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KEY I

Society Statistics

Pocketbook

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 first edition of the statistical pocketbook on the Information Society. It aims to provide a statistical overview on 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 Candidate Countries.

The publication starts with general and economic overviews, followed by more in-depth explanations of the extent to which the Information and Communications Technologies (ICT) sector has entered Europeans' lives, particularly at home and in the private sector. A final chapter is dedicated to ICT literacy at the academic and administrative level.

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) had to be brought together to provide an overview on the various aspects of the Information Society in Europe. There are at present many gaps in the data we would like to have. Where there are two or more sources, we have chosen one which best provides comparable data over Member States. Issues of comparability which remain are indicated in the footnotes. Eurostat aims at enhancing the role of Information Society statistics within the European Statistical System and a programme of 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. Future issues of the pocketbook will thus reflect a growing share of data collected in a harmonised form within 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
Total population 1st January (1 000)																		
1990	**363 763**	9 948	5 135	79 113	10 121	38 826	56 577	3 507	56 694	379	14 893	7 690	9 920	4 974	8 527	57 459	248 143	123 611
1995	**371 590**	10 131	5 216	81 539	10 443	39 177	58 020	3 598	57 269	407	15 424	8 040	9 912	5 099	8 816	58 500	261 687	125 570
1999	**374 979**	10 214	5 314	82 037	10 522	39 394	58 494 [1]	3 735	57 613	429	15 760	8 083	9 980	5 160	8 854	59 391	271 465	126 057
2000	**375 968**	10 239	5 330	82 165	10 546	39 442 [1]	58 746 [1]	3 775 [1]	57 680	436	15 864	8 092	9 998 [1]	5 171	8 861	59 623	274 035	126 299
2020 [2]	***388 233***	*10 658*	*5 526*	*84 670*	*11 269*	*40 307*	*62 831*	*3 909*	*56 543*	*501*	*17 204*	*8 443*	*10 513*	*5 350*	*9 470*	*61 038*	*317 124*	*123 893*
Population structure (% of total), 1999																		
under 15	**17.1** [1]	17.7	18.2	15.8	15.4	15.3	19.0	22.2	14.6	18.8	18.5	17.0	17.0	18.4	18.7	19.2	21.4	14.8
15-64	**67.0** [1]	65.6	67.0	68.3	67.7	68.3	65.3	66.5	68.0	66.9	68.0	67.6	68.0	66.9	63.9	65.2	65.9	68.5
65 and over	**15.9**	16.7	14.8	15.9	16.9	16.4	15.7	11.3	17.4	14.3	13.5	15.4	15.0	14.7	17.4	15.6	12.7	16.7
Average households size (number of persons per household)																		
1998	**2.5**	2.4	2.2*	2.2	2.7	3.1	2.4	3.0	2.7	2.6	2.3	2.5	3.0	2.1	2.3	2.3	2.6	2.8

(1) Estimate; (2) For USA and Japan 2020 forecast are from United Nations.

Source: *Eurostat-Demographic statistics.*

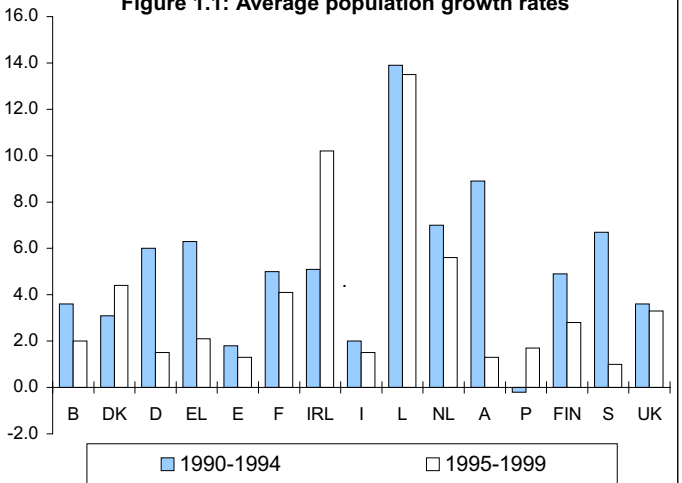
European demographic trends

The population of the European Union stood at 376 million inhabitants on 1st January 2000 compared to around 274 million in the USA and 126 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. In 1998, there were 2.5 persons per household on average (in the EU) compared to 2.8 in 1981.

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, penetration rates are growing less rapidly than the absolute number of ICT in use.

Figure 1.1: Average population growth rates



Source: *Eurostat - Demographic statistics, 1995-based demographic scenarios.*

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
									At market prices (Bn Euro) [1]									
1999	**7 989**	234	165	1 982	117	563	1 344	88	1 099	18	374	197	106	121	226	1 353	8 725	4 081
									Per head in PPS (EU-15 = 100) [1]									
1981-1990	**100**	105	111	115	63	73	112	68	102	141	104	106	56	102	114	99	145	105
1995	**100**	113	118	110	66	78	104	93	104	173	110	111	71	97	103	96	149	119
1999	**100**	110	119	107	67	83	98	114	100	183	113	112	76	101	103	102	155	113
2000	**100**	111	120	106	68	83	98	121	100	192	115	112	76	104	103	102	156	110
									Average growth per year [2]									
1981-1990	**2.4**	2.0	1.6	2.2	0.7	2.9	2.5	3.6	2.3	4.5	2.2	2.3	3.2	3.1	2.0	2.7	3.2	4.2
1990-1995	**1.9**	1.9	2.5	2.5	1.6	1.9	1.3	5.8	1.6	6.9	2.7	2.6	2.2	-0.8	0.7	2.0	3.0	1.9
1995-1998	**2.4**	2.3	2.8	1.4	3.0	3.5	2.0	9.0	1.6	5.1	3.6	2.2	3.8	5.2	2.3	2.9	4.2	1.2
1999-2000	**3.4**	3.9	2.9	3.0	4.1	4.1	3.2	10.7	2.9	8.5	3.9	3.2	3.3	5.7	3.6	3.0	5.0	1.2
									Labour productivity [2]: average growth									
1981-1990	**1.9**	1.9	1.1	1.7	-0.3	2.1	2.3	3.8	1.7	2.7	1.6	2.3	3.0	2.6	1.3	2.2	1.3	3.1
1990-1995	**2.1**	1.7	2.5	2.1	0.7	2.0	1.5	2.7	2.1	2.7	1.4	2.6	2.3	3.2	2.8	2.5	1.2	0.7
1995-1998	**1.4**	1.5	1.4	1.3	2.1	0.8	1.6	3.3	1.1	1.6	0.7	2.2	4.4	2.9	2.4	1.4	1.9	1.1
1999-2000	**1.6**	2.2	2.1	1.4	2.9	0.8	1.2	5.6	1.4	2.8	1.4	2.3	1.6	4.1	1.4	2.0	3.7	1.4

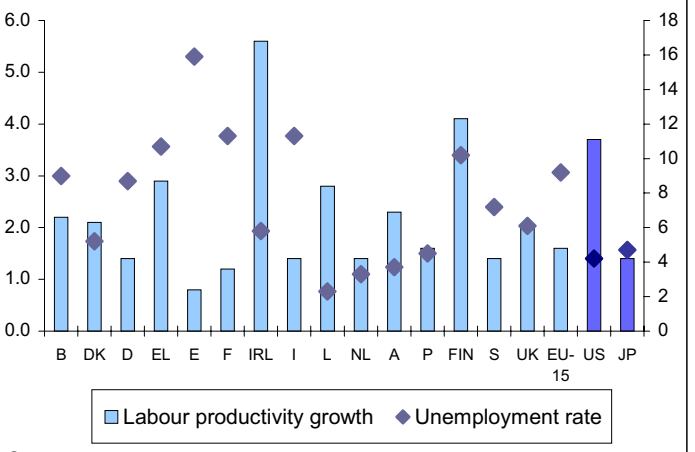
(1) Source: Eurostat/Economy and Finance; (2) Average growth refers in this publication to the average annual compound percent. growth rate. Source: *Eurostat/Theme1/Pocket*.

Gross Domestic Product

In the second half of the nineties, growth of productivity in the US accelerated considerably compared to previous decades. At the same time economic growth rates were high and unemployment and inflation figures low. The term 'New Economy' was used to designate this state of affairs which was attributed partly to the impact of ICT technologies. However, sluggish growth in the US in the first half of 2001 sparked doubts about the solidity of this economic trend.

At the end of the nineties a number of European countries showed a similar economic configuration (notably Nordic countries, the UK and Ireland) to that which had been observed since the mid-nineties in the US; an improvement in labour productivity and declining unemployment rates in an expanding economy.

Figure 1.2: Labour productivity growth 1999-2000 and unemployment rate, 1999



Source: *Eurostat.*

Table 1.3: Employment

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US [1]	JP [2]
									Employment (1 000)									
1995	**148 406**	3 793	2 601	35 782	3 821	12 027	22 057	1 262	19 943	162	6 782	3 675	4 417	2 016	4 134	25 936	130 698	66 688
1996	**149 147**	3 791	2 623	35 634	3 868	12 342	22 195	1 308	20 013	165	6 932	3 617	4 431	2 064	3 988	26 177	131 396	66 991
1997	**150 070**	3 838	2 675	35 299	3 853	12 706	22 157	1 373	20 032	169	7 186	3 609	4 523	2 120	3 917	26 612	134 317	67 720
1998	**152 494**	3 857	2 679	35 537	3 967	13 161	22 469	1 496	20 357	171	7 402	3 626	4 764	2 179	3 946	26 883	135 951	*67 246*
1999	**155 498**	3 987	2 708	36 089	3 940	13 773	22 755	1 593	20 618	176	7 605	3 678	4 830	2 333	4 054	27 361	*137 943*	*66 708*
									Average growth per year (%)									
1998-1999	**2.0**	3.4	1.1	1.6	-0.7	4.7	1.3	6.5	1.3	2.9	2.7	1.4	1.4	7.1	2.7	1.8	1.5	-0.8
1995-1999	**1.2**	1.3	1.0	0.2	0.8	3.4	0.8	6.0	0.8	2.1	2.9	0.0	2.3	3.7	-0.5	1.3	1.4	0.0
									Unemployment rate (%) [3]									
1995	**10.7**	9.3	7.0	8.2	9.1	22.7	11.9	12.0	11.8	2.9	7.2	4.3	7.1	17.0	8.8	8.7	5.6	3.1
1996	**10.9**	9.5	6.8	8.8	9.7	22.2	12.4	11.7	12.2	3.3	6.4	5.3	7.3	15.6	9.5	8.2	5.4	3.4
1997	**10.8**	9.0	5.4	9.9	9.6	20.9	12.6	10.2	12.4	2.5	5.5	5.1	6.6	15.0	10.4	7.1	4.9	3.4
1998	**10.2**	9.3	5.0	9.8	10.8	18.9	12.1	7.7	12.1	2.8	4.4	5.5	4.7	13.2	8.9	6.2	4.5	4.1
1999	**9.4**	8.6	5.1	8.9	11.7	15.7	12.1	5.7	11.7	2.4	3.6	4.7	4.6	11.7	7.6	6.1	4.2	4.7

(1) Civilian labour force, Bureau of US Labour Statistics Data; (2) Persons in employment (annual average) according to the European System of National Accounts.

(3) As a percentage of civilian labour force (Eurostat definition), USA and Japan: as a percentage of the total labour force.

Source: *Eurostat/LFS.*

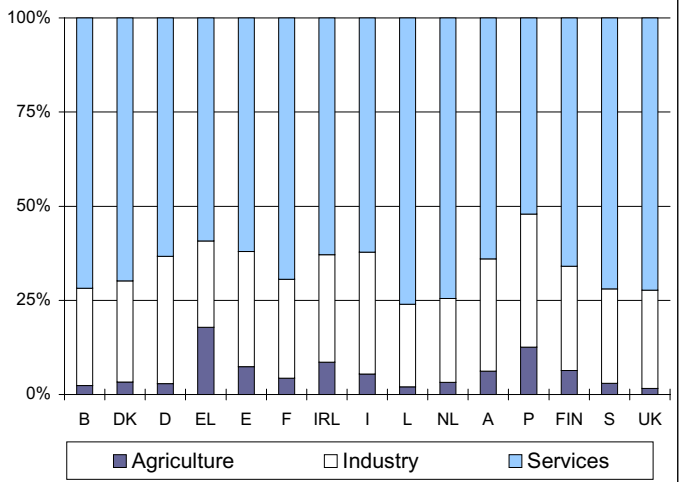
European employment trends

In 1999, 155.5 million people were in employment in the European Union, 4.5% of which were employed in agriculture, 29.3% in industry and 66.2% in services. This pattern is rather similar in all Member States, with the exception of Greece and Portugal, where a relatively large share of people are working in agriculture.

Between 1995 and1999, the number of persons employed in the service sector increased significantly in all Member States, while a drop in labour force was recorded in agriculture.

15.7 million people were unemployed in the EU-15 area in 1999. Since 1998 unemployment has fallen significantly. In 1999, it stood at 9.4%. This downward trend can be observed, to varying degrees, in all Member States with the most significant falls occurring in Spain, Ireland, and Finland.

Figure 1.3: Employment by sectors, 1999



Source: *Eurostat LFS (data refer to spring 1999).*

Table 1.4: Foreign languages learnt by pupils

	EU-15 [1]	B (f)	B (vl)	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Average number of foreign languages [2], 1996/97																			
Primary education	**0.4**	0.4	0.3	0.3	0.1	0.5	0.7	0.4	-	0.4	1.8	0.2	0.6	1.0	0.8	0.7	:	:	:
Secondary education	**1.3**	1.4	1.9	2.0	1.2	1.5	1.2	1.6	1.0	1.1	2.9	1.2	1.2	1.0	2.5	1.7	:	:	:
Foreign languages chosen by students in general secondary education (%), 1997																			
English	**90.0**	63.0	71.0	100.0	94.0	54.0	96.0	95.0	.	76.0	77.0	94.0	98.0	75.0	99.0	100.0	:	:	:
French	**22.0**	2.0	95.0	15.0	24.0	46.0	23.0	.	70.0	34.0	98.0	12.0	13.0	24.0	13.0	21.0	:	:	:
German	**10.0**	5.0	24.0	76.0	.	5.0	1.0	26.0	25.0	3.0	98.0	14.0	.	0.0	1.0	44.0	:	:	:

(1) Average of available data only; (2) Data refer to foreign languages studied by each pupil in 1996/97 as opposed to those studied throughout their schooling.

