1	4	2	2	1	1	2	2
1996	**8**	5	6	24	0	2	8	0	2	9	6	5	2	5	6	2
1997	**26**	10	11	90	0	6	12	2	5	25	18	11	5	11	8	5
1998	**39**	18	21	125	0	7	26	3	11	43	37	19	9	19	14	7
1999	**:**	31	45	166	3	14	:	:	26	64	:	31	14	30	:	11
2000	**:**	:	66	218	:	:	:	:	:	:	:	:	19	40	30	14

(1) All population data for January of the reference year.
Source: Eurostat (New Cronos Theme4/coins/telecom/tel_ser); Eurostat (New Cronos Theme3/demo/dgen) for population.

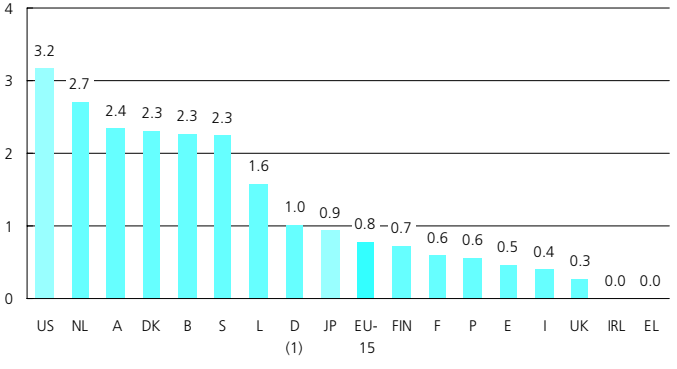
ISDN

ISDN (Integrated Services Digital Network) standards concern the transmission of digital information, usually across traditional (copper) telephone wires. Adoption of ISDN varies significantly across EU Member States. The number of ISDN subscriptions passed 1 million in Germany in 1996, in France in 1998 and in Italy in 1999. By 2000 there were over 17 million ISDN subscriptions in Germany. Relative to population the number of ISDN subscriptions in Germany is far ahead of other EU Member States with 218 subscriptions per 1,000 inhabitants in 2000. In contrast in the United Kingdom there were 14 subscriptions per 1,000 inhabitants and ISDN subscription rates were also low in Spain, Ireland and Greece.

Broadband

Internet access using cable modem and DSL broadband technologies in 2001 was also low or insignificant in Greece and Ireland. Within the EU the leader in the use of these types of broadband access was the Netherlands, although even there the penetration rate was lower than in the USA.

Figure 3.8: Number of cable modem and DSL connections to the Internet per 100 inhabitants, June 2001



(1) 2000 for cable modems.
Source: OECD for cable modem and DSL connections;
Eurostat (New Cronos Theme3/demo/dgen) for population.

ICT penetration in EFTA and Candidate countries

Table 3.7: Personal computers in EFTA and Candidate countries

	IS	NO	CH	BG (1)	CY	CZ (1)	EE	HU	LV	LT	MT	PL	RO	SK	SI	TR
								Number of PCs (thousands)								
1999	100	2,000	3,300	220	130	1,100	195	750	200	220	70	2,400	600	590	500	2,200
2000	110	2,200	3,600	361	150	1,250	220	870	340	240	80	2,670	713	740	548	2,500
2001	120	2,300	:	400	170	1,400	250	1,000	360	260	90	3,300	800	800	550	2,700
								PCs per 100 inhabitants								
1999	35.9	44.7	46.1	2.7	19.3	10.7	13.5	7.5	8.2	6.0	18.1	6.2	2.7	10.9	25.1	3.4
2000	39.2	49.1	50.0	4.4	22.4	12.1	15.3	8.7	14.0	6.5	20.5	6.9	3.2	13.7	27.5	3.8
2001	41.8	50.8	:	4.9	25.0	13.6	17.5	10.0	15.3	7.1	23.0	8.5	3.6	14.8	27.6	4.1

(1) Eurostat estimates for 2001.
Source: ITU estimates.

Table 3.8: Internet hosts in EFTA and Candidate countries

	IS	NO	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI	TR (1)
Number of Internet hosts (thousands) (2)																
1996	12.0	150.0	133.0	3.3	1.5	40.8	8.0	30.0	5.8	1.7	0.5	53.0	7.8	7.9	13.8	:
1997	19.0	292.0	189.0	6.8	3.0	56.9	15.8	68.0	7.1	4.0	0.8	88.0	13.6	14.5	19.5	:
1998	25.0	319.0	245.0	10.3	5.5	86.5	24.2	96.0	14.3	9.8	1.8	131.0	23.5	22.1	22.9	:
1999	29.9	439.0	269.8	16.8	6.2	122.3	30.1	119.6	18.9	14.2	6.0	171.2	36.3	28.2	23.6	78.9
2000	39.9	452.7	262.5	18.4	8.0	159.3	40.9	104.4	19.9	17.8	6.6	339.8	41.5	37.9	21.9	69.9
2001	54.7	305.1	527.6	26.9	2.1	215.5	51.0	167.6	25.0	35.2	8.7	489.9	46.3	72.6	29.6	106.6
2002	55.2	292.5	524.9	28.3	2.0	228.4	54.5	171.5	30.7	30.3	8.9	484.0	48.0	78.9	32.6	118.0
Internet hosts per 100 inhabitants (3)																
1996	4.5	3.4	1.9	0.0	0.2	0.4	0.5	0.3	0.2	0.0	0.1	0.1	0.0	0.1	0.7	:
1997	7.0	6.6	2.7	0.1	0.4	0.6	1.1	0.7	0.3	0.1	0.2	0.2	0.1	0.3	1.0	:
1998	9.2	7.2	3.5	0.1	0.7	0.8	1.7	0.9	0.6	0.3	0.5	0.3	0.1	0.4	1.2	:
1999	10.8	9.9	3.8	0.2	0.8	1.2	2.1	1.2	0.8	0.4	1.6	0.4	0.2	0.5	1.2	0.1
2000	14.3	10.1	3.7	0.2	1.1	1.6	3.0	1.0	0.8	0.5	1.7	0.9	0.2	0.7	1.1	0.1
2001	19.6	6.8	7.4	0.3	0.3	2.1	3.7	1.7	1.1	1.0	2.3	1.3	0.2	1.3	1.5	0.2
2002	19.8	6.5	7.3	0.3	0.3	2.2	4.0	1.7	1.3	0.8	2.3	1.3	0.2	1.5	1.6	0.2

(1) All population data refer to January 1999, source: Eurostat (New Cronos Theme1/cec/cec_c/c_dem/cdem01).
(2) Hosts account for country code Top Level Domains (TLDs) unless otherwise specified; December for all years except 2002 which is March.
(3) Except for TR all population data for January of the reference year except for 2001 and 2002 which use 2000 data.
Source: RIPE NCC; Eurostat (New Cronos Theme3/demo/dgen/gind) for population data.

Table 3.9: Internet users in EFTA and Candidate countries

	IS	NO	CH	BG	CY	CZ	EE	HU	LV	LT	MT (1)	PL	RO	SK	SI	TR
Number of Internet users (thousands)																
1999	150	2,000	1,761	235	88	700	200	600	105	103	30	2,100	600	600	250	1,500
2000	168	2,200	2,134	430	120	1,000	392	715	150	225	61	2,800	800	650	300	2,000
2001	195	2,700	2,917	605	150	1,400	430	1,480	170	250	99	3,800	1,000	900	600	2,500
Internet users per 100 inhabitants																
1999	53.8	44.7	24.6	2.8	13.1	6.8	13.9	6.0	4.3	2.8	7.8	5.4	2.7	11.1	12.6	2.3
2000	59.8	49.1	29.6	5.3	17.9	9.7	27.2	7.1	6.2	6.1	16.0	7.2	3.6	12.0	15.1	3.1
2001	67.9	59.6	40.4	7.5	22.2	13.6	30.0	14.8	7.2	6.8	25.3	9.8	4.5	16.7	30.1	3.8

(1) 2000, national sources.
Source: ITU; Eurostat estimate for SK for 2001.

Table 3.10: Mobile phone subscriptions in EFTA and Candidate countries

	IS	NO	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI	TR
								Mobile phone subscriptions (thousands)								
1999	173	2,745	3,058	350	152	1,945	387	1,628	274	332	38	3,957	1,356	664	631	8,122
2000	216	3,368	4,639	738	218	4,346	557	3,076	401	524	114	6,747	2,499	1,110	1,216	16,133
2001	235	3,737	5,226	1,550	314	6,769	651	4,968	657	932	239	10,050	3,860	2,147	1,516	20,000
								Mobile phone subscriptions per 100 inhabitants								
1999	61.9	61.3	42.7	4.2	22.5	19.0	26.8	16.2	11.3	9.0	9.7	10.2	6.1	12.3	31.8	12.6
2000	76.7	75.1	64.4	9.1	32.5	42.2	38.7	30.8	16.6	14.2	29.3	17.5	11.1	20.6	61.1	24.7
2001	82.0	82.5	72.4	19.1	46.4	65.9	45.5	49.8	27.9	25.3	61.9	26.0	17.2	39.7	76.0	30.2

Source: ITU; Eurostat (New Cronos Theme4/coins/telecom/tel_ser) for MT for 2001.

Table 3.11: ISDN subscriptions in EFTA and Candidate countries

	IS	NO	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI	TR (1)
Number of ISDN subscriptions (thousands)																
1995	0	12	69	:	:	:	0	:	:	:	0	:	:	:	0	:
1996	3	44	126	:	0	:	0	:	:	:	0	:	:	:	0	:
1997	12	150	208	:	1	0	16	:	:	:	0	:	:	:	6	:
1998	10	310	341	153	1	3	22	:	:	:	0	:	:	3	14	:
1999	16	532	1,444	229	3	11	31	:	:	:	0	99	:	13	31	2
2000	21	703	1,853	346	7	26	41	:	:	:	:	207	:	39	55	7
Number of ISDN subscriptions per 1,000 inhabitants (2)																
1995	0	3	10	:	:	:	0	:	:	:	0	:	:	:	0	:
1996	12	10	18	:	0	:	0	:	:	:	0	:	:	:	0	:
1997	46	34	29	:	1	0	11	:	:	:	0	:	:	:	3	:
1998	36	70	48	19	2	0	15	:	:	:	0	:	:	1	7	:
1999	57	120	203	28	3	1	21	:	:	:	0	3	:	2	16	0
2000	74	157	259	42	10	3	30	:	:	:	:	5	:	7	28	0

(1) All population data refer to January 1999, source: Eurostat (New Cronos Theme1/cec/cec_c/c_dem/cdem01).
(2) Except for TR all population data for January of the reference year.
Source: Eurostat (New Cronos Theme4/coins/telecom/tel_ser); Eurostat (New Cronos Theme3/demo/dgen/gind) for population data.