Notes: B (f) french-speaking Community which includes German speaking community, B (vl) Flemish-speaking community. F, A :1997/98, F including students from technological education. IRL: Full time only. NL, P: 1995/96. S: ISCED 2 general and vocational only. Source: *Eurostat - UOE (Unesco-OECD-Eurostat) questionnaire on education statistics - 2000.*

Table 1.5: World's online population by language (%)

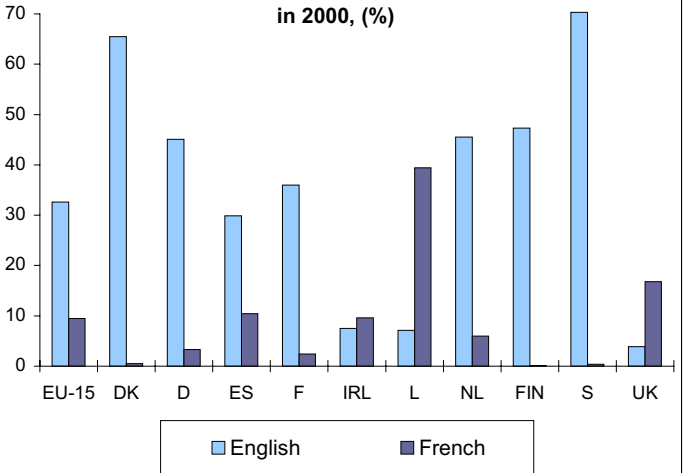
	English	Non-English	European (Non-English)	German	Spanish	French	Italian	Portuguese	Scandinavian (Total)	Dutch	Total Asian
March 2001	**47.5**	**52.5**	28.9	6.1	4.5	3.7	3.1	2.5	2.2	2.1	23.5

Source: *http://www.euromktg.com/globstats/index.php3.*

Foreign languages

On average all the EU pupils in secondary education were learning at least one (1.3) foreign language in 1997. Two or more languages were studied in Denmark (2.0) and Finland (2.5) and about 3 (2.9) in Luxembourg. 53% of Europeans speak at least one European foreign language, English being the most common language with 40.5%, followed by French (19.2%), German (10.3%), Spanish (6%) and Italian (less than 3%). 33% of Europeans claim their knowledge of English is good and 75% consider it the most useful language, with French (40%) resulting second. Although English is by far the most popular foreign language in all Member States, 1/4 of Internet users voiced linguistic problems when searching for information on the web. German was the most spoken mother tongue in the EU, with ca. 85 million native speakers, followed by French (ca. 60), English (ca. 60) and Italian (ca. 57). English is by far the language with the largest online presence, close to half of the "web world". Non-English European languages account for slightly less than 30% of the world's population online. Of the latter, German, Spanish and French top the list which combined represent about half of the non-English European languages online.

Figure 1.4: First foreign language known in 2000, (%)



Source: *Special Eurobarometer 54, December 2000.*

Table 1.6: Venture capital

		EU-15 [1]	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
								Investment and Funds raised (Mio Euro)											
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 (Mio Euro) [2]											
1999	Total technology investment	**6 092**	364	29	1 350	8	126	1 047	62	286	:	540	16	20	88	339	2 181	:	:
	Of which venture capital	**4 489**	360	28	1 104	8	84	907	60	252	:	398	16	9	56	309	1 257	:	:

(1) Excluding Luxembourg.

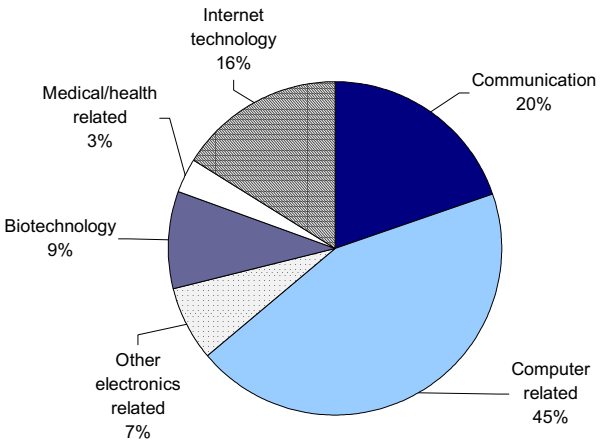
(2) PricewaterhouseCooper - Technology Investment Report 1999.

Source: *EVCA Yearbook 2000.*

European venture capital

1999 shows the highest level ever in funds raised and investment made in the EU both at over 25 billion Euro[1]. Investments in venture capital total 12 billion Euro, showing a yearly increase of over 100% (excluding Germany and Luxembourg) compared to 1998. Investment in technology companies in 1999 reached 6.1 billion Euro, reflecting an increase of 70% when comparing to 1998. Venture capital investment in technology in Europe is still low compared to the amount invested in the USA (18 billion Euro), although Europe is catching up.

Figure 1.5: Distribution of European technology investment by sectors, 1999 (%)



Source: *PricewaterhouseCooper - Technology investment report 1999.*

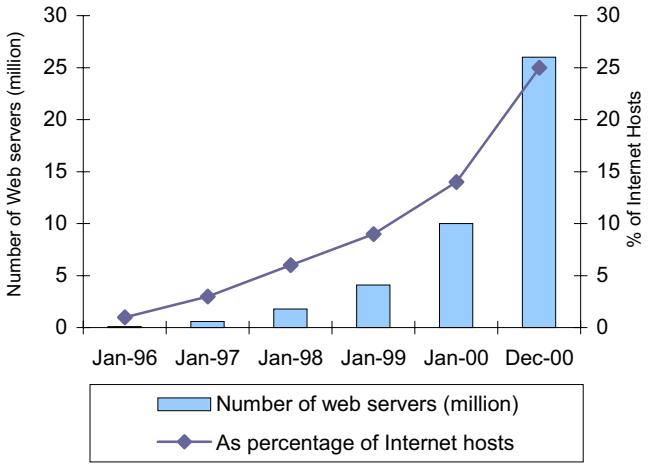
[1] EVCA 2000.

Internet characteristics

While in 1988, only seven countries were connected to the US National Science Foundation Internet backbone, their number had grown to 200 a decade later. In 2001, less than half a dozen economies remain unconnected, primarily for political reasons. The seven countries that were first connected to the US-developed Internet — Canada, Denmark, Finland, France, Iceland, Norway and Sweden — now all rank, with the exception of France, among the top ten in terms of Internet penetration.

The growth of World Wide Web servers has been dramatic — rising from 75 000 in early 1996 to over 25 million by the end of the year 2000. Web servers terminating with a ".com" suffix amount to 15 million and account for 57% of the total. The country code domain with most Web servers is the United Kingdom (.uk) with 1.7 million, or 7% of the total.

Figure 1.6: Total number of web servers and Internet hosts

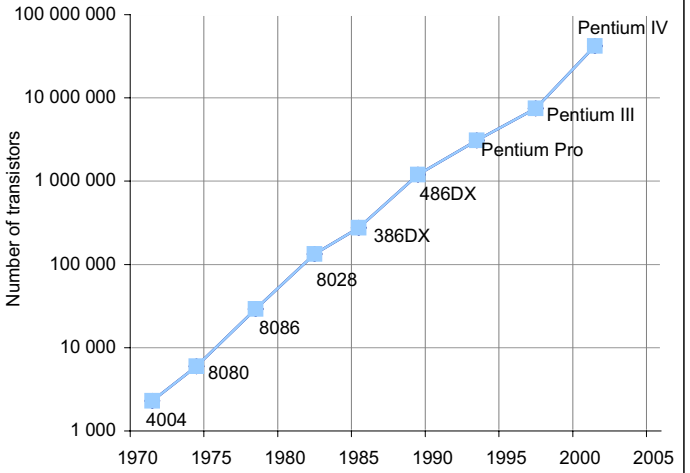


Source: *ITU, adapted from Netcraft.*

Technology changes in computers

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 times, rising from 2 300 on the Intel 4004 in 1971 to 42 million on the Intel "Pentium" IV processor in 2000. In 1971 the frequency of a chip was of 108 Kilohertz while in 2000 it reached 1.5 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 Euro in 1966 to several billion Euro at the end of the 90s.

Figure 1.7: The Moore's law: Development from the 4004 to the Pentium 4 processor



Source: *Intel Museum.*

ECONOMIC DATA ON THE ICT SECTOR

Table 2.1: Number of ICT enterprises

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Total number of enterprises in the ICT sector																
1995	:	:	2 863 [1]	:	:	:	:	1 115 [2]	63 540	591	14 110	4 641	:	4 334	1 348	:
1996	:	:	:	40 324	:	:	42 925	1 454	65 703	645	11 950	6 344	3 925	4 677	16 732	75 063 [2]
1997	:	:	:	43 555	:	:	44 812	1 654	69 830	729	13 875	6 275	3 682	4 831	20 214	100 241
1998	**389 000** *	:	2 463 [1]	47 998	:	20 250	47 390	:	:	838	15 580	7 771	3 746	5 489	22 403	120 506
of which in ICT manufacturing [3]																
1995	:	:	747	1 411 [4]	:	1 330	:	202	12 867	10	895	406	549	693	1 348	:
1996	:	:	752	1 390 [4]	:	1 549	7 265	210	13 106	10	845	457	558	688	1 399	7 610
1997	:	:	725	1 423 [4]	:	1 634	7 129	217	13 452	10	1 120	410	509	666	1 716	8 150
1998	**47 000** *	:	724	1 447 [4]	:	1 634	6 997	222	:	12	1 195	477	456	729	1 756	7 924
of which in ICT services [5]																
1995	:	:	2 116 [1]	:	:	:	:	913 [2]	50 673	581	13 215	4 235	:	3 641	:	56 067 [2]
1996	:	:	:	38 934	:	14 448 [6]	35 660	1 244	52 597	635	11 105	5 887	3 367	3 989	15 333	67 453 [2]
1997	:	:	:	42 132	:	16 470 [6]	37 683	1 437	56 378	719	12 755	5 865	3 173	4 165	18 498	92 091
1998	**342 000** *	:	1 739 [1]	46 551	:	18 616	40 393	:	:	826	14 385	7 294	3 290	4 760	20 647	112 582
of which in telecommunication services																
1995	:	:	143	:	:	:	:	:	205	37	254	83	:	140	:	:
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	**10 500** *	:	179	279	:	1 198	1 606	:	:	44	635	159	147	210	278	4 954

(1) Excluding NACE Rev 1 72; (2) Excluding NACE Rev 1 64.2; (3) NACE Rev 1 30, 31.3, 32, 33.2 and 33.3; (4) Enterprises with 20 persons employed and more; (5) NACE Rev 1 51.64 64.2 and 72; (6) Excluding NACE Rev 1 51.6. Source: *Eurostat/SBS*. Descriptions on relevant NACE codes can be found in the complementary information on pages 101 and 102.

Number of ICT enterprises

In 1998 there were around 390 000 ICT enterprises in the EU. The service sector represents ca. 88% of ICT enterprises, the manufacturing sector being ca. 12%. For manufacturing, around 55% of ICT enterprises employed less than 10 people. The corresponding percentage for services was 52%, but this does not include Belgium, Greece, Luxembourg, Germany and especially the United Kingdom which alone accounts for 31% of ICT firms in the EU as well as 33% of ICT firms providing services only. The UK saw an increase of 20% in ICT firms between 1997 and 1998, second only to Austria with a 24% rise. Denmark, France, Portugal and the UK all saw a fall in the number of ICT manufacturing firms in this period. Italy had over 70 000 ICT enterprises, equivalent to roughly 1/5 of those in the EU.

Table 2.2: Number of enterprises by size classes in the ICT manufacturing and services sector, 1997/98

	Manufacturing				Services			
	1-9	10-49	50-249	250 +	1-9	10-49	50-249	250 +
B	:	:	:	:	:	:	:	:
DK	454	154	63	19	2 326	492	69	8
D	1 000	1 198	558	159	:	:	:	:
EL	:	:	:	:	:	:	:	:
E [1]	500	381	41	10	14 573	957	10	:
F	3 971	1 869	395	151	45 223	4 964	880	161
IRL [2]	:	:	:	:	1 502	338	60	8
I [1, 2]	11 248	2 196	329	77	61 679	3 913	410	79
L	:	:	:	:	:	:	:	:
NL [1]	850	275	40	5	16 670	1 520	90	10
A	314	137	49	24	9 213	626	100	19
P	235	100	14	4	1 000	373	48	5
FIN	493	154	40	26	4 961	450	96	23
S [2]	1 290	271	81	38	18 753	1 080	187	40
UK [1]	5 761	2 186	250	87	:	:	:	:

(1) Manufacturing 1997 data. (2) Services 1997 data. Source: *Eurostat/SBS*.

Table 2.3: Employment in the ICT sector

	EU-15	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																		
1995	:	93 365	55 964	443 988	:	:	:	:	514 667	:	:	126 060	:	71 449	:	:	:	:
1996	:	95 786	:	408 291	:	:	697 345	52 480	522 927	:	172 035	:	64 521	73 157	:	:	:	:
1997	:	95 931	:	400 762	:	:	546 616	62 737	514 645	:	182 055	136 653	67 149	79 797	150 190	1 111 630	4 521 080	2 059 983
1998	**4 300 000** *	101 863	62 080	391 970	:	256 974	580 720	:	:	:	200 141	101 740	71 113	89 395	170 060	:	:	:
of which in ICT manufacturing [1]																		
1995	:	25 987	21 562	361 144 [2]	:	55 227	:	25 973	194 574	:	:	42 455	33 668	32 005	59 152	:	:	:
1996	:	24 698	20 883	329 029 [2]	:	56 571	277 415	27 780	193 411	:	66 403	32 459	26 002	33 614	60 009	312 735	:	:
1997	:	23 033	22 713	322 427 [2]	:	55 680	278 061	34 339	185 751	:	64 778	39 400	26 568	36 900	64 563	321 250	1 587 300	1 210 500
1998	**1 600 000** *	22 868	20 334	317 279 [2]	:	55 261	283 178	35 594	:	:	61 078	39 253	28 105	40 869	69 178	:	:	:
of which in ICT services [3]																		
1995	:	67 378	34 402	82 844 [4]	:	:	:	:	320 093	3 369	88 741	83 605	:	39 444	:	:	:	:
1996	:	71 088	:	79 262 [4]	:	:	419 930	24 700	329 516	3 527	105 632	:	38 519	39 543	:	:	:	:
1997	:	72 898	:	78 335 [4]	:	:	268 555	28 398	328 894	4 440	117 277	97 253	40 581	42 897	85 627	:	2 933 780	849 483
1998	**2 700 000** *	78 995	41 746	74 691 [4]	:	201 713	297 542	:	:	5 141	139 063	62 487	43 008	48 526	100 882	:	:	:
of which in telecommunication services																		
1995	:	28 793	15 262	:	:	:	:	:	95 271	406	:	56 391	:	16 860	:	:	:	:
1996	:	31 149	17 686	:	:	:	163 538	12 416	96 293	:	:	:	21 060	16 489	:	:	:	:
1997	:	29 730	15 262	:	:	:	c	13 229	94 733	530	:	64 542	20 527	16 892	:	:	1 007 000	:
1998	**1 020 000** *	28 759	19 550	:	:	78 662	c	:	:	609	:	23 459	21 817	18 062	:	:	:	:

(1) NACE Rev 1 30, 31.3, 32, 33.2 and 33.3; (2) Enterprises with 20 persons employed and more; (3) NACE Rev 51.64, 1 64.2 and 72, (4) Only NACE Rev.1 51.64.
Sources: *EU-15: Eurostat/SBS, USA and JP: OECD.*

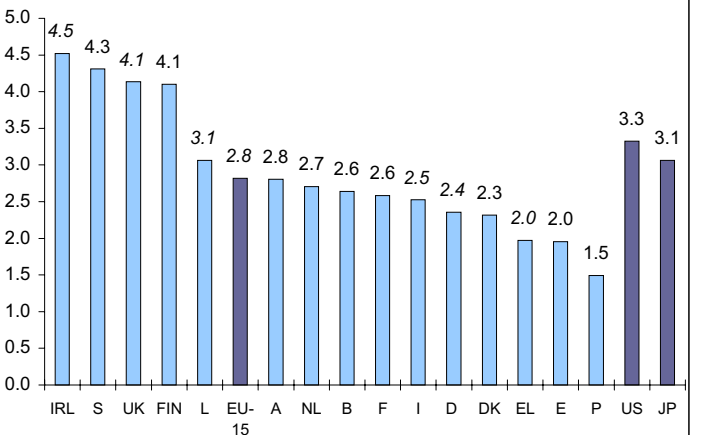
Employment in the ICT sector

In 1998 4.3 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 US and 3.1% in Japan (1997). Ireland and Sweden were the EU countries where the ICT sector accounted for the largest share of employment. Ireland's share of employment in ICT was well ahead of the US, with 1.2 percentage points difference.

Country results shown in figure 2.1 in italics are the results of projections of 1997 results (IRL, I, UK) or of estimates based on data for parts of the ICT sector (D, EL, L), the results for the latter group of countries should be interpreted with caution.

In view of the general expansion of the ICT sector it is expected that the ICT share in total employment will increase in the future.

Figure 2.1: Share of ICT employment in total employment (%), 1998



Source: *Eurostat/SBS , LFS and OECD for US and JP.*

Table 2.4: ICT value added at factor cost (Mio Euro)

	EU-15	B	DK	D [1]	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Value added at factor cost in the ICT sector																		
1995	:	7 216	3 727 [2]	:	:	:	:	:	26 098	:	:	8 445	:	4 278	8 375	:	:	:
1996	:	7 483	:	:	:	:	44 729	3 763	30 001	:	:	:	2 888	4 599	10 394	:	:	:
1997	:	7 448	:	:	:	:	28 732 [3]	4 959	31 090	:	10 351 [3]	7 641	3 160	5 801	11 550 [3]	65 784	512 805	182 853
1998	**315 000** *	8 046	4 400 [2]	:	:	17 282	31 619 [3]	:	:	:	9 294 [3]	7 320	3 723	7 437	10 294 [3]	79 916	:	:
of which in ICT manufacturing [4]																		
1995	:	1 637	839	17 603	:	2 605	:	2 436	8 055	:	3 810	2 439	:	1 934	2 864	:	:	:
1996	:	1 547	932	16 350	:	2 937	14 939	2 161	8 627	:	3 615	:	589	2 098	3 558	13 873	:	:
1997	:	1 654	941	17 642	:	2 747	15 061	2 906	8 319	:	3 741	2 197	676	2 961	6 983	17 726	151 816	109 573
1998	**85 000** *	1 401	934	18 441	:	2 749	15 522	2 644	:	:	1 381	2 626	807	4 031	4 675	18 965	:	:
of which in ICT services [5]																		
1995	:	5 579	2 888 [2]	:	:	:	:	:	18 043	380	2 292 [6]	6 006	:	2 344	5 511	:	:	:
1996	:	5 936	:	:	:	:	29 790	1 602	21 374	179 [3]	2 594 [6]	:	2 299	2 501	6 836	:	:	:
1997	:	5 794	:	:	:		13 671 [3]	2 053	22 771	523	6 610	5 444	2 484	2 840	4 567 [3]	48 058	360 989	73 280
1998	**230 000** *	6 645	3 466 [2]	:	:	14 533	16 097 [3]	:	:	599	7 913	4 694	2 916	3 406	5 619 [3]	60 951	:	:
of which in telecommunication services																		
1995	:	3 045	1 526	:	:	:	:	:	10 854	218	:	4 256	:	1 124	2 220	:	:	:
1996	:	3 462	1 707	:	:	:	16 696	1 091	12 769	c	c	:	1 856	1 216	2 907	:	:	:
1997	:	3 180	2 123	:	:	:	c	1 222	13 919	346	c	3 502	1 928	1 408	c	21 540	163 491	50 847
1998	**128 000** *	3 414	2 230	:	:	10 291	c	:	:	400	c	2 356	2 224	1 629	c	24 229	:	:

(1) Enterprises with 20 persons employed and more; (2) Excluding NACE Rev 1 72; (3) Excluding NACE Rev 1 64.2; (4) NACE Rev 1 30, 31.3, 32, 33.2 and 33.3; (5) NACE Rev 1 51.64 64.2 and 72; (6) Only NACE Rev 1 51.6. Source: *Eurostat/SBS.*

Value added at factor cost in the ICT sector

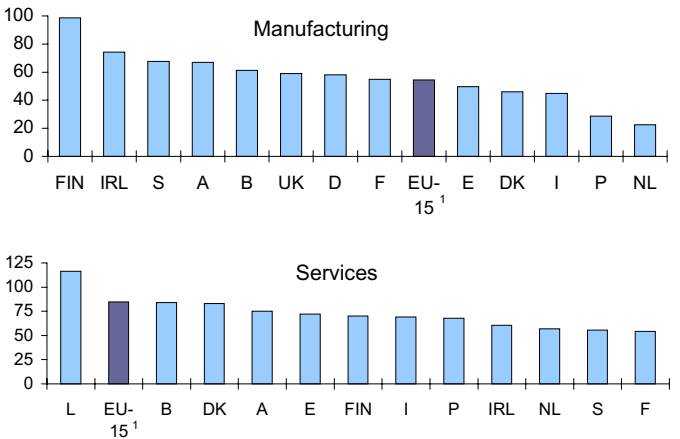
In 1998, the value added at factor cost of the ICT sector in the EU amounted to about Euro 315 billion. The weight of services was pronounced standing at Euro 230 billion, with manufacturing being about Euro 85 billion.

In 1998, in the EU the value added per person employed in ICT manufacturing enterprises varied from less than 20 000 Euro in the Netherlands to nearly 100 000 in Finland. Finland's figure reflects, to a certain extent, a focus on high value added telecommunications products.

ICT service enterprises showed a different picture with Luxembourg ranking first (around 115 000 Euro per person employed).

Thus, the figures substantiate a wider gap in value added at factor cost per person employed for manufacturing than is the case for services.

Figure 2.2: ICT value added at factor cost per person employed (Mio Euro), 1998



(1) Estimation. Source: *Eurostat/SBS*.

Table 2.5: ICT turnover (Mio Euro)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Turnover in the ICT sector																
1995	:	16 986	10 505 [1]	:	:	:	:	10 051 [2]	61 639	:	35 382 [2]	18 531	:	12 328	28 693	:
1996	:	17 804	:	138 954	:	:	119 430	12 753	72 449	:	37 038 [2]	:	7 293	13 475	33 424	125 230
1997	:	19 723	:	144 144	:	:	100 056 [2]	16 561	75 698	:	49 548 [2]	20 884	8 521	16 669	31 714 [2]	169 811
1998	**845 000** *	22 175	13 173 [1]	157 438	:	42 205	112 732 [2]	:	:	:	43 415 [2]	21 455	10 699	21 457	37 940 [2]	197 736
of which in ICT manufacturing [3]																
1995	:	4 459	2 305	58 326 [4]	:	9 175	:	8 897	27 280	:	13 362	7 362	2 504	6 353	10 972	:
1996	:	4 099	2 477	55 902 [4]	:	10 367	53 079	9 469	28 600	:	13 931	6 100	2 439	6 944	14 008	48 256
1997	:	4 108	2 580	57 503 [4]	:	10 656	55 284	12 127	29 222	:	16 122	7 837	2 685	8 998	16 661	64 338
1998	**310 000** *	4 519	2 529	59 853 [4]	:	11 355	60 013	13 763	:	:	5 212	9 017	3 138	12 127	19 045	66 740
of which in ICT services [5]																
1995	:	12 527	8 200 [1]	:	:	:	:	1 154 [2]	34 359	919	22 020 [2]	11 169	:	5 975	17 721	64 986
1996	:	13 705	:	83 052	:	:	66 351	3 284	43 849	584 [2]	23 107 [2]	:	4 854	6 531	19 416	76 974
1997	:	15 615	:	86 641	:	:	44 772 [2]	4 434	46 476	1 183	33 426 [2]	13 047	5 836	7 671	15 053 [2]	105 473
1998	**535 000** *	17 656	10 644 [1]	97 585	:	30 850	52 719 [2]	:	:	1 323	38 203 [2]	12 438	7 561	9 330	18 895 [2]	130 996
of which in telecommunication services																
1995	:	4 141	2 757	:	:	:	:	:	14 961	348	c	4 844	:	1 921	5 607	25 023
1996	:	4 701	3 664	33 147	:	:	25 238	1 632	19 730	c	c	:	*2 684*	2 180	5 620	28 393
1997	:	4 954	4 355	33 871	:	:	c	1 989	21 771	*587*	c	5 686	2 966	2 597	c	39 142
1998	**190 000** *	5 870	3 295	33 789	:	15 949	c	:	:	*664*	c	4 391	3 715	3 416	:	47 214

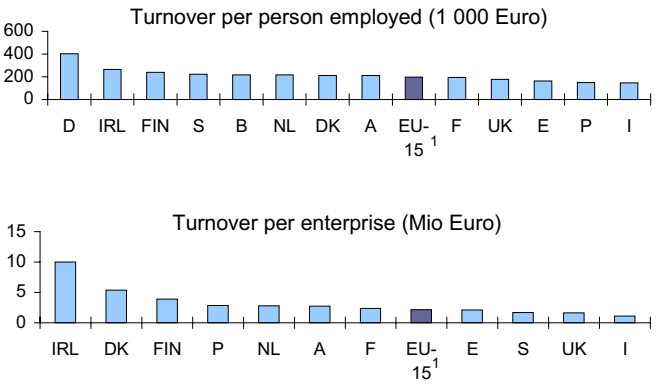
(1) Excluding NACE Rev 72; (2) Excluding NACE Rev 1 64.2; (3) NACE Rev 1 30, 31.3, 32, 33.2 and 33.3; (4) Enterprises with 20 persons employed and more; (5) NACE Rev 1 51.64, 64.2 and 72. Source: *Eurostat/SBS.*

Turnover in the ICT sector

Turnover, in 1998, in the EU was about Euro 845 billion, of which manufacturing represented Euro 310 billion and services were about 535 billion. The Netherlands was the only country that saw a fall in ICT turnover between 1997 and 1998, while Finland registered the highest growth in turnover with a 28.7% rise. In the EU, all countries displayed a higher turnover in ICT services than manufacturing except for France, Sweden and Finland.

In 1998 the EU's ICT value added was equivalent to 37% of the sector's total turnover.

Figure 2.3: ICT turnover per person employed and by enterprise, 1998



(1) Estimation. Source: *Eurostat/SBS*.