INDEX

ICT USAGE IN HOUSEHOLDS

Table 4.1: Computers in households, 2000

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
								Proportion of households having a computer at home (%)								
Desktop	**35**	42	59	32	15	34	29	28	35	45	66	32	20	45	56	36
Laptop	**5**	7	11	5	1	3	5	5	1	10	18	7	3	7	11	8
Palm computer or personal organiser	**3**	3	2	2	3	2	3	3	2	8	9	3	2	1	4	6
								Proportion of persons using a desktop computer at home (%)								
Desktop	**29**	31	54	28	11	27	24	22	26	32	61	30	18	37	50	32

Source: Eurobarometer 53, April/May 2000.

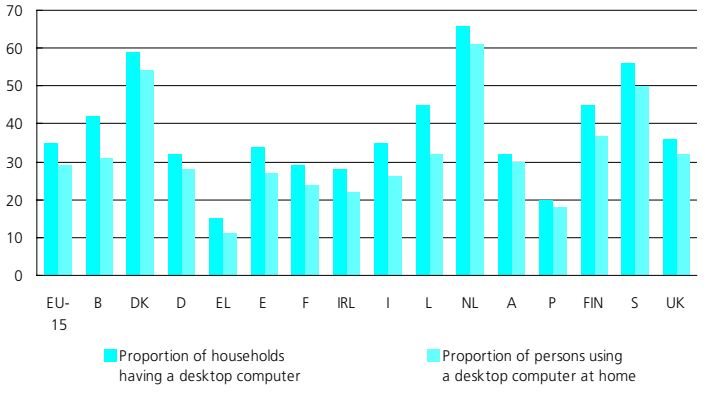
Computers in households

As regards the ownership and use of computers in households the EU Member States showed significantly diverging figures. In the Netherlands 66% of households had a desktop computer in Spring 2000 and Dutch households also had most laptops and palm computers or personal organisers. High levels of availability of desktop computers were also recorded in Denmark and Sweden.

Low levels of computer availability in households were recorded in Greece, Portugal, Ireland and France, all below 30%, although the availability of laptops and palm computers or personal organisers was equal to the EU average in both France and Ireland.

Growth in the penetration rate of computers is believed to be in the order of 10% per year in most EU Member States. Desktop or laptop computers are still the most common means of Internet access - in November 2001 98% of households with Internet access used one of these two kinds of terminals.

Figure 4.1: Availability and use of desktop computers, 2000 (%)



Source: Eurobarometer 53, April/May 2000.

Table 4.2: Households with Internet connections

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Proportion of households having an Internet connection (%)																		
April/May 2000	**18**	20	45	14	6	10	13	17	19	27	46	17	8	28	48	24	:	:
October 2000	**28**	29	52	27	12	16	19	36	24	36	55	38	18	44	54	41	:	:
November 2001	**38**	36	59	38	10	25	30	48	34	43	64	47	26	50	61	49	:	:
Proportion of persons using an Internet connection at home (%)																		
November 2001	**33**	30	55	36	7	20	27	40	25	38	59	43	22	47	54	43	:	:
Proportion of households having an ISDN line (%)																		
November 2001	**16**	9	19	46	10	3	1	5	9	49	18	24	3	13	3	5	:	:

Source: Eurobarometer 53, April/May 2000; Flash Eurobarometer 88, October 2000; Flash Eurobarometer 112, November 2001.

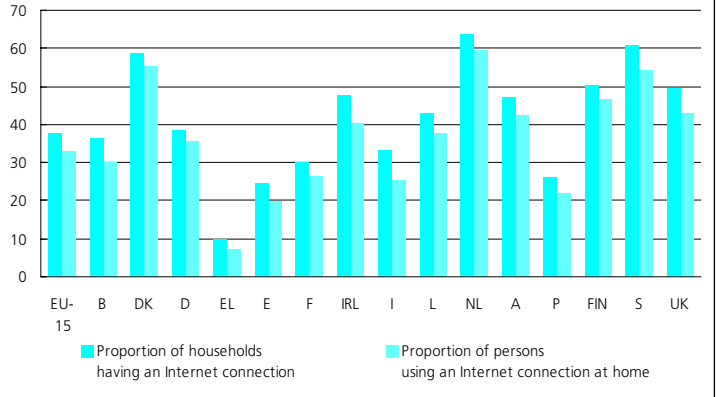
Households with Internet connections

According to Eurobarometer data, in November 2001, Dutch households and households in Nordic countries were those with the highest Internet penetration, all recording more than 50% of households with an Internet connection. The lowest rates of Internet penetration were recorded in Greece (10%), some way behind Spain (25%) and Portugal (26%).

In most cases data from national sources for 2001 indicate lower Internet penetration rates than recorded by the Eurobarometer surveys: Denmark (54%), France (18%), Luxembourg (48%), Portugal (13%), Finland (37%) and the United Kingdom (39%).

Between the Eurobarometer surveys of April/May 2000 and November 2001, Portugal recorded the highest growth in the Internet penetration rate from just 8% of households connected to 26%. Ireland, Austria and Germany also saw very rapid increases. The lowest growth in percentage terms was unsurprisingly recorded in those countries that had already high Internet penetration rates, notably Sweden, the Netherlands and Denmark.

Figure 4.2: Internet connections, 2001 (%)



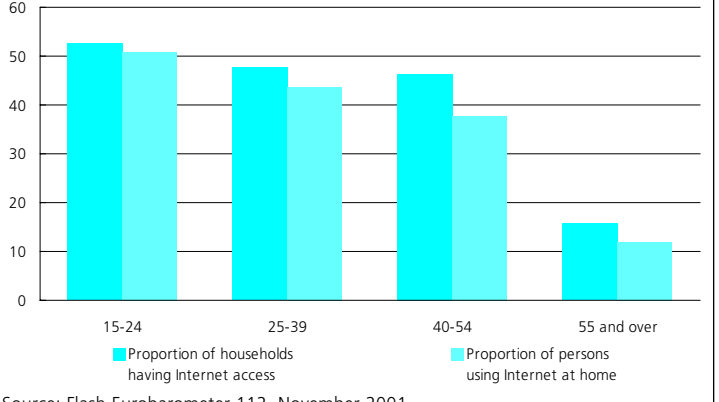
Source: Flash Eurobarometer 112, November 2001.

Table 4.3: Proportion of households having access and persons using Internet, EU-15, 2001 (%)

		Have	Use
Occupation	Farmer	37	35
	Self-employed and managers	62	56
	Office worker	50	44
	Manual worker	33	30
	Retired person	12	9
	Housewife	24	14
	Student	59	58
Age	15-24	53	51
	25-39	48	44
	40-54	46	38
	55 and over	16	12
Education	Finished before 16 years old	17	12
	Finished between 16 and 20 years old	41	35
	Finished after 20 years old	60	57
Sex	Male	43	40
	Female	33	26

Source: Flash Eurobarometer 112, November 2001.

Figure 4.3: Breakdown of Internet access and use by age groups, EU-15, 2001 (%)



Source: Flash Eurobarometer 112, November 2001.

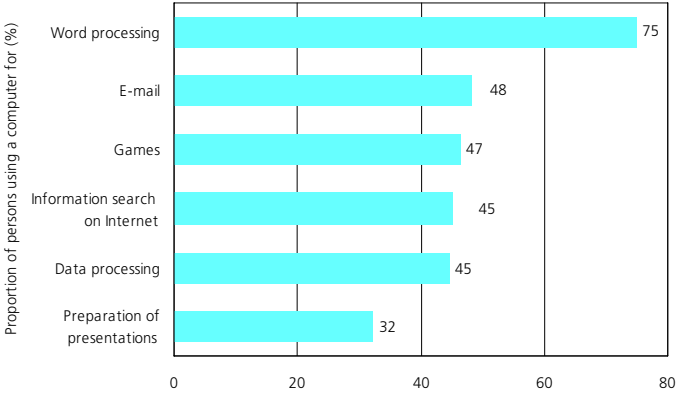
Purpose of computer/Internet use

Not withstanding the significant increase in the usage of computers over the past few years, word processing remains the most commonly used application - in October/November 2000 three-quarters of people reported using them for this purpose. The next most common purposes of computer use are for e-mail and games. E-mail is popular because of its relatively low cost compared to phone calls, its speed of transmission and its potential to deliver large amounts of data of a different nature (for example text, sound, images).

The use of the Internet for gathering information follows closely behind games use and just ahead of data processing.

At the end of 2001 Internet use at home was highest among students and self-employed/managers. Internet use was generally higher among men than women, and increased with the level of education. Although younger people (aged 15 to 24) had the highest Internet usage rates, usage is generally quite high across all age groups other than those aged 55 and over.

Figure 4.4: Use of computers, EU-15, 2000



Source: Eurobarometer 54, October/November 2000.

Table 4.4: Internet dial-up access costs for a residential user

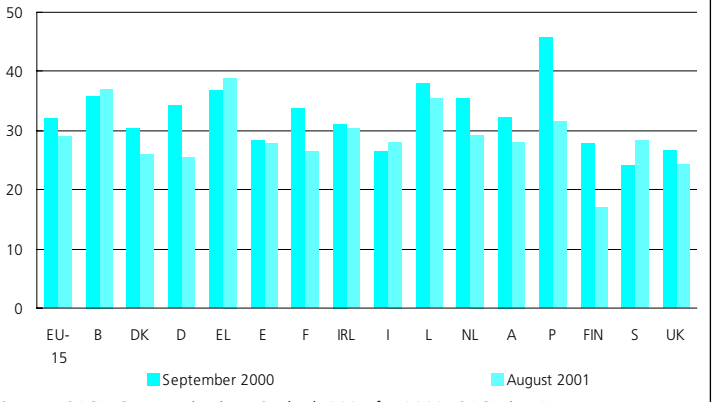
	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
									20 hours/month (USD PPP)									
Peak, 1998	**64**	98	54	68	60	42	72	80	42	73	63	100	61	23	48	70	40	52
Off-Peak, 1998	**46**	47	32	68	60	42	48	51	36	53	40	64	46	20	37	46	40	52
Peak, September 2000	**42**	52	31	34	42	46	34	54	32	59	50	45	47	30	35	41	21	35
Off-Peak, September 2000	**32**	36	31	34	37	28	34	31	26	38	35	32	46	28	24	27	21	35
Off-Peak, August 2001	**29**	37	26	25	39	28	26	30	28	35	29	28	32	17	28	24	21	:
									Rate of change for off-peak prices (%)									
1998 to September 2000	**-30**	-23	-4	-50	-39	-33	-30	-39	-26	-29	-12	-49	-1	41	-34	-42	-46	-31
September 2000 to August 2001	**-10**	3	-15	-26	6	-2	-21	-2	7	-7	-18	-14	-31	-39	17	-9	-3	:

Source: OECD Communications Outlook 2001 for 1998 and 2000; OECD in eEurope benchmarking for 2001.