Table 2.6: ICT market value

	EU-15	B / L	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	US	JP
ICT market value, 2000 (Mio Euro)																	
Total ICT	**509 763**	14 725	10 610	115 069	7 273	38 335	85 311	4 849	61 432	26 278	12 000	7 440	7 932	18 289	100 219	727 488	221 557
Computer hardware	**80 520**	2 189	2 132	20 464	539	5 152	11 473	774	6 822	4 086	1 890	895	1 393	3 960	18 750	210 591 [1]	80 348 [1]
User & communic. equipment	**42 581**	974	620	8 169	999	4 207	6 308	333	7 404	1 876	1 034	1 100	771	1 351	7 436	: [2]	: [2]
Office equipment	**9 432**	314	199	2 090	113	529	1 737	161	744	748	185	139	127	234	2 112	: [2]	: [2]
Datacom and network equipment	**40 419**	1 225	891	9 478	557	3 614	5 813	405	4 540	2 237	1 067	430	856	1 481	7 824	: [2]	: [2]
Software products	**47 121**	1 811	861	14 588	162	1 433	6 980	219	3 610	3 111	957	223	565	1 248	11 352	93 002	17 118
IT services	**83 141**	2 161	2 197	15 497	361	3 480	21 180	380	8 537	3 640	1 735	442	1 325	4 400	17 806	186 419	46 894
Carrier services	**206 549**	6 052	3 710	44 782	4 542	19 919	31 819	2 576	29 775	10 581	5 133	4 211	2 894	5 615	34 939	237 475	77 197
Total ICT market value per capita (Euro)																	
1998	**1 071**	1 098	1 658	1 155	485	695	1 142	1 023	813	1 303	1 143	587	1 251	1 680	1 342	2 312	1 594
1999	**1 202**	1 233	1 798	1 271	594	827	1 282	1 138	935	1 464	1 316	647	1 409	1 867	1 478	2 476	1 648
2000	**1 356**	1 379	1 991	1 400	690	972	1 452	1 285	1 065	1 656	1 483	744	1 534	2 064	1 681	2 655	1 754
Total ICT market value as % of Gross Domestic Product																	
1998	**5.3**	4.9	5.6	4.9	4.7	5.2	5.2	4.9	4.4	5.8	4.9	5.9	5.6	7.0	6.3	8.0	5.7
1999	**5.6**	5.2	5.8	5.3	5.3	5.8	5.6	4.8	4.9	6.2	5.4	6.0	6.0	7.3	6.5	7.8	4.9
2000	**6.0**	5.6	6.0	5.7	6.0	6.3	6.1	4.8	5.3	6.6	5.8	6.6	6.0	7.4	6.5	6.8	4.3

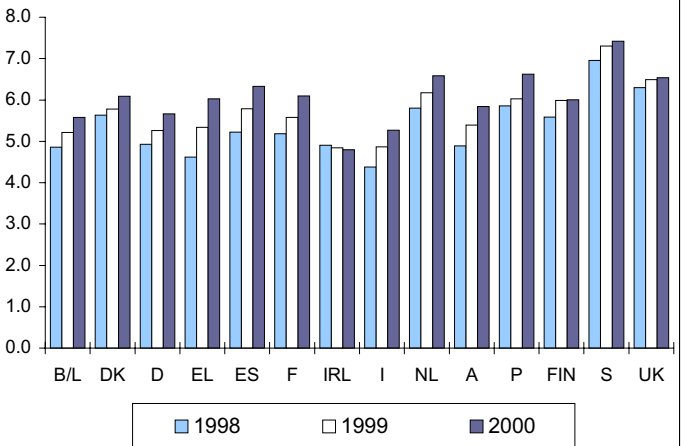
(1) Including equipments for user & communication, office and datacom and network. (2) Included in computer hardware. Source: *EITO 2001 and Eurostat for population and GDP.*

ICT market value

In 2000 the total ICT market value in the EU reached nearly 510 billion Euro, with the highest shares reported by Germany (22.5%), the United Kingdom (19.6%) and France (16.7%). In terms of market value per capita, the situation varied across the EU. The EU-15 average of 1 356 Euro per head was quite noticeably less than that of the Northern Member States (Sweden 2 064, Denmark 1 991), while Southern countries showed figures below the average.

From 1998 to 2000, the ICT market increased in absolute and relative terms (% of GDP), in all EU Member States.

Figure 2.4: ICT expenditure as % of Gross Domestic Product, 1998-2000 (%)



Source: *Eurostat, EITO 2001.*

Table 2.7: ICT Exports [1]

	EU-15	B / L	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK
							ICT Exports (Mio Euro)								
1996	**115 951**	4 907	1 828	25 907	163	3 423	17 038	7 518	7 968	13 151	1 906	1 142	3 607	5 507	21 884
1997	**141 541**	5 545	2 250	29 853	206	3 501	19 950	11 302	7 888	18 236	2 306	1 303	4 831	7 053	27 315
1998	**190 312**	7 143	2 863	37 676	198	4 301	26 451	16 529	9 631	26 501	3 003	1 631	6 571	8 666	39 149
1999	**198 231**	7 466	3 171	37 990	226	4 139	24 566	18 987	8 904	30 860	3 021	1 703	6 943	10 665	39 591
2000	**218 806**	8 865	3 774	44 085	313	4 747	27 291	22 167	10 277	26 996	4 577	1 948	9 555	13 556	40 655
							Average growth per year (%)								
1996-2000	**17.2**	15.9	19.9	14.2	17.6	8.5	12.5	31.0	6.6	19.7	24.5	14.3	27.6	25.3	16.7
							Share on total exports [2] (%)								
2000	**9.1**	4.3	7.6	7.5	2.7	4.1	7.8	27.7	4.1	11.6	6.9	7.8	19.3	15.2	13.4

(1) Total of partner countries: 8-digit level of the Combined Nomenclature.

(2) Total exports means all domains from 00 to 99 on 8-digit level of the Combined Nomenclature.

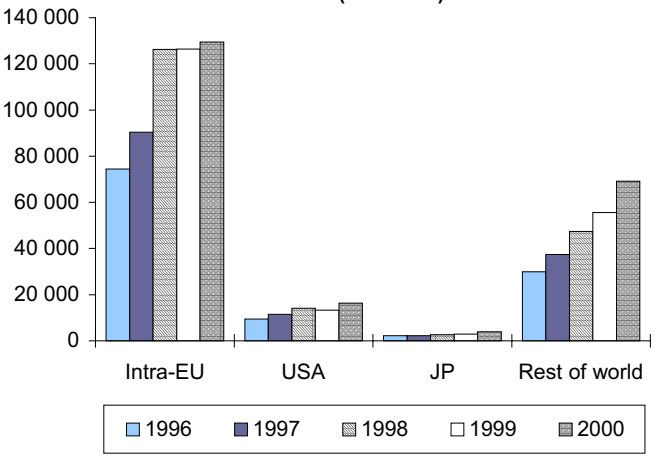
Source: *COMEXT (EEC Special Trade since 1988).*

ICT Exports

Between 1996 and 2000, EU ICT exports rose by 17.2% on average per year with Northern countries leading the way. The largest jump was witnessed between 1997 and 1998 when ICT exports increased by nearly 35%. An evident slowdown in exports took place between 1998 and 1999, followed by a 10.4% rise between 1999 and 2000.

In 2000, the European Union's ICT exports amounted to Euro 218.8 billion of which Euro 129.5 billion intra-EU, Euro 16.3 billion to the United States, Euro 3.9 billion to Japan and Euro 69.1 billion to the rest of the world. In 2000, the European Union's ICT exports represented about 2.6% of its aggregate GDP, with 0.2% sold to the United States, under 0.1% to Japan and 0.8% imported by the rest of the world. In 2000, ICT exports represented about 9% of total exports which balanced with the share of ICT imports.

Figure 2.5: ICT exports of EU-15, 1996-2000 (Mio Euro)



Source: *Comext (EEC Special Trade since 1988).*

Table 2.8: ICT Imports [1]

	EU-15	B / L	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK
							ICT Imports (Mio Euro)								
1996	**133 790**	5 806	2 739	29 879	882	5 814	18 488	5 362	11 555	14 383	3 085	1 597	2 608	4 675	26 918
1997	**157 932**	6 688	3 052	33 335	1 039	6 028	21 352	7 307	12 977	19 875	3 644	1 768	3 185	5 442	32 239
1998	**215 630**	8 934	3 937	45 217	1 544	8 738	28 399	10 578	16 151	31 129	5 067	2 530	4 132	7 319	41 955
1999	**220 739**	9 823	4 332	45 899	1 720	8 821	26 699	11 374	16 487	34 163	5 626	2 599	3 491	6 723	42 980
2000	**233 770**	10 470	4 320	47 905	1 720	9 629	28 983	15 019	16 720	31 182	6 254	2 314	3 884	6 848	48 523
							Average growth per year (%)								
1996-2000	**11.8**	12.5	9.5	9.9	14.3	10.6	9.4	22.9	7.7	16.7	15.2	7.7	8.3	7.9	12.5
							Share on total imports [2] (%)								
2000	**9.7**	5.4	8.9	9.1	5.7	6.1	8.1	29.1	6.8	14.3	8.2	5.6	10.7	9.2	13.5

(1) Total of partner countries: 8-digit level of the Combined Nomenclature.

(2) Total imports means all domains from 00 to 99 on 8-digit level of the Combined Nomenclature.

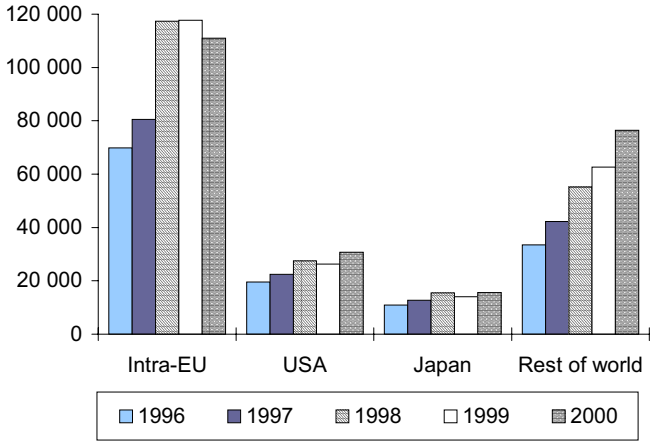
Source: *COMEXT (EEC Special Trade since 1988).*

ICT Imports

Total ICT imports of the European Union have always been in excess of its exports to its partners. Between 1996 and 1997 ICT imports rose by 18%, reaching a peak of 36.5% between 1997 and 1998. Demand for foreign ICT products rose more weakly thereafter, with a 5.9% increase in 2000.

Data on ICT imports indicates a high proportion of intra-EU commerce, Euro 111 billion out of the total which was around Euro 233.8 billion. The EU imported ICT goods from the USA in the order of Euro 30.8 billion and from Japan 15.6 billion, with the remaining Euro 76.5 billion imported from a range of countries.

Figure 2.6: ICT imports of EU-15, 1996-2000 (Mio Euro)



Source: *Comext (EEC Special Trade since 1988).*

Table 2.9: ICT trade balance [1]

	EU-15	B / L	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK
							ICT trade balance (Mio Euro)								
1996	**-17 839**	-899	-910	-3 972	-719	-2 391	-1 449	2 156	-3 587	-1 232	-1 179	-454	999	832	-5 034
1997	**-16 391**	-1 144	-802	-3 483	-833	-2 527	-1 402	3 996	-5 088	-1 639	-1 337	-465	1 645	1 612	-4 924
1998	**-25 318**	-1 791	-1 074	-7 541	-1 346	-4 437	-1 948	5 951	-6 520	-4 629	-2 064	-899	2 438	1 347	-2 806
1999	**-22 507**	-2 357	-1 162	-7 909	-1 494	-4 682	-2 133	7 612	-7 584	-3 303	-2 605	-896	3 452	3 941	-3 388
2000	**-14 963**	-1 604	-546	-3 820	-1 407	-4 882	-1 692	7 148	-6 443	-4 185	-1 677	-366	5 671	6 708	-7 868
							Average growth per year (%)								
1996-2000	**(-4.3)**	(15.6)	(-12.0)	(-1.0)	(18.3)	(19.5)	(3.9)	34.9	(15.8)	(35.8)	(9.2)	(-5.3)	54.4	68.5	(11.8)
							Share as % of Gross Domestic Product								
2000	**-0.2**	-0.6	-0.3	-0.2	-1.2	-0.8	-0.1	7.1	-0.6	-1.0	-0.8	-0.3	4.3	2.7	-0.5

(1) Total of partner countries: 8-digit level of the Combined Nomenclature.

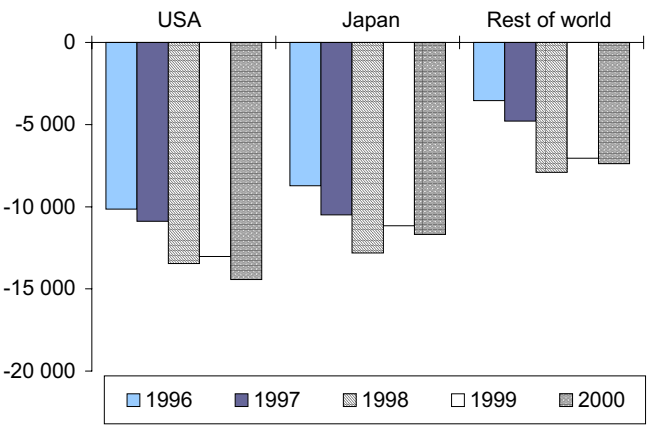
Source: *COMEXT (EEC Special Trade since 1988).*

ICT Trade balance

Since the end of the 1990s the aggregate ICT trade balance of the EU has witnessed a fall in the negative imbalance. At the local level, the UK imported over Euro 7.8 billion worth of products more than it exported, while Ireland, Sweden and Finland were the only three countries that sold more abroad than they had purchased from foreign trade partners. Of the three, Ireland and Finland prove to be particularly sensitive to the ICT sector given that for the former the, positive, ICT trade balance was equivalent to 7.1% of the GDP while for the latter it was 4.3%. These were much higher than for other EU countries.

It is evident that in this sector, between 1996 and 1999, the US was the main trading partner of the European Union, with intra-EU trade picking up and overtaking the trade figure with the US in 2000.