Internet access costs

Off-peak charges for local Public Switched Telephone Network (PSTN) services are generally less than peak rate charges; this was the case in 2000 in all EU Member States except Denmark, Germany and France. Off-peak charges have fallen in all EU Member States since 1998. Between 1998 and September 2000 the (unweighted) average charges across the EU fell by 30% and fell by another 10% in the following 12 months. The most significant reductions between 1998 and August 2001 were recorded in Germany and Austria where charges fell by more than 50%. The lowest charges in August 2001 were in Finland and the highest in Greece, Belgium and Luxembourg (when measured in PPPs).

Figure 4.5: Internet dial-up access costs for a residential user, off peak rates (USD PPP)



Source: OECD Communications Outlook 2001 for 2000; OECD in eEurope benchmarking for 2001.

ICT USAGE BY ENTERPRISES

Table 5.1: Proportion of enterprises using ICT, first half 2001 (%) (1)

	All (2)	DK	D	EL	E	I	L	NL	A	P	FIN	S	UK	NO
							Computers							
Total	**93**	95	96	85	91	86	91	93	92	89	98	97	92	93
Small and medium	**92**	95	96	84	91	86	90	93	92	89	98	96	92	93
Large	**97**	100	96	98	100	99	99	:	100	99	100	100	100	99
							Web access (end of 2000)							
Total	**75**	87	83	51	67	66	55	79	76	72	91	90	63	73
Small and medium	**74**	86	82	50	66	66	54	77	76	72	91	90	62	73
Large	**90**	99	89	84	97	94	70	:	91	94	97	99	90	94
							Own web site							
Total	**46**	63	67	29	7	9	41	47	54	30	60	68	50	47
Small and medium	**44**	62	65	28	6	9	39	43	53	30	58	67	49	47
Large	**80**	89	86	54	35	22	67	:	86	59	93	91	80	79

Total covers enterprises with 10 or more persons employed.
Small and medium covers enterprises with 10 to 249 persons employed.
Large covers enterprises with 250 or more persons employed.

(1) Activity coverage is NACE Sections D and G to K.
(2) All is the weighted average for Member States with data available in the table for each variable.
Source: Eurostat e-commerce survey 2001.

E-commerce survey

All of the data presented in chapter 5 apart from that on pages 72 and 73 come from a recent pilot study on e-commerce. As a pilot study the coverage in terms of the target population and the detailed list of questions asked by each statistical authority varied. The differences in the data set in terms of the activities included and the size of enterprises surveyed are in some cases significant and this should be borne in mind when interpreting the data. The following tables indicate the main differences in the coverage of the data presented up to and including page 71:

The results cover NACE Sections D and G to K except:

DK	Includes NACE Section F and Division 93 and excludes Section J.
D	Excludes NACE Sections D, I, J and K.
I	Excludes NACE Section J.
FIN	Includes NACE Section F and excludes Section J.
UK	Includes NACE Section F.
NO	Includes NACE Section F and Division 93 and excludes Section J.

Size class breakdown exceptions:

NL	Results reported for small and medium-sized enterprises in fact only cover small enterprises and hence exclude enterprises with between 50 and 249 persons employed.

Whenever an average is presented for several Member States (referred to in the tables as "All") it is an average of the available data. As a result the averages provide an indication for each particular variable presented but these can not be compared within a table or across tables without first checking to see if data for the same Member States are present. Furthermore, any divergences from the standard activity and size coverage definitions within individual Member States that are used to compile averages are also present in the average. For example, averages including the United Kingdom will include data for Section F for the United Kingdom. Averages have been calculated using the number of enterprises to weight the Member State data.

Table 5.2: Proportion of enterprises using e-commerce for purchases, first half 2001 (%) (1)

	All (2)	DK	D	EL	E	I	L	NL	A	P	FIN	S	UK	NO
e-commerce used														
Total	**27**	37	37	5	9	10	19	40	15	11	35	31	33	36
Small and medium	**25**	36	35	5	9	10	18	38	14	11	34	31	32	35
Large	**47**	66	51	8	20	21	28	:	30	21	45	37	50	72
Internet e-commerce used for more than 2 years														
Total	**3**	:	5	1	3	2	5	:	4	3	:	:	:	:
Small and medium	**3**	:	5	1	3	2	5	:	4	2	:	:	:	:
Large	**2**	:	2	1	3	3	8	:	7	5	:	:	:	:
Internet e-commerce planned for 2001														
Total	**8**	3	9	5	18	1	7	4	14	7	11	:	9	:
Small and medium	**8**	3	9	5	18	1	6	3	14	7	11	:	9	:
Large	**10**	5	9	11	23	5	15	:	18	8	22	:	14	:

Total covers enterprises with 10 or more persons employed.
Small and medium covers enterprises with 10 to 249 persons employed.
Large covers enterprises with 250 or more persons employed.

(1) Activity coverage is NACE Sections D and G to K.
(2) All is the weighted average for Member States with data available in the table for each variable.
Source: Eurostat e-commerce survey 2001.

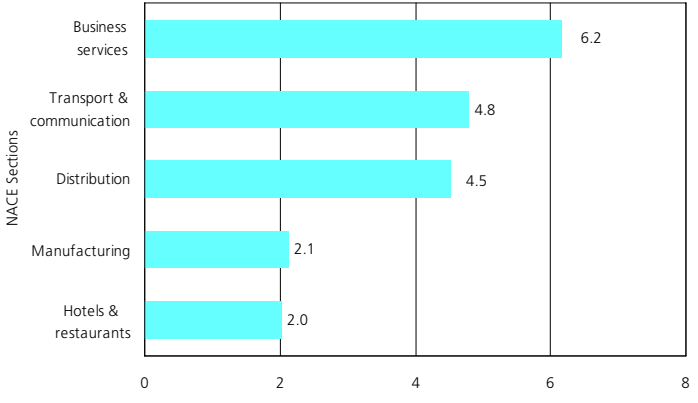
Enterprise e-purchasing

Over one-quarter of surveyed enterprises (27%) used e-commerce (via EDI and Internet) to purchase at least some of the goods and services they needed for their activity. In addition, some 8% of enterprises had plans to introduce e-purchasing via Internet during 2001.

Internet has been a recent development in the procurement strategy of most enterprises. By the first half of 2001 most enterprises using e-purchasing via Internet had only been using this channel for less than two years and only 3% for more than two years.

One of the most notable developments in e-commerce in the late 1990s has been the emergence of B2B marketplaces, aiming at facilitating transactions between enterprises. These consist of specialised sites that allow buyers and suppliers to meet each other virtually and to trade. Marketplaces may be public ones with several suppliers and several customers participating or private ones where one customer establishes a marketplace to be used by many or all of its suppliers. The results of the pilot survey show that 5% of enterprises declared using B2B marketplaces to make purchases with those in business services most active.

Figure 5.1: Proportion of enterprises using specialised B2B marketplaces for purchases, first half 2001 (%) (1)



(1) Size coverage is enterprises with 10 or more persons employed; weighted average of results for DK, EL, E, I, L, NL, A, P, FIN and UK.
Source: Eurostat e-commerce survey 2001.

Table 5.3: Proportion of enterprises using Internet e-purchasing for specified processes, first half 2001 (%) (1)

	All (2)	DK (3)	D	EL	E	I	L	NL	A	P	FIN (3)	S (3)	NO
							Ordering						
Total	**19**	34	30	5	9	8	18	40	14	10	35	54	36
Small and medium	**18**	34	29	5	8	8	17	38	13	10	34	53	35
Large	**34**	62	40	6	16	17	25	:	25	16	45	71	72
							Payment						
Total	**7**	17	8	1	3	5	8	16	5	4	10	48	15
Small and medium	**7**	17	8	1	3	5	8	15	5	4	10	48	15
Large	**7**	37	7	3	8	9	14	:	7	6	12	34	30
							Electronic delivery						
Total	**7**	47	6	1	4	4	6	16	3	2	46	64	:
Small and medium	**6**	46	6	1	4	3	6	15	3	2	44	64	:
Large	**6**	73	4	1	9	8	11	:	6	5	74	87	:

Total covers enterprises with 10 or more persons employed.
Small and medium covers enterprises with 10 to 249 persons employed.
Large covers enterprises with 250 or more persons employed.

(1) Activity coverage is NACE Sections D and G to K.
(2) All is the weighted average for Member States with data available in the table for each variable.
(3) Data for electronic delivery relate to the share of enterprises receiving goods and services in digital form, regardless of whether they have been purchased or not.
Source: Eurostat e-commerce survey 2001.

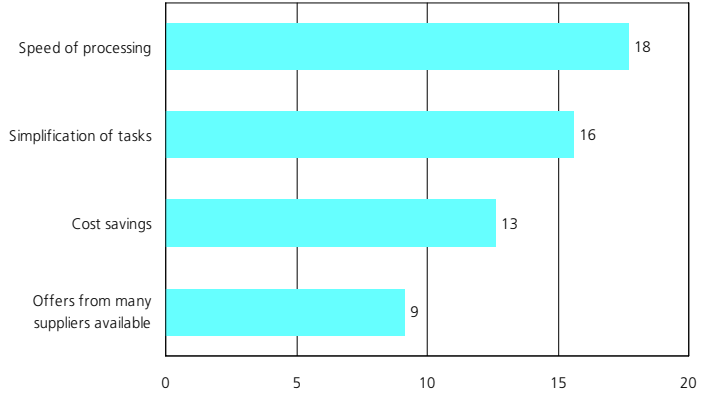
E-purchasing processes and benefits

E-commerce may be used at several different stages of a transaction, including ordering, payment and electronic delivery. Note that for the e-commerce pilot survey sending or receiving orders via manually written e-mails was not considered as e-commerce.

By the first half of 2001 some 19% of enterprises declared having ordered goods or services via the Internet. Electronic payment may require specific efforts, including building a secure environment and establishing trust. This may partly explain why electronic payment was generally much less frequent than ordering - only 7% of enterprises paid via Internet for the goods and services purchased.

Enterprises value the speed of processing (18%) and the simplification of tasks (16%) as the main benefits of this form of procurement, ahead of cost savings (13%), although cost savings may also be achieved indirectly from the other benefits. It should be noted that only enterprises making e-commerce purchases (27% of all enterprises) answered the questions about the perceived benefits, however the figures expressed in this publication are expressed as a percentage of all enterprises.

Figure 5.2: Proportion of respondents citing various benefits of e-purchasing as very important or of some importance, first half 2001 (%) (1)



(1) Activity coverage is NACE Sections D and G to K; size coverage is enterprises with 10 or more persons employed; weighted average of results for D, EL, E, I, L, A, P and UK.

Source: Eurostat e-commerce survey 2001.

Table 5.4: Proportion of enterprises using e-commerce for sales, first half 2001 (%) (1)

	All (2)	DK	D	EL	E	I	L	NL	A	P	FIN	S	UK	NO
Use of e-commerce														
Total	**19**	28	30	6	6	3	9	36	12	6	14	11	16	10
Small and medium	**17**	27	28	6	6	3	8	36	11	6	13	11	16	10
Large	**42**	46	48	13	24	8	27	:	26	19	26	19	35	27
Internet e-commerce used for more than 2 years														
Total	**2**	:	4	1	1	1	2	:	3	1	:	:	:	:
Small and medium	**2**	:	4	1	1	1	2	:	3	1	:	:	:	:
Large	**4**	:	5	3	6	1	7	:	7	4	:	:	:	:
Internet e-commerce planned for 2001														
Total	**11**	13	13	5	14	2	7	7	16	6	13	17	12	:
Small and medium	**10**	13	12	5	14	2	7	6	16	6	13	17	12	:
Large	**16**	25	16	6	15	7	5	:	22	5	21	27	18	:

Total covers enterprises with 10 or more persons employed.
Small and medium covers enterprises with 10 to 249 persons employed.
Large covers enterprises with 250 or more persons employed.

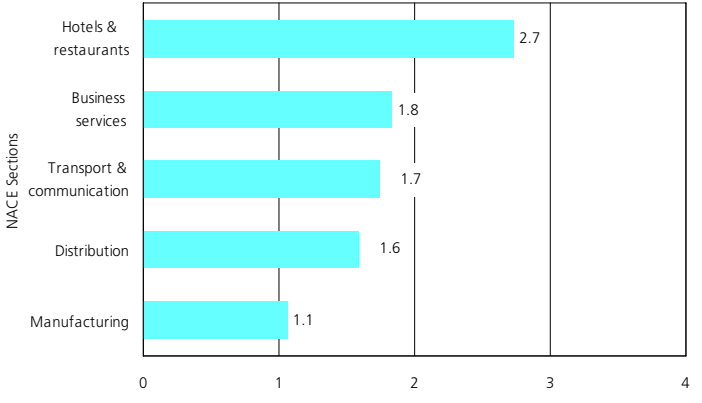
(1) Activity coverage is NACE Sections D and G to K.
(2) All is the weighted average for Member States with data available in the table for each variable.
Source: Eurostat e-commerce survey 2001.

Enterprise e-sales

The e-commerce pilot survey shows that enterprises were generally less active in selling than in purchasing by electronic means. Indeed, only 19% of surveyed enterprises declared using e-commerce to make sales (using EDI and/or Internet) by the first half of 2001. However, 11% of enterprises had plans to start using Internet e-commerce as a channel for sales in 2001.

The use of B2B marketplaces is one area of e-commerce that is expected to benefit from enterprises' attention to reducing transaction costs, either with their suppliers or with their customers. Direct benefits may come from a more direct relationship with upstream manufacturers cutting out intermediaries (disintermediation) and indirect benefits may be derived through a reduced need to hold stocks, as orders can be processed faster. The pilot survey indicated that approximately 4% of enterprises declared having used B2B marketplaces to make sales by the first half of 2001. Enterprises in financial services are amongst the most active users of these marketplaces but are not shown in figure 5.3 because of a lack of data comparability.

Figure 5.3: Proportion of enterprises using specialised B2B marketplaces for sales, first half 2001 (%) (1)



(1) Size coverage is enterprises with 10 or more persons employed; weighted average of results for DK, EL, E, E, I, L, NL, A, P and UK.
Source: Eurostat e-commerce survey 2001.

Table 5.5: Proportion of enterprises using Internet e-sales for specified processes, first half 2001 (%) (1)

	All (2)	DK	D	EL	E	I	L	NL	A	P	FIN	S	NO
						Product information							
Total	**14**	:	26	6	5	2	8	46	11	5	29	:	44
Small and medium	**13**	:	25	6	4	2	7	43	10	5	28	:	43
Large	**32**	:	41	10	17	6	26	:	22	12	50	:	76
						Taking orders							
Total	**12**	24	22	5	4	2	7	36	11	4	14	17	17
Small and medium	**11**	24	20	5	4	2	6	36	10	3	13	17	17
Large	**29**	29	37	9	11	5	22	:	20	9	26	26	27
						Electronic delivery							
Total	**2**	7	2	1	1	0	2	10	1	1	:	4	4
Small and medium	**2**	7	2	1	1	0	1	10	1	1	:	4	4
Large	**3**	13	3	3	7	1	10	:	4	1	:	7	11

Total covers enterprises with 10 or more persons employed.
Small and medium covers enterprises with 10 to 249 persons employed.
Large covers enterprises with 250 or more persons employed.

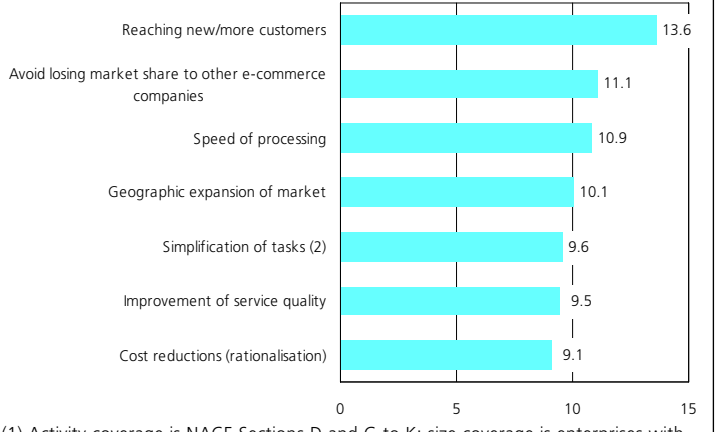
(1) Activity coverage is NACE Sections D and G to K.
(2) All is the weighted average for Member States with data available in the table for each variable.
Source: Eurostat e-commerce survey 2001.

E-sales processes and benefits

Using e-commerce for selling may range from the simple presentation of the company and its products over the Internet to more developed interfaces allowing the taking of orders and receipt of payments and, if possible, the delivery of products. In the first half of 2001 giving information on products (14%) and prices (11%) and taking orders (12%) were the three most frequent e-sales processes used by enterprises over the Internet, whilst receiving payments (3%) and electronic delivery (2%) were the least used.

As regards the benefits of e-sales, embracing this channel of distribution is seen as much as a decision to conquer new markets, in the form of new customers (14%) or new territories (10%), as a reactive move in response to competitors' strategies with a view to avoid losing markets (11%). Improved processing speed was also cited by more than one in ten enterprises as a benefit of e-sales. It should be noted that only enterprises making e-commerce sales (19% of all enterprises) answered the questions about the perceived benefits, however the figures expressed in this publication are expressed as a percentage of all enterprises.

Figure 5.4: Proportion of respondents citing various benefits of e-sales as very important or of some importance, first half 2001 (%) (1)



(1) Activity coverage is NACE Sections D and G to K; size coverage is enterprises with 10 or more persons employed; weighted average of results for D, EL, E, E, I, L, A, P FIN, S and UK. (2) Excluding FIN and S.
Source: Eurostat e-commerce survey 2001.

Table 5.6: Secure servers

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
									Number of secure servers per 1 million inhabitants									
July 1998	**8**	5	8	6	1	6	4	15	3	26	8	12	3	13	16	12	55	3
July 1999	**17**	16	21	20	5	11	11	26	8	60	19	30	6	35	46	29	117	9
July 2000	**38**	26	54	46	8	19	22	65	14	100	34	55	12	66	91	74	238	23
July 2001	**65**	42	98	78	17	30	33	123	22	155	67	109	19	127	142	132	312	63
									Annual growth of the number of secure servers per 1 million inhabitants (%)									
1999	**116**	205	153	231	499	80	185	71	161	132	139	145	118	163	180	141	115	171
2000	**118**	68	157	131	81	75	104	150	84	67	76	85	96	90	99	153	103	147
2001	**73**	61	81	71	102	57	52	91	59	55	97	97	66	92	55	80	31	174

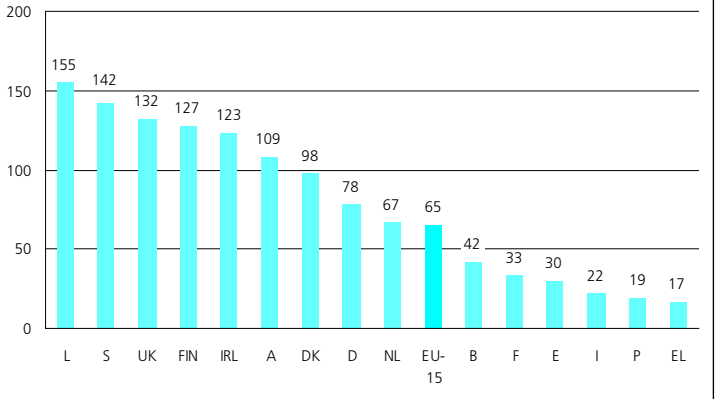
Source: OECD and Netcraft (www.netcraft.com), December 2001.