Figure 2.7: ICT trade balance of EU-15, 1996-2000 (Mio Euro)



Source: *Comext (EEC Special Trade since 1988).*

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ICT PENETRATION

Table 3.1: PC penetration

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
								Number of PC (Million)										
1995	**56.2**	1.8	1.4	15.6	0.4	3.5	7.8	0.7	4.8	0.1	3.1	1.3	0.6	1.2	2.2	11.8	86.3	15.1
1996	**64.7**	2.2	1.6	19.1	0.4	4.1	8.8	0.8	5.3	0.2	3.6	1.4	0.7	1.4	2.6	12.7	96.6	20.4
1997	**73.5**	2.5	1.9	21.0	0.5	4.2	10.2	0.9	6.5	0.2	4.4	1.7	0.7	1.6	3.0	14.3	109.0	25.5
1998	**84.7**	2.9	2.0	22.9	0.6	4.3	12.4	1.0	10.0	0.2	5.0	1.9	0.8	1.8	3.5	15.5	124.0	30.0
1999	**93.5**	3.2	2.2	24.4	0.6	4.8	13.0	1.5	11.0	0.2	5.7	2.1	0.9	1.9	4.0	18.0	141.0	36.3
								PC per 100 inhabitants										
1995	**15**	18	27	19	3	9	13	18	8	34	20	16	6	24	25	20	33	12
1996	**17**	22	31	23	4	10	15	21	9	38	23	17	7	27	29	22	37	16
1997	**20**	25	36	26	5	11	17	24	11	39	28	21	7	31	34	24	41	21
1998	**23**	29	38	28	5	11	21	27	17	39	32	24	8	35	40	26	46	24
1999	**25**	31	41	30	6	12	22	32	19	40	36	26	9	36	45	30	52	29

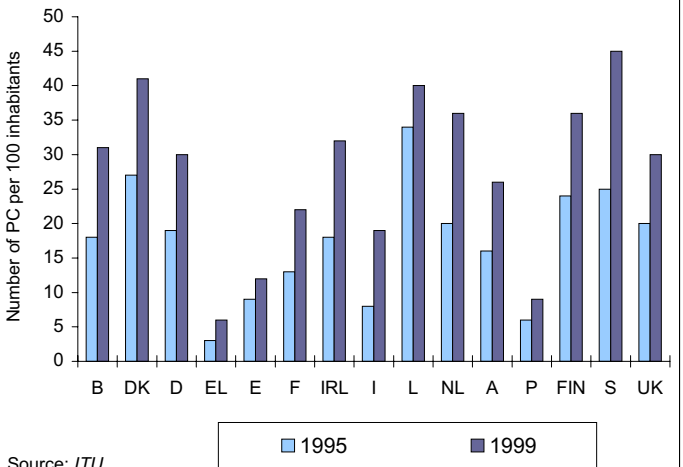
Source: *ITU*.

PC penetration

Over the last 5 years all Member States saw an important increase in the number of personal computers. Sweden, Finland, Denmark, Luxembourg and the Netherlands rank largely above the EU average, ranging between 36 and 45 PCs per 100 inhabitants. In Greece and Portugal, penetration remains low compared to the EU average (25), showing less than 10 PCs per 100 inhabitants.

The USA remains the largest market for PCs, representing 40% of global PC sales. By the end of 1999, more than 50% of the inhabitants in the United States disposed of a PC, while the corresponding share in the EU was only 25%. In November 2000, the ESIS research project estimated the EU penetration had risen to 34 PCs per 100 inhabitants.

Figure 3.1: PC penetration in the EU, 1995 and 1999



Source: *ITU*.

Table 3.2: Internet hosts

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Number of Internet hosts [1] (in 1 000)																		
1995	**1 894**	31	51	474	8	51	151	13	75	2	172	53	12	216	145	440	6 055	269
1996	**3 063**	65	107	620	17	113	239	27	148	4	271	89	24	314	238	719	10 113	734
1997	**4 652**	107	169	1 132	28	196	355	40	254	5	391	108	42	487	349	988	20 624	1 169
1998	**6 417**	209	298	1 450	50	307	511	56	387	8	626	173	56	460	379	1 449	30 489	1 688
1999	**8 488**	339	338	1 635	75	470	1 233	64	302	10	959	263	78	462	523	1 739	53 167	2 637
2000	**10 193**	300	327	2 006	111	356	1 118	111	976	12	1 523	483	63	533	596	1 678	80 558	4 641
2001	**11 363**	329	378	2 373	141	450	1 161	123	873	13	1 889	536	113	733	572	1 678	:	:
Internet hosts per 100 inhabitants																		
1995	**0.5**	0.3	1.0	0.6	0.1	0.1	0.3	0.4	0.1	0.5	1.1	0.7	0.1	4.2	1.6	0.8	2.3	0.2
1996	**0.8**	0.6	2.0	0.8	0.2	0.3	0.4	0.7	0.3	0.9	1.7	1.1	0.2	6.1	2.7	1.2	3.8	0.6
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	7.7	0.9
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	11.3	1.3
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	19.6	2.1
2000	**2.7**	2.9	6.1	2.4	1.1	0.9	1.9	2.9	1.7	2.7	9.6	6.0	0.6	10.3	6.7	2.8	29.4	3.7
2001	**3.0**	3.2	7.1	2.9	1.3	1.1	2.0	3.2	1.5	2.9	11.8	6.6	1.1	14.1	6.4	2.8	:	:

(1) The source for USA and JP is ISC. For USA they include country code Top Level Domains (TLDs) and generic TLDs eg .com

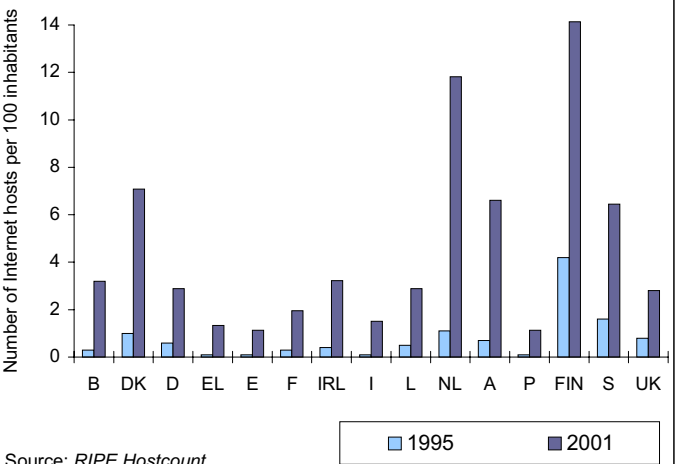
Source: RIPE. Figures refer to EU for end of the year, except for 2001; March figures. RIPE figures on hosts account for country code Top Level Domains (TLDs) only. Generic TLDs like .com, .org, etc. are not counted as part of EU-15 domains.

Internet hosts

There were 109 million Internet hosts world-wide in January 2001 (ISC estimates). Over half of all computers connected to the Internet were located in the USA. The EU counted around 11 million Internet hosts in March 2001, with an Internet penetration of 3 hosts per 100 inhabitants. The highest density in the EU is recorded in Finland and the Netherlands, with 14.1 and 11.8 hosts per 100 inhabitants respectively. Spain, Portugal, Greece and Italy have the lowest density with less than 2 hosts per 100 inhabitants.

Hosts are identified by their two-digit country code Top Level Domain (or three-digit code, Generic TLD, reflecting the type of organisation using the Internet). This does not necessarily entail that the host is physically located in the corresponding country, but reveals how many hosts are interested in being known in the respective countries. RIPE figures represent only country code TLDs, (generic TLDs are not included). The figures displayed in the table are likely to be inflated for USA as against the EU and Japan, since generic codes are generally attributed to the USA.

Figure 3.2: Internet Host penetration in the EU, 1995 and 2001



Source: *RIPE Hostcount* .

Table 3.3: Internet users

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
								Number of Internet users (in 1 000)										
1997	**19 340**	500	600	5 000	200	1 100	1 000	150	1 300	30	1 000	650	500	1 000	2 000	4 310	40 000	11 550
1998	**36 305**	800	1 000	10 500	350	1 733	3 500	300	3 000	50	1 600	600	600	1 311	2 961	8 000	60 000	16 740
1999	**55 942**	1 400	1 500	15 900	750	2 830	5 660	444	5 000	75	3 000	850	700	1 667	3 666	12 500	110 000	18 300
2000 [1]	**98 816**	2 326	2 580	24 280	1 000	5 490	10 000	1 040	13 420	120	7 280	3 000	1 000	2 300	5 000	19 980	153 840	38 640
2001 [2]	**114 063**	2 807	3 006	27 292	1 250	6 469	9 970	1 069	14 073	150	9 226	4 160	1 182	2 906	5 561	24 942	168 810	39 851
								Internet users per 100 inhabitants										
1997	**5.2**	4.9	11.4	6.1	1.9	2.8	1.7	4.1	2.3	7.2	6.4	8.1	5.0	19.5	22.6	7.3	15.0	9.3
1998	**9.7**	7.8	18.9	12.8	3.3	4.4	6.0	8.1	5.2	11.8	10.2	7.4	6.0	25.5	33.5	13.5	22.3	13.3
1999	**14.9**	13.7	28.2	19.4	7.1	7.2	9.7	11.9	8.7	17.5	19.0	10.5	7.0	32.3	41.4	21.0	40.5	14.5
2000 [1]	**26.2**	22.7	48.4	29.6	9.5	13.9	16.9	27.5	23.3	27.5	45.9	37.0	10.0	44.5	56.4	33.5	56.1	30.6
2001 [2]	**30.2**	27.3	56.2	33.2	11.8	16.4	16.8	27.9	24.3	33.9	57.7	51.3	11.8	56.1	62.6	41.7	61.1	31.5

(1) Nua, figures refer to November 2000; (2) Netsizer, figures refer to March 2001; Estimates for Greece and Luxembourg.

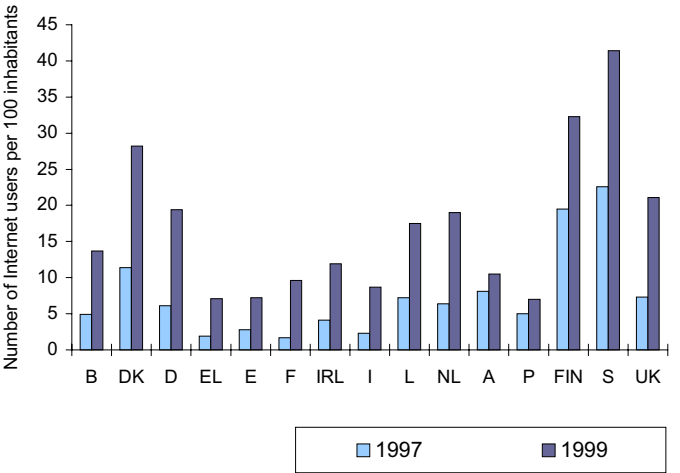
Source: *1997-1999 ITU estimates.*

Internet users

In March 2001, just under one third of the EU population had access to the Internet, the total number of EU Internet users estimated at 114 million (Netsizer, March 2001). Around 7% of the world's population are now online.

Among the EU Member States the highest penetration is reached in Sweden (above 62/100), followed by the Netherlands, Denmark and Finland (above 55/100 in 2001), while the lowest rates are found in Greece and Portugal, with 12 Internet users per 100 inhabitants. The competition among national telecom companies has been a determining element in the Internet boom in Europe. Moreover, the fact that most fixed networks have introduced special offers of combined services to their customers, identifying the Internet as a key service, has contributed further to its rapid acceptance.

Figure 3.3: Internet users in the EU, 1997 and 1999



Source: *ITU estimates.*

Table 3.4: Mobile phone penetration

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Mobile phone subscriptions (in 1 000)																		
1995	**21 160**	235	822	3 750	273	944	1 024	158	3 925	27	513	347	341	1 039	2 025	5 736	33 786	11 712
1997	**52 663**	974	1 444	8 170	938	4 338	5 817	533	11 734	67	1 717	1 160	1 507	2 162	3 169	8 933	55 312	38 254
1998	**90 145**	1 756	1 931	13 925	2 057	7 051	11 210	946	20 489	131	3 351	2 293	3 076	2 947	4 108	14 874	69 209	47 285
1999	**150 580**	3 193	2 628	23 470	3 904	12 300	21 434	1 655	30 296	209	6 900	4 206	4 672	3 364	5 165	27 185	86 047	56 849
2000 [1]	**235 209**	5 610	3 511	48 145	5 932	24 289	29 681	2 398	42 246	296	9 917	6 120	6 665	3 767	6 575	40 057	112 000	59 417
Mobile phones per 100 inhabitants																		
1995	**5.7**	2.3	15.8	4.6	2.6	2.4	1.8	4.4	6.9	6.6	3.3	4.3	3.4	20.4	23.0	9.8	12.9	9.3
1997	**14.1**	9.6	27.4	10.0	8.9	11.0	9.9	14.6	20.4	16.1	11.0	14.4	15.2	42.1	35.8	15.2	20.8	30.7
1998	**24.1**	17.2	36.5	17.0	19.6	17.9	19.1	25.6	35.6	30.8	21.4	28.4	30.9	57.3	46.4	25.2	25.7	37.5
1999	**39.1**	31.3	49.9	28.6	31.4	31.2	36.3	37.5	52.6	48.7	43.8	52.5	46.8	66.8	57.9	40.4	31.7	45.0
2000	**62.6**	54.8	65.9	58.6	56.2	61.6	50.5	63.5	73.2	67.9	62.5	75.6	66.7	72.8	74.2	67.2	40.9	47.0
Mobile phone subscriptions: % digital																		
1999	**96.0**	100.0	96.0	99.0	100.0	94.0	100.0	90.0	90.0	100.0	100.0	95.0	100.0	100.0	94.0	98.0	40.0	100.0

(1) 2000 data for Germany, France, Portugal: national regulatory bodies and operators, other countries: Mobile Communications.

Source: *ITU (year-end figures).*

Mobile phone subscriptions

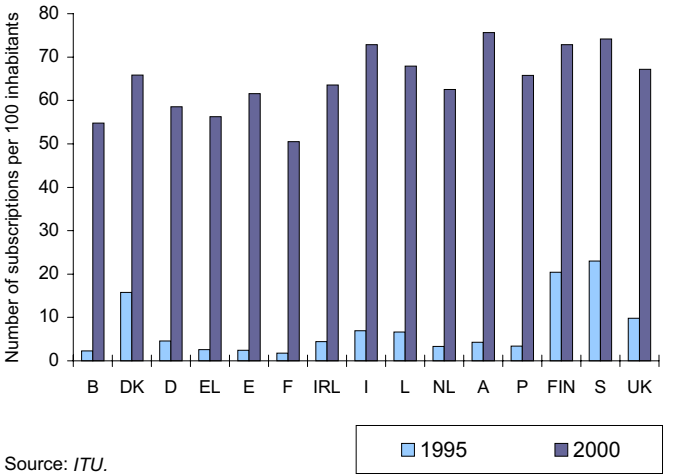
In December 2000, the EU recorded 235 million mobile phone subscriptions compared to around 112 million in the USA

Since 1999 the number of subscriptions for mobile telephone services have surpassed those for fixed lines in several EU countries (Finland, Italy, Portugal and Austria).

In 2000, on average, the EU recorded 62.6 mobile phone subscriptions per 100 inhabitants, compared to Japan's 47 and USA's 40.9. In terms of handsets, 96% of those held in Europe in 1999 were digital. In the same year, in Japan all mobile phones were digital, whereas in the US only 40% were.