Secure servers

Secure servers allow users to encrypt information (for example credit card data) that facilitates e-Commerce. In July 2001, there were approximately 65 secure servers in the EU for every million inhabitants, an increase of 73% compared to one year earlier and an eight-fold increase compared to July 1998. The USA recorded nearly five times as many secure servers relative to its population than the EU, although growth in the USA was slower in 2001 at 31%. The density of secure servers relative to population was approximately the same in Japan as in the EU in 2001 and this was due to relatively recent growth, 174% in 2001 and 147% in 2000.

Among the EU Member States the highest density of secure servers relative to population were found in Luxembourg, Sweden, the United Kingdom, Finland, Ireland and Austria, all with more than 100 secure servers per million inhabitants.

Figure 5.5: Number of secure servers per 1 million inhabitants, July 2001



Source: OECD and Netcraft (www.netcraft.com), December 2001.

ICT AND EDUCATION, GOVERNMENT AND HEALTH

Table 6.1: Public Internet Access Points (PIAPs)

	EU-15	B	DK	D	EL	E (1)	F	IRL	I	L (1)	NL	A (2)	P	FIN	S	UK
Number of PIAPs																
2000	:	601	781	4,700	110	1,420	1,603	590	:	:	1,050	342	:	2,380	989	1,763
2001	:	601	843	5,800	210	1,935	2,800	2,062	4,724	7	4,312	530	801	:	3,440	4,318
Number of PIAPs per 1,000 inhabitants																
2000	:	0.06	0.15	0.06	0.01	0.04	0.03	0.16	:	:	0.07	0.04	:	0.46	0.11	0.03
2001	:	0.06	0.16	0.07	0.02	0.05	0.05	0.54	0.08	0.02	0.27	0.07	0.08	:	0.39	0.07

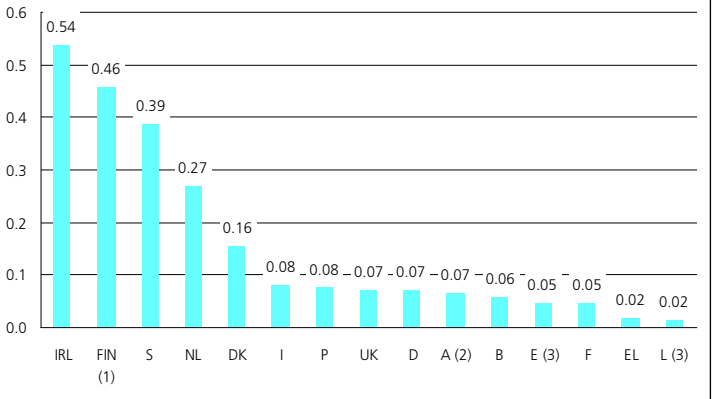
(1) Libraries only.
(2) Most categories of PIAPs refer only to Vienna (approximately one-fifth of the Austrian population).
Source: ESDIS, January 2002 for PIAPs; Eurostat (New Cronos Theme3/demo/dgen/gind) for population.

Public Internet Access Points

The provision of public Internet Access Points (PIAP) is one of the efforts to assist participation in the information society. PIAPs provide an opportunity for access to the Internet to all parts of the population, particularly to those that are less likely to benefit from the availability of the Internet at work or in academic institutions and feel that they can not afford it at home.

Relative to the size of the population, in 2001 these were most common in Ireland, Finland (data for 2000), Sweden and the Netherlands. They were least common in Luxembourg, Greece and France.

Figure 6.1: Number of PIAPs per 1,000 inhabitants, January 2001



(1) 2000. (2) Most categories of PIAPs refer only to Vienna (approximately one-fifth of the Austrian population). (3) Libraries only.
Source: ESDIS, January 2002 for PIAPs;
Eurostat (New Cronos Theme3/demo/dgen/gind) for population.

Table 6.2: Schools with computers/Internet connection, responses from headteachers, June 2001

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Number of computers per 100 pupils (units)																
Primary	**7**	9	24	4	2	7	6	9	5	46	12	9	4	13	10	9
Secondary	**11**	12	67	7	6	7	11	12	11	16	11	12	6	15	23	16
Proportion of schools linked to the Internet (%)																
Primary	**84**	90	98	90	22	91	63	96	87	86	91	53	56	99	100	93
Secondary	**96**	96	99	98	58	95	97	99	98	100	100	95	91	99	100	98
Number of computers connected to the Internet per 100 pupils (units)																
Primary	**3**	3	17	2	1	3	2	3	2	18	2	3	2	8	7	4
Secondary	**7**	7	50	4	2	4	5	8	5	15	7	10	3	13	20	11

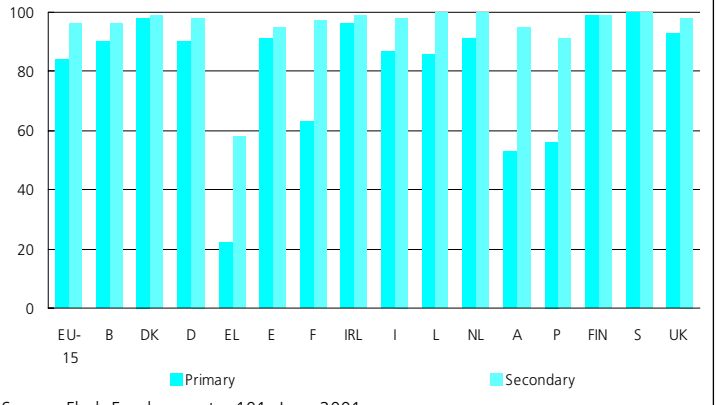
Source: Flash Eurobarometer 101, June 2001.

Schools with computers/Internet

In June 2001, 84% of primary schools in the EU were connected to the Internet as well as 96% of secondary schools. Rates in excess of 80% for primary schools were recorded in all Member States except Greece, Austria, Portugal and France. There was a much narrower range between the Member States in the proportion of secondary schools linked to the Internet and all recorded a connection rate above 90% except Greece. The eEurope 2002 Action Plan had the goal for all schools to be connected by the end of 2001.

An alternative indicator, the number of Internet connected computers per 100 pupils, gives an idea of the ease of access by students to the Internet. With the exception of Luxembourg all Member States recorded a greater ratio of Internet connected computers to pupils in secondary schools than in primary schools. For secondary schools values for this indicator generally ranged from 2 Internet connected computers per 100 pupils in Greece to 20 in Sweden with Denmark lying well above this range (50).

Figure 6.2: Proportion of schools linked to the Internet, June 2001 (%)



Source: Flash Eurobarometer 101, June 2001.

Table 6.3: Science and technology graduates

	EU-15	B	DK	D	EL	E	F	IRL	I	L (1)	NL	A (2)	P	FIN	S	UK	US	JP
Proportion of 20-29 year olds that were new graduates in 2000 (per thousand)																		
1996	:	28	40	29	18	30	:	64	20	:	37	15	24	44	27	52	69	57
1997	:	:	41	30	21	34	59	63	19	:	:	18	:	64	30	55	:	:
1998	:	27	42	31	:	37	61	70	21	7	35	18	:	61	30	58	57	:
1999	:	28	45	31	:	41	62	:	23	:	35	23	:	60	35	61	57	:
2000	:	51	:	31	:	40	:	67	:	12	37	24	35	:	38	65	59	:
Proportion of 20-29 year olds that were new science and technology graduates in 2000 (per thousand)																		
1996	:	:	9	9	:	7	:	22	4	:	7	4	4	13	7	14	12	12
1997	:	:	:	9	:	8	17	22	5	:	:	4	:	16	8	15	:	:
1998	:	:	8	9	:	8	18	22	5	1	6	8	:	16	8	15	10	:
1999	:	:	8	9	:	10	19	:	6	:	6	7	:	18	10	16	10	:
2000	:	10	:	8	:	10	:	23	:	2	6	7	6	:	12	16	10	:

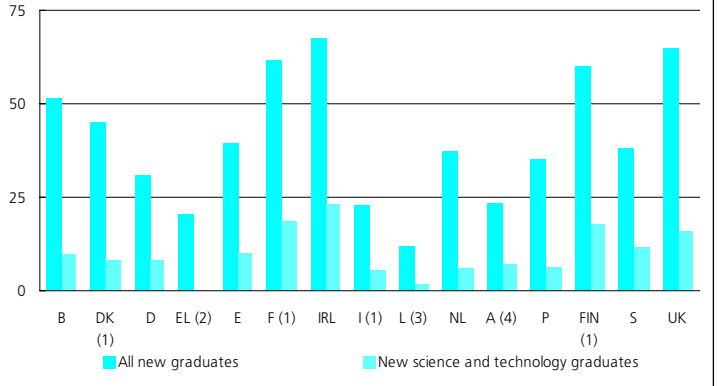
(1) L does not have a complete university system; refers only to ISCED 5B first qualification.
(2) 1996 ISCED 5 is from previous year; 1997 refers partly to 1995/96; 1998-2000 includes ISCED 5B but refers partly to two previous years.
Source: Joint UNESCO-OECD-EUROSTAT data collection (UOE) questionnaires on educational finance and on graduates.

Science and technology graduates

When looking at the overall proportion of new graduates in 2000, the Member States that record the highest figures are also among those which have the shortest duration of university degrees, explaining at least in part why they witness a greater number of students completing their academic courses by a certain age.

Approximately one-third of new graduates in 2000 were graduates in science and technology subjects in Ireland, Sweden, France, Austria and Finland.

Figure 6.3: Intensity of graduate output: proportion of 20-29 year olds that were new graduates in 2000 (per thousand)



(1) 1999. (2) 1997; science and technology graduates not available. (3) L does not have a complete university system; refers only to ISCED 5B first qualification. (4) ISCED 5B refers partly to two previous years.
Source: Joint UNESCO-OECD-EUROSTAT data collection (UOE) questionnaires on educational finance and on graduates.

Table 6.4: Computer or Internet training, June 2001

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
								Proportion of persons having received training (%)								
Computers	**34**	36	51	39	21	24	33	49	16	31	37	37	21	59	54	46
Internet	**12**	13	25	13	8	12	9	20	4	12	10	18	7	36	31	18
								Source of training (%)								
Primary or secondary school	**23**	27	18	23	35	22	22	22	34	23	16	36	19	36	26	18
Higher education	**18**	22	18	17	23	14	14	28	7	12	17	8	24	17	10	31
Through an employer	**46**	45	48	52	14	27	54	39	30	46	46	37	29	46	54	51
Own initiative	**36**	46	27	45	37	45	31	41	34	33	41	28	40	29	22	28

Source: Flash Eurobarometer 103, June 2001.