The penetration of mobile phones in EU countries has increased considerably over the last few years, though 2001 appears to be a turning point with a decline in growth. The slowdown can probably be attributed to a certain level of market saturation, as well as to the reduction in subsidies for cheaper handsets to customers.

Figure 3.4: Mobile phone subscriptions in the EU, 1995 and 2000



Source: *ITU*.

Table 3.5: ISDN lines

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
EU penetration rate of ISDN channels [1]																		
1997	:	1	3	9	0	1	4	1	2	8	5	3	2	8	2	2	:	:
1998	:	2	6	12	0	1	5	2	3	14	10	5	3	10	4	3	:	:
1999	**8**	3	12	16	1	2	6	5	7	20	15	9	5	15	7	5	:	:
% ISDN channels / total number of lines																		
1997	**6**	2	4	14	0	1	5	2	2	10	8	5	3	8	2	3	:	:
1998	**7**	3	6	17	0	2	6	4	4	13	12	7	4	9	4	4	:	:
1999	**9**	4	10	19	1	3	7	6	7	17	14	9	6	11	6	5	:	:

(1) Penetration rate of ISDN channels per 100 inhabitants: channels permitting the use of the Internet and keeping the telephone line free simultaneously. Source: *ESIS (Nov. 2000).*

Table 3.6: Top 10 ISPs ranked by subscribers, September 2000

	AOL (US)	T-Online (D)	EarthLink (US)	Nifty (JP)	Juno (US)	Chollian (KR)	Terra (E)	Tin-it (I)	Hitel (KR)	Unitel (KR)
Number of subscribers (Mio)	24.6	7.0	4.6	4.0	3.7	3.7	3.5	3.5	3.4	3.4

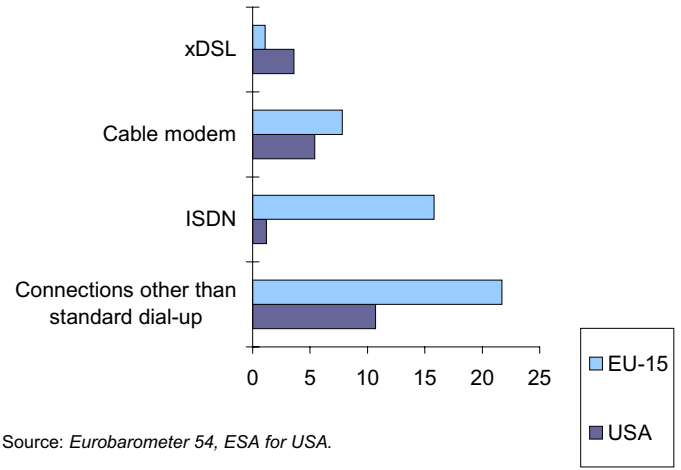
Source: *ITU, 2001 adapted from company reports.*

Internet Service Providers and broadband connections

Demand is constantly growing for faster access to the Internet. The initial response to meet the significant demand for higher bandwidth, was the Integrated Services Digital Network (ISDN) which works over conventional telephone lines. The percentage of European households with broadband (XDSL) access varies quite noticeably with the Nordic countries recording in 2000 2.3%, Germany 0.9%, France 0.6%, the UK 0.3%, Spain 0.2% and Italy 0.1% (Source: Jupiter MMXI)

Although there are approximately 15 000 Internet Service Providers (ISP) around the world there is a high degree of market concentration, with the top 20 serving approximately 45% of the market. The world's largest ISP is AOL (America Online) with more than three times the subscribers of the second largest one, Germany's T-Online. Of the top ten ISPs in the world, half emerged from telephone companies.

Figure 3.5: Internet Homes with faster connections, October 2000



Source: *Eurobarometer 54, ESA for USA.*

ICT penetration in other European countries

Table 3.7: PCs in other European countries

	IS	N	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI
							Number of PCs (1 000)								
1995	55	1 193	2 000	250	30	550	10	400	20	24	30	1 100	120	220	200
1996	70	1 392	2 400	:	:	700	15	450	:	:	:	1 200	170	250	250
1997	80	1 589	2 800	:	:	850	22	500	:	:	:	1 400	200	300	375
1998	90	1 660	3 000	200	94	1 000	165	660	150	200	60	1 900	480	350	420
1999	100	2 000	3 300	220	130	1 100	195	750	200	220	70	2 400	600	400	500
2000 [1]	:	:	:	361	:	1 342	:	:	:	:	80	6 400	713	:	548
							PCs per 100 inhabitants								
1995	20.5	27.4	28.3	3.0	4.7	5.3	0.7	3.9	0.8	0.6	8.1	2.9	0.5	4.1	10.1
1996	25.9	31.8	33.9	:	:	6.8	1.0	4.4	:	:	:	3.1	0.8	4.6	12.6
1997	29.3	36.1	39.5	:	:	8.3	1.5	4.9	:	:	:	3.6	0.9	5.6	18.9
1998	32.6	37.3	42.1	2.4	12.7	9.7	11.4	6.5	6.1	5.4	15.6	4.9	2.1	6.5	21.1
1999	35.7	44.9	46.2	2.7	16.7	10.7	13.4	7.3	8.2	5.9	17.9	6.2	2.7	7.4	25.1
2000 [1]	:	:	:	4.4	:	13.1	:	:	:	:	21.0	15.5	3.2	:	27.3

(1) Source: ISPO. Source: *ITU*.

Table 3.8: Internet hosts in other European countries

	IS	N	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI
								Internet hosts							
1995	8 000	84 000	80 000	1 100	390	21 856	3 578	16 000	1 321	458	86	23 000	1 740	2 900	5 600
1996	12 000	150 000	133 000	3 300	1 456	40 846	7 980	30 000	5 780	1 730	493	53 000	7 820	7 900	13 800
1997	19 000	292 000	189 000	6 800	3 014	56 869	15 831	68 000	7 088	4 045	821	88 000	13 570	14 500	19 500
1998	25 000	319 000	245 000	10 300	5 491	86 482	24 158	96 000	14 332	9 802	1 838	131 000	23 510	22 100	22 900
1999	29 872	438 961	269 812	16 832	6 225	122 253	30 103	119 642	18 877	14 193	6 005	171 217	36 294	28 183	23 559
2000 [1]	32 100	476 100	414 100	18 400	6 300	143 700	33 300	119 100	19 700	16 300	:	228 700	36 300	29 100	21 500
								Internet hosts per 100 inhabitants							
1995	3.0	1.9	1.1	0.0	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.3
1996	4.4	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	9.1	7.2	3.4	0.1	0.7	0.8	1.7	0.9	0.6	0.3	0.5	0.3	0.1	0.4	1.1
1999	10.7	9.9	3.8	0.2	0.8	1.2	2.1	1.2	0.8	0.4	1.5	0.4	0.2	0.5	1.2
2000 [1]	11.6	10.7	5.8	0.2	0.8	1.4	2.3	1.2	0.8	0.4	:	0.6	0.2	0.5	1.1

(1) July 2000; For Iceland, Norway and Switzerland the source is: OECD Communications Outlook 2001.

Source: *ITU and Ripe.*

Table 3.9: Internet users in other European countries

	IS	N	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI
Internet users (estimated) (1 000)															
1995	30	280	250	10	3	150	40	70	:	:	1	250	17	28	57
1996	40	400	370	60	5	200	50	100	40	10	4	500	50	100	100
1997	75	600	500	100	10	300	80	200	70	40	10	800	100	190	150
1998	100	1 000	1 000	150	30	400	150	300	100	80	20	1 581	150	500	200
1999	150	2 000	1 761	235	88	700	200	600	105	103	30	2 100	600	700	250
2000 [1]	:	:	:	430	80	1 000	380	650	150	103	26	5 200	690	700	300
Internet users per 100 inhabitants (estimated)															
1995	11.2	6.4	3.5	0.1	0.5	1.5	2.7	0.7	:	:	0.2	0.6	0.1	0.5	2.9
1996	14.8	9.1	5.2	0.7	0.7	1.9	3.4	1.0	1.6	0.3	1.1	1.3	0.2	1.9	5.0
1997	27.5	13.6	7.0	1.2	1.4	2.9	5.5	2.0	2.8	1.1	2.6	2.1	0.4	3.5	7.6
1998	36.2	22.5	14.0	1.8	4.0	3.9	10.3	2.9	4.1	2.2	5.2	4.1	0.7	9.3	10.0
1999	53.6	44.9	24.7	2.8	11.3	6.8	13.8	5.9	4.3	2.8	7.7	5.4	2.7	13.0	12.6
2000 [1]	:	:	:	5.2	10.6	9.7	26.3	6.4	6.1	2.8	6.9	13.5	3.1	13.0	15.2

(1) Source: ISPO.

Source: *ITU*.

Table 3.10: Mobile telephone subscribers in other European countries

	IS	N	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI
Mobile telephone subscribers (1 000)															
1995	31	981	447	21	44	49	30	265	15	15	11	75	9	12	27
1996	47	1 261	663	27	71	200	70	473	29	51	13	217	17	29	41
1997	65	1 677	1 044	70	92	526	144	706	77	165	18	812	201	200	94
1998	91	2 107	1 672	127	116	965	247	1 070	167	268	23	1 928	643	465	196
1999	173	2 745	3 000	350	148	1 945	387	1 628	274	332	38	3 956	1 400	918	626
2000 [1]	:	:	:	670	197	3 000	463	2 990	377	420	80	5 783	2 813	1 158	1 140
Mobile telephone subscribers per 100 inhabitants															
1995	11.5	22.5	6.3	0.2	6.9	0.5	2.1	2.6	0.6	0.4	2.9	0.2	0.0	0.2	1.4
1996	17.3	28.8	9.4	0.3	10.5	1.9	4.7	4.6	1.1	1.4	3.3	0.6	0.1	0.5	2.1
1997	23.9	38.1	14.7	0.8	13.0	5.1	9.9	6.9	3.1	4.5	4.7	2.1	0.9	3.7	4.7
1998	33.1	47.4	23.5	1.5	15.7	9.4	17.0	10.5	6.8	7.2	5.9	5.0	2.9	8.7	9.8
1999	61.6	61.7	42.0	4.2	19.0	19.0	26.7	15.9	11.2	9.0	9.6	10.2	6.3	17.1	31.5
2000 [1]	:	:	:	8.2	26.2	29.2	21.1	29.7	15.6	11.4	21.1	15	12.6	21.5	57.4

(1) Source: ISPO.

Source: *ITU*.

Table 3.11: ISDN subscribers in other European countries

	IS	N	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI
								ISDN subscribers							
1995	-	12 314	69 000	-	-	-	114	90	-	-	:	82	:	-	981
1996	769	43 988	126 000	-	28	-	279	1 756	-	-	:	238	:	-	1 794
1997	3 615	149 954	226 000	-	621	196	887	3 472	-	-	:	450	:	-	6 445
1998	7 724	:	334 000	3 000	1 279	2 753	2 307	5 650	918	1 642	:	1 213	:	771	14 305

Source: *ITU*.

ICT USAGE IN HOUSEHOLDS

Table 4.1: PCs in households

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US [1]	JP
PC ownership (% of households having a PC at home), 2000																		
Desktop [2]	**38.3**	42.0	59.0	32.0	15.0	34.0	29.0	28.0	35.0	45.0	66.0	32.0	20.0	45.0	56.0	36.0	51.0	:
Laptop	**6.8**	7.0	11.0	5.0	1.0	3.0	5.0	5.0	1.0	10.0	18.0	7.0	3.0	7.0	11.0	8.0	:	:
Palm computer or personal organiser	**3.5**	3.0	2.0	2.0	3.0	2.0	3.0	3.0	2.0	8.0	9.0	3.0	2.0	1.0	4.0	6.0	:	:
Households using a PC (%), 2000																		
Desktop [2]	**29.0**	31.0	54.0	28.0	11.0	27.0	24.0	22.0	26.0	32.0	61.0	30.0	18.0	37.0	50.0	32.0	:	:
Change in the penetration rate (%) of desktop PCs																		
1999-2000	**3.6**	9.0	2.3	1.5	2.8	5.6	6.2	1.7	8.4	2.5	7.2	1.2	1.6	6.4	-3.8	0.8	8.9	:

(1) 2001, NTIA and ESA, US Department of Commerce, figure for August 2000; (2) Eurobarometer 53, April 2000.

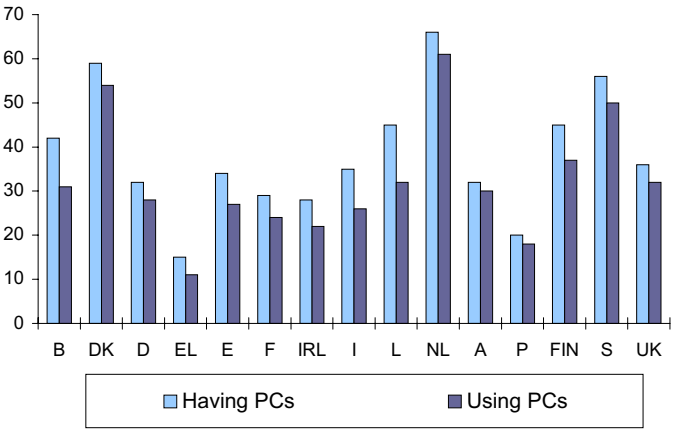
Source: *Eurobarometer 54, November 2000.*

PC usage in households

As regards the use of PCs in households the EU countries showed significantly diverging figures. In the Netherlands 66% of households owned a desktop PC compared to 15% in Greece. Dutch households also own most laptops and palm computers or personal organisers.

In fact, in growth terms, it was Italy, which led the way between 1999 and 2000, followed by Belgium, France and Greece. It should be mentioned that the US recorded a desktop growth rate well above most EU countries, not withstanding its much earlier and higher absorption of PCs.

Figure 4.1: Use of PCs in households in EU-15, April 2000 (%)



Source: *Eurobarometer 53, April 2000.*

Table 4.2: Internet connections in households

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US [1]	JP
Households having an Internet connection (%)																		
March 1999 [2]	**8.3**	8.2	24.6	7.1	2.9	5.0	3.9	8.4	6.1	14.0	19.6	6.8	3.4	17.2	39.6	10.7	:	:
April 2000	**18.0**	20.0	45.0	14.0	6.0	10.0	13.0	17.0	19.0	27.0	46.0	17.0	8.0	28.0	48.0	24.0	38.0	:
October 2000 [2]	**28.4**	29.2	51.6	27.1	11.7	15.7	19.0	35.5	23.7	36.3	54.8	38.0	18.1	43.5	53.8	40.9	41.5	:
Households using an Internet connection (%)																		
April 2000	**15.0**	15.0	41.0	11.0	5.0	7.0	11.0	14.0	14.0	18.0	42.0	16.0	7.0	23.0	43.0	22.0	:	:
Households having an ISDN line (%)																		
April 2000	**5.0**	4.0	9.0	12.0	0.0	1.0	2.0	1.0	3.0	12.0	13.0	8.0	1.0	6.0	4.0	4.0	:	:
Households using an ISDN line (%)																		
April 2000	**1.0**	1.0	1.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	:	:

(1) August 2000; (2) Eurobarometer 50.1, March 1999 and Flash Eurobarometer 88 "Internet et le grand public", October 2000.

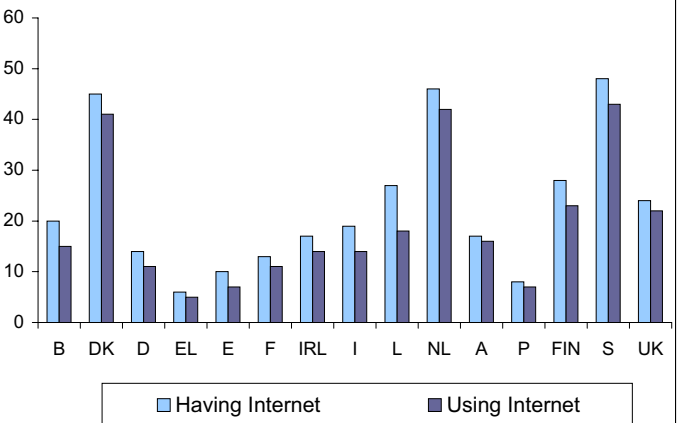
Source: *Eurobarometer 53, Spring 2000.*

Households with Internet connections

Private use of the Internet began to take off in the mid-90s after web browsers had been introduced and content started to expand rapidly.

In October 2000, Dutch and Scandinavian households were those with the highest Internet penetration. However, between March 1999 and October 2000, apart from the Netherlands, the United Kingdom, Ireland, Denmark and Finland saw the most pronounced progressions for this indicator. There were few households opting for faster connections in the form of Integrated Services Digital Network (ISDN). However, Germany followed at quite a distance by Austria and then the others, was the country which, in relative terms, had the highest ratios of ISDN lines to Internet connections, for households.

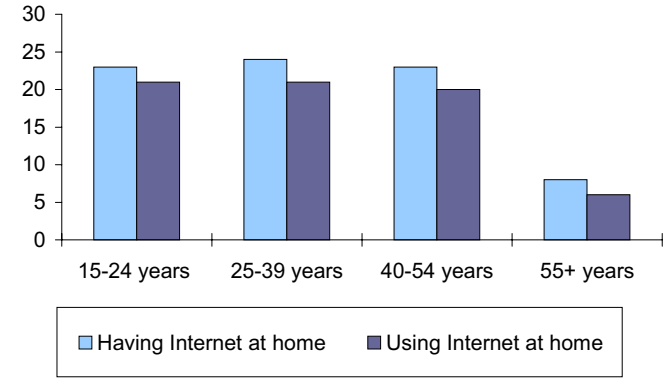
Figure 4.2: Households with Internet connections in EU-15, April 2000 (%)



Source: *Eurobarometer 53, Spring 2000.*

Demographic characteristics of Internet users

Figure 4.3: Age groups of EU-15 households with Internet connection, 2000 (%)



Source: *Eurobarometer survey, EB 53, April 2000.*

Table 4.3: EU-15 households having/using Internet (%)

		Have	Use
Occupation categories	Self-employed	24	21
	Employed	23	20
	Not working	13	10
Income categories	Highest income	37	32
	Medium high	20	17
	Medium low	11	9
	Lowest income	8	7
Academic level of categories	Finished before 16 years old	6	4
	Finished between 16 and 19	17	14
	Finished after 20	33	29
	Still studying	33	29
Gender groups	Male	21	16
	Female	19	12

Source: *Eurobarometer survey, EB 53, April 2000.*

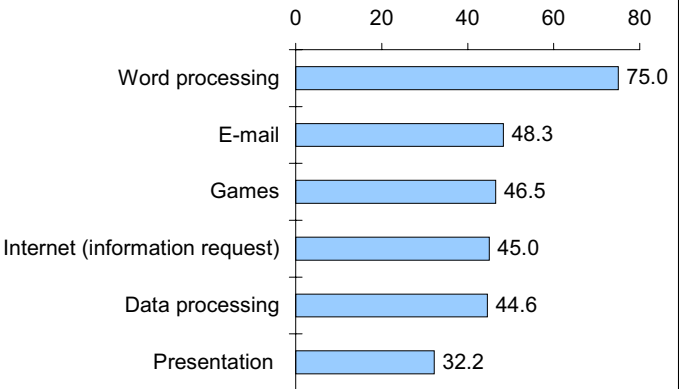
Purpose of PC/Internet use

Not withstanding the significant increase in the usage of PCs over the past few years in various areas, three quarters of the people operating them in 2000 indicated that word processing remains the leading function they are used for in the EU.

The next most used applications for PCs are e-mail and games. E-mail is clearly 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 (eg. text, sound, images).

The Internet follows closely, because of its ease of use for searching vast amounts of information, providing a quasi-infinite 'library'.

Figure 4.4: Main usage of computer in EU-15, 2000 (in % of persons using a PC)



Source: *Eurobarometer survey, EB 54, November 2000.*

Table 4.4: Monthly basket of local telephone[1] residential charges (US PPP) in households, 1998 and September 2000

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
								20 hours/Month with discount plan										
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
								Change 1998-2000 (%)										
Peak	-34	-47	-44	-50	-30	8	-53	-33	-24	-20	-20	-55	-23	5	-26	-42	-46	-31
Off-Peak	-30	-23	-4	-50	-39	-33	-30	-39	-26	-29	-12	-49	-1	40	-34	-42	-46	-31

(1) Public switched telephone network (PSTN).

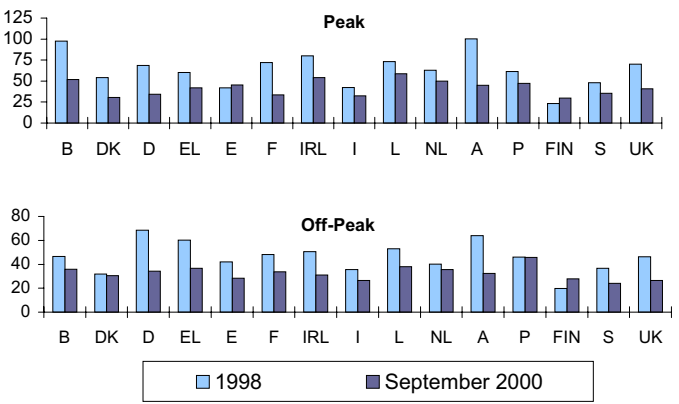
Source: *OECD Communications Outlook 2001*.

Household expenditure for ICT

From Table 4, as expected, it can be seen that already in 1998 many countries charged less for local Public Switched Telephone Network (PSTN) at off-peak times. This case held in almost all cases even in September 2000, by which time almost all countries had reduced charges further. However, Spain actually increased its peak tariff and Finland raised both peak and off peak ones. The US, Germany and Japan already charged a flat rate in 1998, maintaining it in 2000. Spain and Greece abandoned this pricing strategy contrary to Denmark and France which implemented it in 2000.

In Europe, Finland had the cheapest peak rates and Sweden the cheapest off-peak ones. Proportionally, Austria, France and Germany registered the largest fall in prices reflecting their very high rates in 1998.

Figure 4.5: Monthly basket of local telephone residential charges 20hrs/Month with discount plan, 1998 and September 2000



Source: *OECD Communications Outlook 2001.*

Access for all in the Information Age

Technology offers an enormous potential to increase the usage rates of computer and Internet among people with disabilities. But technology can also be an additional barrier if products are not designed to be accessible. Innovations in the private sector, as well as support from public entities, are helping to ensure that more people have access to the Information Age by developing hardware and designing Web sites that are accessible by everyone. The noticeable proportions of disabled people in the EU and the US confirm the need for immediate action on this front.

The introduction of the Web Accessibility Initiative[2] (WAI) guidelines in all, public web-sites both in Member States and in European institutions is the first step towards an "Information Society for all".

Table 4.5: Disability status of persons above 16 years, 2000

	EU-15		USA	
	Number (1 000)	%	Number (1 000)	%
Has any disability	37 833	15.0	45 413	21.8
Visual impairment	5 044	2.0	7 310	3.5
Hearing impairment	7 567	3.0	6 961	3.3
Learning difficulties	5 044	2.0	2 945	1.4

Sources: *EU: Eurostat estimates for 2000, USA: Survey on Income and program Participation, 1999; US Census Bureau, US dept of Commerce.*

[2] See WAI guidelines, Communication of the Commission in preparation.

ICT USAGE BY ENTERPRISES

Table 5.1: Number of 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										
July 1998	**3 004**	52	44	492	8	239	222	56	167	11	127	98	27	68	145	714	14 674	429
February 1999	**4 676**	117	73	1 083	30	367	449	65	306	18	245	187	51	128	298	1 259	24 532	962
March 2000	**10 914**	240	210	2 835	69	619	1 058	177	619	37	462	344	89	281	631	3 243	47 056	1 946
July 2000	**16 588**	268	289	3 761	87	759	1 297	245	795	44	541	447	116	343	811	4 404	65 565	2 900
								Growth of the number of secure servers (%)										
July 2000/ July 1998	**452**	415	557	664	988	218	484	338	376	300	326	356	330	404	459	517	347	576
								Number of secure servers per 1 million of inhabitants										
July 1998	**8**	5	8	6	1	6	4	15	3	26	8	12	3	13	16	12	55	3
February 1999	**13**	11	14	13	3	9	8	18	5	42	16	23	5	25	34	21	90	8
March 2000	**29**	24	40	35	7	16	18	48	11	87	29	42	9	54	71	55	170	15
July 2000	**44**	26	54	46	8	19	22	65	14	101	34	55	12	66	92	74	239	23

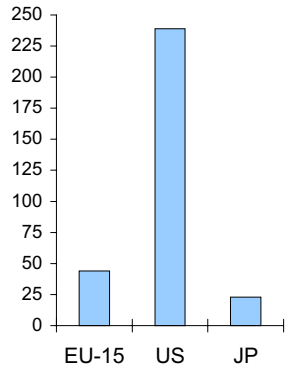
Source: *Netcraft, OECD.*

Secure servers

A number of indicators can be used to assess the expansion of e-Commerce. The number of secure servers is usually cited, together with the number of Internet hosts.

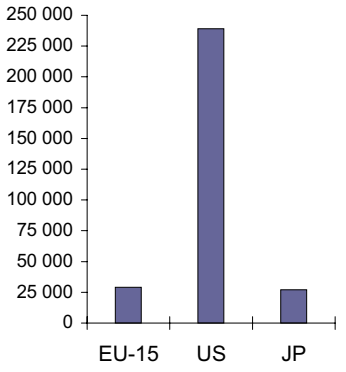
Secure servers allow users to encrypt information (e.g. credit card data) that facilitates e-Commerce. A count of secure servers provides a measure of the distribution of e-Commerce activities across countries. In July 2000, there were 16 588 secure servers in Europe, on average, an increase of 452% compared to July 1998, for the 15 countries. The USA recorded just below 4 times more the number of secure servers than the European Union's total. Japan, however, did even better, witnessing a rise of secure servers equivalent to 576% during the period analysed.

Figure 5.1: Secure servers and Internet hosts in the Triad, 2000



Secure servers per 1 million inhabitants

Source: *Netcraft, OECD.*



Internet hosts per 1 million inhabitants

Source: *RIPE.*

Table 5.2: Internet/Intranet/EDI usage in enterprises

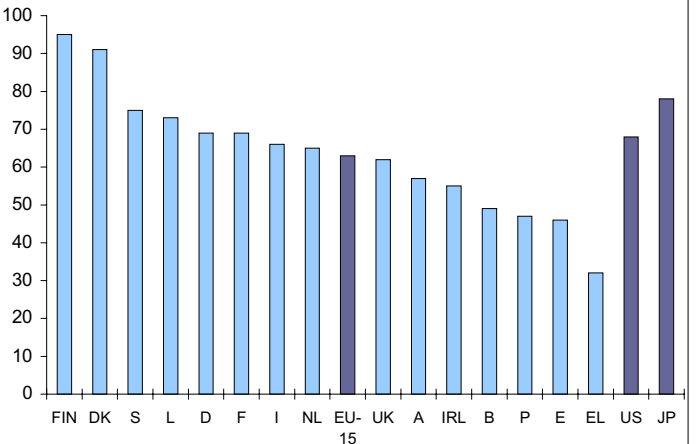
	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Enterprises with Internet access (%) [1]																		
1998	**50**	38	80	50	25	32	45	44	47	59	:	:	32	87	61	48	57 [2]	73 [2]
1999	**63**	49	91	69	32	46	69	55	66	73	65	57	47	95	75	62	68 [2]	78 [2]
Growth of the % of enterprises with Internet access (%)																		
1999/1998	**27**	29	14	38	28	44	53	25	40	24	:	:	47	9	23	28	19	7
Enterprises with presence on Internet (%) [3]																		
1999	**:**	:	56	47	:	42	28	46	23	:	42	:	:	66	54	53	54 [2]	50 [2]
2001 (planned)	**:**	:	76	69	:	62	51	64	42	:	64	:	:	84	72	72	68 [4]	52 [4]
Enterprises using Intranet (%) [3]																		
1999	**:**	:	57	31	:	32	26	28	18	:	37	:	:	41	56	35	29 [2]	37 [2]
2001 (planned)	**:**	:	71	49	:	50	50	54	38	:	61	:	:	59	68	59	56 [4]	41 [4]
Enterprises using EDI (%) [2]																		
1999	**:**	:	:	39	:	:	28	:	7	:	:	:	:	:	:	32	33	27

(1) ESIS, October 2000; (2) IBS 2000, October 2000; (3) ECaTT, August 2000, (4) 2000 data. IBS 2000, October 2000.