Table 6.5: Computers at work, November 2001

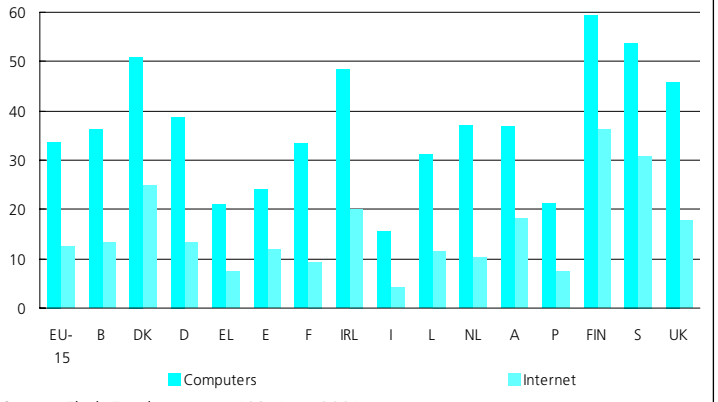
	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
								Proportion of workers using or trained in computers (%)								
Computer training at work	**31**	:	55	:	18	20	26	:	21	39	40	36	:	:	48	37
Use computers at work	**53**	:	73	:	36	42	45	:	58	66	65	57	:	:	71	59

Source: Eurobarometer November 2001, in eEurope benchmarking results 2001.

ICT training

In June 2001 34% of respondents in a survey of the general public reported that they had received training in the use of a computer and 12% in the use of the Internet. Levels of training were particularly high in the Nordic Member States, Ireland and the United Kingdom. In the three Nordic Member States the proportion of the general public having received training in the use of the Internet was particularly high, equal to or above one-quarter. In the EU as a whole the most common source of these training courses was from employers followed by courses taken at the initiative of the individual. Either one or the other of these two was the main source of training in all of the Member States, although primary or secondary school courses were also a common source in Finland, Austria, Greece and Italy.

Figure 6.4: Proportion of persons having received training, June 2001 (%)



Source: Flash Eurobarometer 103, June 2001.

Table 6.6: e-Government, November 2001

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Proportion of persons having used the Internet to contact public services (%)																
June 2001	**43**	47	57	41	34	42	49	35	42	42	46	39	31	42	63	38
November 2001	**45**	50	63	43	42	42	55	36	44	43	47	50	28	36	67	37
Proportion of persons having used the Internet to contact public services by purpose, November 2001 (%)																
Find administrative information	**35**	34	55	32	24	37	46	24	39	40	35	44	20	26	54	26
Send them an e-mail	**20**	35	33	18	23	11	26	20	17	22	17	30	8	15	47	17
Fill-in forms	**22**	18	39	25	9	12	24	18	19	16	23	19	13	23	43	19
Other	**1**	1	2	1	3	1	3	1	0	0	1	1	0	2	0	2
Never contacted by Internet	**54**	46	37	55	58	57	45	63	55	56	51	45	71	64	31	62

Source: Flash Eurobarometer 112, November 2001.

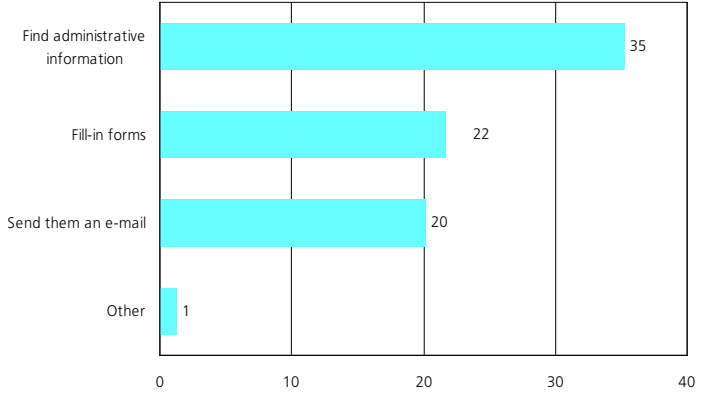
e-Government

In November 2001 45% of persons in the EU had contacted public services using the Internet. Some 35% of them used the Internet to find administrative information, while the second most common reason was to fill-in forms - 22% of people. The use of the Internet to send public services an e-mail was the third most common use.

A study by Cap Gemini Ernst & Young for the European Commission in April 2002 looked at the on-line availability of twenty basic services. It reported that 55% of these services were available on-line in the EU, compared to 45% in October 2001. The proportion was higher (68%) for business services than for services to citizens (47%).

The same study showed that Ireland (85%) and Sweden (81%) lead the way in the on-line provision of these services, followed by Finland (70%) and Denmark (69%). At the other end of the ranking, 22% of the were available on-line in Luxembourg. All of the other Member States were in the range of 42% to 63%.

Figure 6.5: Proportion of persons having used the Internet to contact public services by purpose, November 2001 (%)



Source: Flash Eurobarometer 112, November 2001.

Table 6.7: e-Health, June/July 2001

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
General practitioners (GPs) with a computer connected to the Internet or dedicated GP network (%)																
Proportion of GPs connected to the Internet or other network	**76**	77	88	56	52	60	90	67	72	69	100	79	53	100	95	92
GPs with Internet or dedicated GP network using these for the following procedures (%)																
Access information for continuing education	**70**	72	59	79	83	85	56	83	86	78	61	72	74	76	46	78
Access medical associations' web-sites for doctor to doctor information	**62**	66	51	78	57	76	43	66	76	62	36	61	62	64	49	75
Consulting medical journals	**61**	67	66	62	67	79	47	73	74	81	49	53	67	67	43	74
Search for information on prescriptions	**50**	45	42	52	59	80	30	37	65	70	53	52	69	39	38	57
Exchanging views with other doctors	**26**	29	29	15	32	32	19	20	42	35	34	27	26	32	23	33
Exchanging patient identifiable data	**22**	47	64	13	15	32	17	13	15	24	52	42	10	11	15	23

Source: Flash Eurobarometer 104, June/July 2001.

e-Health

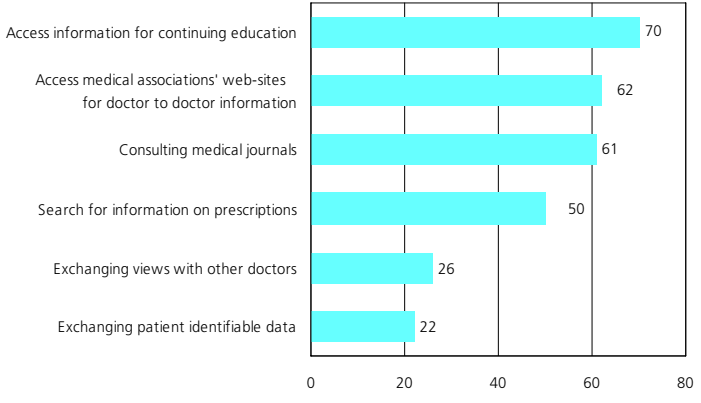
In June/July 2001 76% of general practitioners (GPs) in the EU had a computer connected to the Internet or to a dedicated GP network. More than two-thirds (70%) of GPs with such connections had used this to access information for continuing education. Amongst the other reasons for using these networks that were investigated, accessing medical associations web-sites and consulting medical journals were the next most common uses, each used by just over 60% of connected GPs.

Among the Member States the most notable differences in the use of these networks were:

- the high use for searching for prescription information in Spain (80% of connected GPs);
- the high use for exchanging patient identifiable data in Denmark, the Netherlands and Belgium (64%, 52% and 47% of connected GPs respectively).

In general connected GPs in Spain appear to make great use of their connection for the reasons investigated (although only 60% were connected) while those in France and Sweden (with 90% or more connected) do not.

Figure 6.6: GPs with Internet or dedicated GP network using these for the following procedures, June/July 2001 (%)



Source: Flash Eurobarometer 104, June/July 2001.

COMPLEMENTARY INFORMATION

List of sources

The following tables present the sources used in this pocketbook.

List A: European Commission
List B: National statistical offices
List C: Inter-governmental organisations
List D: Non-governmental sources

For each statistical source the web address and/or relevant publications are mentioned if available.

A. European Commission

Directorate-General	General web address	Sources used
Eurostat - DG ESTAT	http://www.europa.eu.int/comm/dgs/eurostat/index_en.htm	New Cronos - reference database Comext - reference database e-commerce (Ecomm) - production database Labour force survey (LFS) - production database Joint UNESCO-OECD-EUROSTAT data collection (UOE) questionnaires on educational finance and on graduates - production database EC economic data pocket book, 7-8 2002
Directorate-General information society - DG INFSO	http://www.europa.eu.int/information_society/index_en.htm	DG INFSO publishes regular benchmarking reports related to the eEurope Action Plan and data has been drawn from these for this pocketbook. http://www.europa.eu.int/information_society/eeurope/benchmarking/index_en.htm
Directorate-General press and communication - DG PRESS	http://www.europa.eu.int/comm/dgs/press_communication/index_en.htm	DG PRESS coordinates the Eurobarometer series of surveys. http://www.europa.eu.int/comm/public_opinion/archives_en.htm Eurobarometer 53, April/May 2000 "The information society" Eurobarometer 54, October/November 2000 "Information and communication technologies" Eurobarometer, November 2001, in eEurope benchmarking results 2001. Flash Eurobarometer 101, June 2001 "Internet and headteachers" Flash Eurobarometer 103, June 2001 "Internet and the public at large" Flash Eurobarometer 104, June-July 2001 "Internet and General Practitioners" Flash Eurobarometer 112, November 2001 "Internet and the public at large" Flash Eurobarometer 88, October 2000 "Internet and the public at large"

A. European Commission (continued)

Directorate-General	General web address	Sources used
Directorate-General for employment and social affairs - DG EMPL	http://www.europa.eu.int/comm/dgs/employment_social/index_en.htm	DG EMPL has produced several reports related to the information society, in some cases assisted by the high level group "Employment and social dimension of the information society" (ESDIS). http://www.europa.eu.int/comm/employment_social/soc-dial/info_soc/esdis/
Directorate-General for economic and financial affairs - DG ECFIN	http://www.europa.eu.int/comm/dgs/economy_finance/index_en.htm	EC economic data pocket book, 7-8 2002

B. National statistical offices

Country	Source name	Web address
Belgium	Nationaal Instituut voor de Statistiek / Institut National de la Statistique (Statistics Belgium)	http://www.statbel.fgov.be/
Denmark	Danmarks Statistik (Statistics Denmark)	http://www.dst.dk/
Germany	Statistisches Bundesamt (Federal Statistical Office)	http://www.destatis.de/
Greece	National Statistical Service of Greece	http://www.statistics.gr/
Spain	Instituto Nacional de Estadística	http://www.ine.es/
France	Institut National de la Statistique et des Etudes Economiques	http://www.insee.fr/
Ireland	Central Statistics Office	http://www.cso.ie/
Italy	Istituto nazionale di statistica	http://www.istat.it/
Luxembourg	Service central de la statistique et des études économiques	http://www.statec.lu/
The Netherlands	Centraal Bureau voor de Statistiek (Statistics Netherlands)	http://www.cbs.nl/
Austria	Statistik Austria	http://www.statistik.at/
Portugal	Instituto Nacional de Estatística	http://www.ine.pt/
Finland	Tilastokeskus (Statistics Finland)	http://www.stat.fi/

B. National statistical offices (continued)

Country	Source name	Web address
Sweden	Statistiska centralbyrån (Statistics Sweden)	http://www.scb.se/
The United Kingdom	The Office for National Statistics	http://www.statistics.gov.uk/
Norway	Statistisk sentralbyrå (Statistics Norway)	http://www.ssb.no/
Iceland	Hagstofa Íslands (Statistics Iceland)	http://www.statice.is/
Switzerland	Statistik Schweiz	http://www.statistik.admin.ch/
Japan	Statistics Bureau and Statistics Centre	http://www.stat.go.jp/
USA	US Census Bureau	http://www.census.gov/

C. Inter-governmental organisations

Name	General web address	Sources used in this pocketbook	Web address of source
International Telecommunications Union - ITU	http://www.itu.int/home/index.html	ICT free statistics	http://www.itu.int/ITU-D/ict/statistics/
Organisation for Economic Cooperation and Development - OECD	http://www.oecd.org/	Data on cable modem and DSL connections provided directly by OECD OECD Communications outlook 2001 OECD Science, technology and industry scoreboard 2001 OECD Measuring the ICT sector, 2000	OECD publications on ICT: on the homepage select Statistics from the top menu, select Information and communication technologies from the themes (left menu)

D. Non-governmental sources

Name	Sources used in this pocketbook	Web address
European Information Technology Observatory - EITO	EITO 2002	EITO web site: http://www.eito.org/
European Private Equity and Venture Capital Association - EVCA	Yearbook 2000	EVCA web site: http://www.evca.com/html/home.asp
Global research	Global Internet Statistics (by Language)	http://www.glreach.com/globstats/index.php3
Intel	Intel Museum - information on the history of chip making	http://www.intel.com/intel/intelis/museum/exhibit/hist_micro/hof/hof_main.htm
Internet Software Consortium - ISC	Internet domain survey	http://www.isc.org/ds/
Netcraft	Secure server survey	http://www.netcraft.com/ssl/
PricewaterhouseCooper	Technology investment report	PricewaterhouseCooper web-site: http://www.pwcmoneytree.com/
Réseaux IP Européens, Network Coordination Centre - RIPE NCC	Internet statistics - the RIPE region hostcount	http://www.ripe.net/ripencc/pub-services/stats/hostcount/index.html
www.top500.org	TOP500 Supercomputer Sites	http://www.top500.org/

Signs, country abbreviations and country code Top Level Domains (TLD's)

:	not available
0	less than half the unit used

EU-15	European Union (15 countries)	
B	Belgium	.be
DK	Denmark	.dk
D	Germany	.de
EL	Greece	.gr
E	Spain	.es
F	France	.fr
IRL	Ireland	.ie
I	Italy	.it
L	Luxembourg	.lu
NL	the Netherlands	.nl
A	Austria	.at
P	Portugal	.pt
FIN	Finland	.fi
S	Sweden	.se
UK	the United Kingdom	.uk
IS	Iceland	.is

NO	Norway	.no
CH	Switzerland	.ch
US	United States of America	.us
JP	Japan	.jp
BG	Bulgaria	.bg
CY	Cyprus	.cy
CZ	Czech Republic	.cz
EE	Estonia	.ee
HU	Hungary	.hu
LV	Latvia	.lv
LT	Lithuania	.lt
MT	Malta	.mt
PL	Poland	.pl
RO	Romania	.ro
SK	Slovak Republic	.sk
SI	Slovenia	.si
TR	Turkey	.tr

Abbreviations

ADSL	Asymmetric Digital Subscriber Line
B2B	Business to Business
B2C	Business to Consumer
DSL	Digital Subscriber Line
EB	Eurobarometer
EDI	Electronic Data Interchange
ESIS	European Statistical Information System
EUR	Euro (note that EUR is also used in series that were originally compiled in ECU as the exchange rate was 1 ECU to 1 EUR)
GDP	Gross Domestic Product
GP	General Practitioner
GSM	Global System for Mobile communication
HTML	HyperText Markup Language
ICT	Information and Communication Technologies
IP	Internet Protocol
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
LFS	Labour Force Survey
PC	Personal Computer
PIAP	Public Internet Access Point
PSTN	Public Switched Telephone Network
PPP	Purchasing Power Parity
SBS	Structural Business Statistics
SME	Small and Medium-sized Enterprises
TLD	Top Level Domain
UMTS	Universal Mobile Telecommunications System
WAI	Web Accessibility Initiative
WWW	World Wide Web

Classifications

NACE Rev. 1 activities covered by the Information and Communication Technologies sector

ICT manufacturing (part of Sub-section DL):

30: Manufacture of office machinery and computers

31.3: Manufacture of insulated wire and cable

32: Manufacture of radio, television, and communication equipment and apparatus

33.2: Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment

33.3: Manufacture of industrial process control equipment

ICT services (*):

Section G:

51.64: Wholesale of office machinery

Section I:

64.2: Telecommunications

Section K:

72: Computer and related activities

(*) NACE Class 71.33 (renting of office machinery and equipment including computers) is part of ICT services, however SBS data is not available for this activity and hence the data presented between pages 14 and 21 of this publication do not cover this activity.

ICT products

Computers	
847110, 847130, 847141, 847149, 847150, 847160, 847170, 847180, 847190	data processing machines and units (processing, input, output, storage or other) for automatic data-processing machines, including magnetic or optical readers
847330, 847350	parts and accessories for automatic data-processing machines, other machines of heading 8471 or for use with two or more typewriters
Consumer electronics	
851810, 851821, 851822, 851829, 851830, 851840, 851850, 851890	microphones and stands therefor, loudspeakers, headphones, audio-frequency electric amplifiers, electric sound amplifier sets, parts of microphones
851910, 851921, 851929, 851931, 851939, 851940, 851992, 851993, 851999	record-players, turntables, transcribing machines, cassette players and other sound reproducing apparatus
852010, 852020, 852032, 852033, 852039, 852090	sound reproducing devices (telephone answering machines, magnetic tape recorders, cassette recorders) and sound recording equipment
852110, 852190	video recording or reproducing apparatus
Consumer electronics (continued)	
852210, 852290	pick-up cartridges, parts and accessories of sound and video reproducing and recording apparatus
852311, 852312, 852313, 852320, 852390	magnetic tapes and discs, prepared unrecorded media for sound recording or similar recording of other phenomena (excl. magnetic tapes)
852540	still-image video cameras and other video camera recorders
852712, 852713, 852719, 852721, 852729, 852731, 852732, 852739, 852790	radio-broadcast receivers and pocket-size radio/cassette-players, radio-broadcast receivers not capable of operating without an external source of power, receivers for radio-telephony
852812, 852813, 852821, 852822, 852830	television receivers and video monitors, video projectors
Electronic components	
852330, 852460	cards incorporating a magnetic stripe
853210, 853221, 853222, 853223, 853224, 853225, 853229, 853290	fixed capacitors designed for use in 50/60 hz circuits and having a reactive power-handling capacity of >= 0.5 kvar 'power capacitors', fixed electrical capacitors and parts therefor

Electronic components (continued)	
853400	printed circuits
854011, 854012, 854020, 854040, 854050, 854060, 854071, 854072, 854079, 854081, 854089, 854091, 854099	television camera tubes; image converters and intensifiers; photo-cathode tubes, data/graphic display tubes, cathode-ray tubes and parts therefor, magnetrons, klystrons, microwave tubes, receiver or amplifier valves and tubes, electronic valves and tubes, parts of thermionic
854110, 854121, 854129, 854130, 854140, 854150, 854160, 854190	diodes and parts therefor, transistors, thyristors, photosensitive semiconductor devices, semiconductor devices n.e.s., mounted piezo-electric crystals
854212, 854213, 854214, 854219, 854230, 854240, 854250, 854290,	monolithic digital integrated circuits and cards incorporating these, integrated circuits (electronic or hybrid), electronic microassemblies made from discrete parts of electrical capacitors, parts of electronic integrated circuits and microassemblies
854420, 854441, 854449, 854451, 854459, 854470	co-axial cable, electric conductors, optical fibre cables made up of individually sheathed fibres

Instruments	
900110, 900190, 900290	optical fibres, lenses
900620, 900630, 900659	cameras of a kind used for recording documents on microfilm or specially designed for underwater use, cameras for roll film of a width of > 35 mm or for film in the flat (excl. instant print cameras and special cameras of headings 900610)
900711, 900719, 900720, 900791, 900792	cinematographic cameras and projectors and parts and accessories therefor
901210, 901290	electron microscopes and parts and accessories therefor
901310, 901320, 901380, 901390	telescopic sights for fitting to arms; periscopes; telescopes designed to form parts of machines, lasers, liquid crystal devices n.e.s. and other optical appliances and instruments not elsewhere specified in chapter 90, parts and accessories for liquid crystal devices
901410, 901420, 901480, 901490	direction finding compasses, instruments and appliances for aeronautical or space navigation, navigational instruments and apparatus, parts and accessories therefor
901510, 901520, 901530, 901540, 901580, 901590	rangefinders, theodolites and tacheometers; levels, photogrammetrical surveying instruments and appliances, instruments and appliances used in geodesy and parts therefor

Instruments (continued)	
902410, 902480, 902490	machines and appliances for testing metals and the mechanical properties of materials and parts therefor
902580, 902590	hydrometers and similar floating instruments and parts therefor
902620, 902680, 902690	instruments and apparatus for measuring or checking variables of liquids or gases and parts and accessories therefor
902710, 902720, 902730, 902740, 902750, 902780, 902790	gas or smoke analysis apparatus, chromatographs and electrophoresis instruments, spectrometers, exposure meters, parts and accessories for microtomes, instruments and apparatus for physical or chemical analysis
902810, 902820, 902830, 902890	gas, liquid and electricity meters and parts and accessories for gas
902910, 902920, 902990	revolution counters, speed indicators and tachometers, parts and accessories for revolution counters
903010, 903020, 903031, 903039, 903082, 903083, 903089, 903090	instruments and apparatus for measuring or detecting ionizing radiations, cathode-ray oscilloscopes and cathode-ray oscillographs, multimeters for voltage, instruments and apparatus for measuring or checking i) voltage, ii) semiconductor wafers or devices, iii) electrical quantities, iv) electrical quantities, parts and accessories for instruments and apparatus for measuring or checking electrical quantities or for detecting ionizing radiations n.e.s.

Instruments (continued)	
903110, 903120, 903130, 903141, 903149, 903180, 903190	machines for balancing mechanical parts, test benches for motors, profile projectors, optical instruments and appliances for inspecting semiconductor wafers or devices or for inspecting photomasks or reticles used in manufacturing semiconductor devices, instruments and parts and accessories therefor
903210, 903220, 903281, 903289, 903290	thermostats, manostats (excl. taps), regulating or controlling instruments and apparatus and parts and accessories therefor
903300	parts and accessories for machines
Office machinery	
846911, 846912	word-processing machines (excl. items of heading no 8471 and laser), typewriters
847010, 847021, 847029, 847040, 847050, 847090	electronic calculators capable of operation without an external source of power, accounting machines incorporating a calculating device (excl. data-processing machines of heading no 8471), cash registers incorporating a calculating device, postage-franking machines
847310, 847321, 847340	parts and accessories for items of heading no 8469 subheading no 847010 and heading no 8472
900930, 900990, 900911, 900912, 900921, 900922	thermo-copying and photocopying apparatus (excl. thermo-printers), parts and accessories therefor

Telecommunications products	
851711, 851719, 851721, 851722, 851730, 851750, 851780, 851790	telephone sets for line telephony, videophones (excl. entry-phone systems), facsimile machines and teleprinters for line telephony and telegraphy, telephonic or telegraphic switching apparatus, apparatus for carrier-current line systems or digital line systems, electrical apparatus for line telephony or line telegraphy and parts therefor
852510, 852520, 852530	transmission apparatus for radio-telephony or incorporating reception apparatus, television cameras
852610, 852691, 852692	radio navigational aid apparatus, radio remote control apparatus, radar apparatus
852910, 852990	aerials and aerial reflectors of all kinds and parts suitable for use therewith, parts suitable for use solely or principally with transmission and reception apparatus for radio-telephony
880260, 880390	spacecraft and parts of aircraft and spacecraft
903040	instruments and apparatus for measuring or checking electrical quantities

Glossary

- A -

Asymmetrical digital subscriber line: ADSL is a technology that allows the use of a traditional (copper) telephone line to send voice and data in both directions (to and from a user), with a high speed of transmission in one of the directions, normally downstream to the user.

- B -

Bandwidth: the characteristic of a system (for example telephone or network) that indicates the speed at which information can be transferred, effectively the systems capacity. In analogue systems, it is measured in cycles per second (Hertz) and in digital systems in binary bits per second (bps).

Broadband: ADSL, cable, satellite and fixed-wireless (plus in the future UMTS).

B2B e-Commerce: Business to Business e-commerce is e-commerce between enterprises. It may be conducted directly between buyer and seller or through a third party online intermediary.

B2C e-Commerce: Business to Consumer e-commerce is e-commerce between an enterprise and a client who is a private consumer, rather than another enterprise.

- C -

Cable modem: a device that interfaces between coaxial cable television/voice channel and home computing equipment in order to provide Internet access over the cable television network. Holds the potential for providing high speed Internet access.

- D -

Dial-up: dial-up pertains to a telephone connection in a system of many lines shared by many users. A dial-up connection is established and maintained for a limited duration of time. Dial-up lines are sometimes called switched lines.

Digital subscriber line: a high-bandwidth (broadband), local loop technology to carry data at high speeds over traditional (copper) telephone lines.

Domain name: a domain name indicates the location of an entity on the Internet. It ends with a top level domain which is either a generic one (such as .com or .org) or a country one (such as .uk or .de). This top level domain name is preceded by another name which, together with the top level domain name, defines a second level domain name.

Domain name system: the DNS allows domain names (which are normally descriptive) to be converted into Internet Protocol addresses (which are a numeric sequence).

- E -

e-Commerce: transactions conducted over Internet Protocol-based networks and over other computer mediated networks. The goods and services are ordered over those networks, but the payment and the delivery of the good or service may be conducted on or off-line.

Electronic data interchange: EDI is a standard, structured format for exchanging electronic data. Traditionally it was used over special telecommunication networks but is now also being used over Internet.

Electronic mail or e-mail: the electronic transmission of messages from one computer to another.

E-marketplaces: specialised e-commerce sites for businesses that allow buyers and sellers to trade with each other.

Encryption: the conversion of data into a form that cannot be easily understood by unauthorised people.

Extranet: normally an extension of a company's Intranet, an Extranet allows some external users to access information, often using a password.

- F -

Flat rate: a charge levied on a client irrespective of the usage of the service provided, for example for Internet access.

- G -

Global system for mobile communication: GSM is a digital mobile telephone system. It is the most widely used wireless communication technology in Europe at the present time and is also used elsewhere in the world. GSM operates at either the 900 MHz or 1800 MHz frequency band.

- H -

Host: generally speaking any computer with an IP address connected to the Internet is a host. From the perspective of an entity with a web site, a host may be referred to as a computer with a Web server (for one or more sites).

Hyper-text mark-up language: HTML is a set of formatting commands. These are typically embedded in a page, such as a web page, and are then interpreted by a web browser, which displays the result, for example as a combination of text and images.

Hypertext transfer protocol: HTTP is the protocol used to transmit and receive data over the WWW.

- I -

Information and Communications Technologies: ICT covers information technology (computer hardware and software; end user, office, network and data communications equipment) and telecommunications equipment and services.

Internet: Internet protocol based networks including www, Extranet over the Internet, EDI over the Internet, Internet-enabled cellular phones.

Internet protocol: the IP is the method by which data is passed from one computer to another on the Internet.

IP address: this is a unique number used to identify each computer (host) on the Internet. When data (for example, an e-mail or a Web page) is sent it is divided into packets each of which contains both the receiver and the sender's IP address. It is this information that allows the data to be routed over the Internet.

Intranet: an Itranet is an Internet Protocol based network that that is not part of the Internet. Normally Intranets belong to businesses or administrations and permit the persons working in those organisations to share and exchange information in the same way as over the Internet but with access restricted to internal users.

Integrated service digital network: ISDN is a telecommunication service that turns a traditional (copper) telephone line into a high speed digital link. ISDN services can simultaneously transmit voice, data and video.

Internet service provider: ISPs provide access for users to the Internet and normally provide additional services. They generally have a network of servers attached to the Internet backbone, which in turn is made up of a network of internationally connected ISPs.

- L -

Local loop: in the telecommunications sector the local loop is the connection from a local exchange (operated normally by a local telecommunications company) to the individual customers. This line connection may provide traditional analogue services or digital services, for example ISDN or DSL.

Local loop unbundling: the process where the incumbent operator of a telecommunications network makes its local loop available to other companies. The customer is then able to choose another supplier other than the incumbent to provide service.

- M -

Metered charges: metered charges, as opposed to flat rate charges, are based on the measurement of actual usage of a service, such as Internet access.

- O -

Off-line/on-line: used to describe whether or not someone is accessing the Internet at a particular moment in time.

- P -

Purchasing power parity: data expressed in different currencies converted at market exchange rates to a common currency to ease comparison would not give a true comparison of the actual volumes of goods and services to which they correspond because of differences in price levels. Eurostat calculates purchasing power parities (PPPs) which are alternative exchange rates aimed to provide a more realistic comparison of values with respect to their purchasing power. PPPs are obtained using the price ratios between the different countries for a basket of goods and services, which are both comparable and representative. The individual price ratios are aggregated to provide PPPs for various purposes, up to the level of GDP.

Public switched telephone network: the PSTN refers to the globally inter-connected public telephone networks providing voice communication services. Apart from the local loop the greater part of it is digital.

- S -

Secure server: a secure server, in the context of the Internet, is a server that supports security protocols such as SSL (Secure Socket Layer) that are used to encrypt data to reduce the risk of non-authorised persons accessing the information. For example encryption can be seen as an important way of increasing customer confidence when providing personal or financial information over the Internet and is therefore regarded as a facilitator of e-commerce.

Server: a server is one part of a client - server relation. In the context of the Internet the term server can be used to refer to both hardware and software. Servers are a particular sort of host that provide information to clients - examples are web servers that provide web pages. Equally the term server may be used to refer to the server programme (as opposed to the host on which the program can be found).

- T -

Third generation (3G): third generation wireless telecommunication services aim to provide for the transmission of all data types permitting a full multi-media service, particularly of interest for palm top mobile devices. See universal mobile telecommunications system.

Transistor: a transistor regulates current or voltage flow and acts as a switch or gate for electronic signals. A transistor consists of three layers of a semi-conductor material, each capable of carrying a current. A semiconductor is a material such as germanium and silicon that conducts electricity.

- U -

Universal mobile telecommunications system: UMTS is a third generation technology. It supports speeds of data transmission up to 2 Mbps, and can transmit voice, text and video data. UMTS is a broadband technology using packet switching.

- W -

World Wide Web: the WWW is a hypertext method for presenting information. Hypertext methods can be applied not just to text but also to images, video and sound files. The web uses the hypertext transfer protocol as its protocol to transmit and receive data.