Enterprises and the Internet

63% of European enterprises had access to Internet in 1999, up 27% compared with 1998, showing that European enterprises progressively reduced the gap with the USA and Japan (68% and 78% respectively). The presence of firms on the Internet, the use of Intranet, or of Electronic Data Interchange (EDI), also enable to measure the readiness of the European economies for e-Commerce to be measured. More and more European enterprises exploit the potential of the Internet by developing marketing web sites, but also by implementing Intranets in order to optimise operations throughout the supply chain. EDI has been used by large companies for several years to carry out business to business (B2B) commerce. This closed proprietary network avoids security issues related to the Internet, but is not adapted to firms of all sizes. In percentage terms, EDI still takes the lion's share of B2B. However, the Internet is becoming the leading medium for spreading electronic business between firms, with the development of dedicated electronic market places (650 in Europe at the end of 2000, according to EITO 2001).

Figure 5.2: Enterprises with Internet access (%), 1999



Source: *ESIS 2000. Data for USA and Japan, IBS 2000.*

Table 5.3: e-Commerce usage by enterprises

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Enterprises selling on line (%) [1]																		
1999	:	:	15	10	:	7	5	15	3	:	10	:	:	30	10	16	:	:
2001 (planned)	:	:	28	21	:	21	21	33	13	:	22	:	:	45	17	39	28 [2]	20 [2]
Enterprises purchasing on line (%) [1]																		
1999	:	:	38	26	:	28	12	35	14	:	32	:	:	46	38	34	:	:
2001 (planned)	:	:	51	46	:	43	36	56	31	:	41	:	:	57	52	49	53 [2]	15 [2]

(1) ECaTT, August 2000.

(2) 2000 data. IBS 2000, October 2000, Businesses allowing customers to order on line/Businesses ordering supplies on line. On line means via e-mail, a website, an EDI link or Extranet.

e-Commerce definition

In the narrow sense, e-Commerce is defined as a transaction reflecting the sale or purchase of goods or services via Internet. The transaction could be carried out through a web page, Extranets or other applications such as EDI over the Internet or any other web-enabled application including mobile phones and TV sets. The payment and the ultimate delivery of goods or services may be conducted on or off-line.

In a broader sense, e-Commerce transactions are Internet transactions plus transactions conducted over EDI, or any other online application used for automated transactions (e.g. Minitel, interactive telephone systems). Transactions over facsimile, telephone or non-interactive e-mail are not included in this definition.

Electronic transactions can take place whether between businesses, private consumers or government. e-Commerce commonly refers to B2C and B2B which currently dominate e-transactions.

e-Commerce and broader Internet applications

	Government	Business	Consumer
Government	G2G *e.g.* co-ordination	G2B *e.g.* information	G2C *e.g.* information
Business	B2G *e.g.* procurement	B2B *e.g.* e-Commerce	B2C *e.g.* e-Commerce
Consumer	C2G *e.g.* tax compliance	C2B *e.g.* price comparison	C2C *e.g.* auction markets

Source: *OECD.*

Table 5.4: e-Commerce usage by Small and Medium sized enterprises (SMEs)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
SMEs with Internet access (%)																		
1999 [1]	**45**	48	55	57	24	35	39	58	36	47	44	50	22	60	70	38	:	:
receiving orders	**10**	8	12	15	4	5	7	9	11	5	11	16	3	13	25	8	:	:
2000 [2]	**70**	72	84	84	44	67	59	84	68	70	80	75	37	76	71	70	41 [3]	27 [3]
with a web site	**40**	34	57	54	21	34	33	53	40	46	48	45	14	49	47	40	30 [4]	18 [4]
SMEs with Internet access using B2B (%) [2]																		
2000	**27**	28	24	28	19	25	31	26	20	29	23	25	20	20	23	36	23 [5]	6 [5]
SMEs with Internet access using B2C (%) [2]																		
2000	**26**	16	29	37	16	18	18	22	18	28	12	27	20	21	26	32	13 [6]	8 [6]
SMEs using Intranet (%) [7]																		
2000	**:**	:	:	19	:	:	19	:	15	:	:	:	:	:	25	15	21	12
SMEs using EDI (%) [7]																		
2000	**:**	:	:	15	:	:	23	:	19	:	:	:	:	:	10	11	13	14

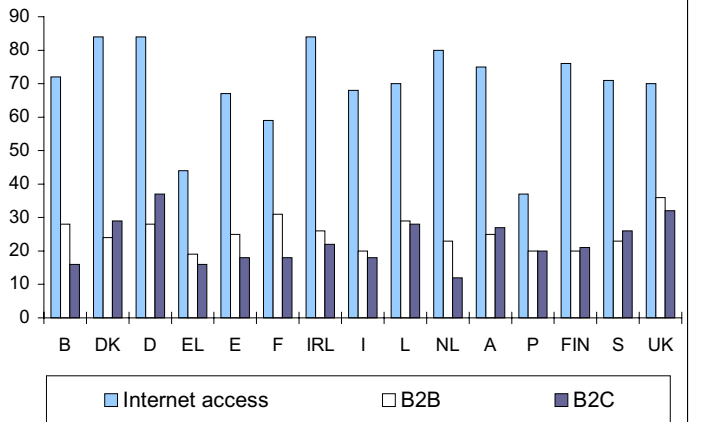
(1) European Network for SME Research (ENSR), 1999; (2) 2000 EB 78, March 2000; (3) IBS 2000, October 2000. SMEs having a website or a frequent use of external e-mail or EDI; (4) Marketing websites. IBS 2000, October 2000; (5) IBS 2000, October 2000, SMEs ordering supplies on line via e-mail, a website, an EDI link or an Extranet; (6) IBS 2000, October 2000, SMEs allowing customers to order on line via e-mail, a website, an EDI link or an Extranet; (7) IBS 2000, October 2000.

Use of e-Commerce

The use of e-Commerce is still limited among European firms. Although 70% of European Small and Medium sized enterprises (SMEs) had Internet access in 2000, there are only about one quarter of them that have already developed electronic commerce activities.

According to European businesses a number of barriers impede the development of electronic commerce, as for example, the lack of security of transactions and payments. However, Small and Medium sized enterprises (SMEs) which can be more flexible and able to easily reorganise their processes, should benefit significantly in the future from the convenience of carrying out business through the Internet.

Figure 5.3: Internet access and e-Commerce in SMEs (%), 2000



Source: *Special EB 78, April 2000.*

Table 5.5: e-Commerce revenues and investments

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
B2C, 1999																		
Market value (Euro Mio) [1]	**:**	:	700	3 600	:	400	3 400	100	1 100	:	:	:	:	800	700	5 300	:	:
Value of transactions (Euro Mio) [2]	**3 384**	77	43	1 125	:	66	324	:	182	:	171	90	66	48	218	976	22 678	1 546
Spending per head (Euro) [1]	**:**	:	160	50	:	10	70	40	20	:	:	:	:	200	100	110	1 095 [3]	:
e-Commerce investment, 1999																		
(Euro Mio) [4]	**1 136**	22	5	91	0	30	349	34	64	:	140	1	5	23	132	241	:	:

(1) ECaTT, August 2000; (2) OECD, 2000, converted from US$ into Euro; (3) Average online shopping household (converted from US$ into Euro), Nua and Forrester Research, September 1999; (4) Money for growth, Technology Investment Report 1999, PricewaterhouseCoopers. Investments in e-Commerce related activity across all industry sectors.

The growth of e-Commerce

In 1991, there were less than 3 million Internet users world-wide and Internet commerce was not yet known. In 1999, around 250 million users accessed the Internet, approximately 25% of which (mostly in the USA) purchased online (B2B and B2C).

In 1999, the value of B2C transactions in the EU-15 amounted to around 3.4 billion Euro, representing around 0.2% of total retail sales. B2B represents the largest share in e-Commerce and is expected to experience a higher growth rate than B2C over the next few years.

One of the factors currently impeding the use of electronic commerce by European households is the cost of Internet access, since charges are still being metered in most Member States.

At present, the average time spent online in markets with unmetered charges is far higher than in those with metered ones.

High Internet access rates and growth of e-Commerce in Europe will be achieved through local loop unbundling, reducing costs and increasing the bandwidth of local access capacity, as well as introducing unmetered Internet tariffs.

On the other hand, the growth of e-Commerce in Europe will benefit from the development of the Internet mobile. Europe is expected to become a heavy user of mobile e-Commerce (any transaction with a monetary value conducted via mobile telecommunications networks) in the future. Quality and relevance of multimedia content, handset availability and design, prices and relevant pricing strategies will determine the success of 3G services

Table 5.6: Number of teleworkers

	EU-15 [1]	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Number of teleworkers (1 000)																		
1994 [2]	**1 484**	18	10	149	17	102	215	15	97	1	80	8	25	60	125	563	5 519	:
1997 [3]	**4 530**	200	250	600	20	80	240	50	250	:	600	50	60	150	180	1 800	:	:
formal	**1 125**	5	100	400	2	5	30	10	40	:	200	5	3	15	30	280	:	:
1999 [4]	**9 009**	:	280	2 132	:	357	635	61	720	:	1 044	86 [5]	:	355	594	2 027	20 400 [6]	2 090 [7]
regular	**:**	:	180	1 560	:	260	500	30	580	:	590	37	:	230	310	1 270	9 300 [6]	:
occasional	**:**	:	100	570	:	100	140	40	140	:	450	49	:	130	280	750	:	:
Share in the total labour force (%)																		
1994 [2]	**1.0**	0.5	0.4	0.4	0.5	0.8	1.0	1.4	0.5	0.5	1.2	0.3	0.6	2.5	3.8	2.2	4.5	:
1997 [3]	**3.1**	5.3	9.7	1.9	0.5	0.6	1.1	6.1	1.2	:	9.1	1.5	1.3	6.3	5.4	7.0	:	:
formal	**0.8**	0.1	3.9	1.1	0.1	0.0	0.1	1.2	0.2	:	3.0	0.2	0.1	0.6	0.9	1.1	:	:
1999 [4]	**6.0**	:	10.5	6.0	:	2.8	2.9	4.4	3.6	:	14.5	2.4 [5]	:	16.8	15.2	7.6	14.7 [8]	7.9 [7]
regular	**:**	:	6.6	4.4	:	2.0	2.3	1.9	2.9	:	8.3	1.0	:	10.8	8.0	4.8	6.7 [8]	:
occasional	**:**	:	3.9	1.6	:	0.8	0.6	2.6	0.7	:	6.3	1.4	:	6.0	7.2	2.8	:	:

(1) For available data only; (2) 1997 EC Status Report on European Telework, September 1997; (3) ETD estimates, 1998 EC Status Report on European Telework, August 1998; (4) ECaTT, August 2000; (5) 1998 data (Statistik Austria), 2000 EC Status Report on European Telework, September 2000; (6) 1999 Telework America Survey; (7) Forecast. Full-time white-collar teleworkers. Japan Telework Association, 1997; (8) Share in US civilian labour force on 1st January of each year (seasonally adjusted), BLS.

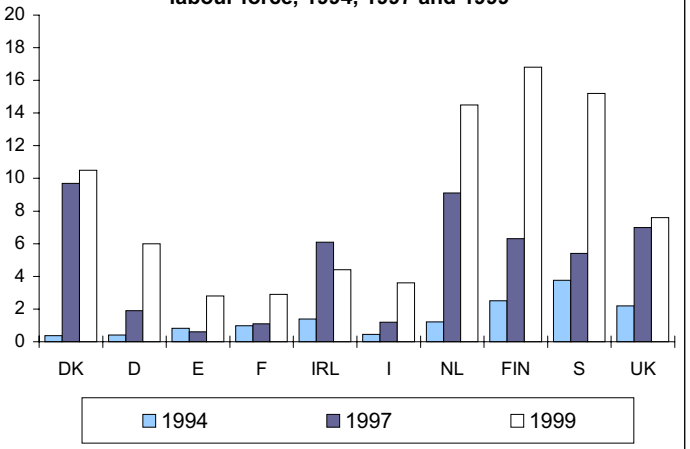
Telework - Telecommuting

If telework is defined in a broad manner, in 1999 there were over 9 million Europeans engaged in telework (6% of the labour force), around 6 million of which were regular teleworkers.

The leader in the number of regular teleworkers, as a fraction of the total labour force, is Finland (10.8%), followed by the Netherlands (8.3%), Sweden (8.0%), and the USA (6.7%).

Discerning trends in teleworking is complicated by the lack of a common definition across different surveys in the past. Forecasts on the evolution of telework penetration in the next decade indicate that Europe should close the gap with the USA.

Figure 5.4: Teleworkers as % of labour force, 1994, 1997 and 1999



Source: *National statistics (1994); ETD (1997); ECaTT (1999).*

ICT USAGE BY ADMINISTRATION AND FOR EDUCATION

Table 6.1: Public Internet Access Points (PIAPs)

	EU-15	B	DK	D	EL	E	F [1]	IRL	I	L	NL	A	P	FIN	S	UK
							Number of PIAPs									
January 2001	:	601	781	4 700	:	:	1 603	590	:	:	1 050	342	:	2 380	989	1 763
							Number of PIAPs per 1 000 inhabitants									
January 2001	:	0.08	0.15	0.06	:	:	0.03	0.16	:	:	0.07	0.04	:	0.46	0.11	0.03

(1) France is expanding its PIAPs target to 7000.

Source: *ESDIS, January 2001*

Table 6.2: Locations for learning to use the computer

	Alone at home	Men	Women	At work (alone/assisted by colleagues)	Men	Women	At school	In a training course	At a friend's place
Percentage of EU computer users, multiple answers	45.4	50.2	39.5	30.0	31.3	28.3	24.1	22.0	14.5

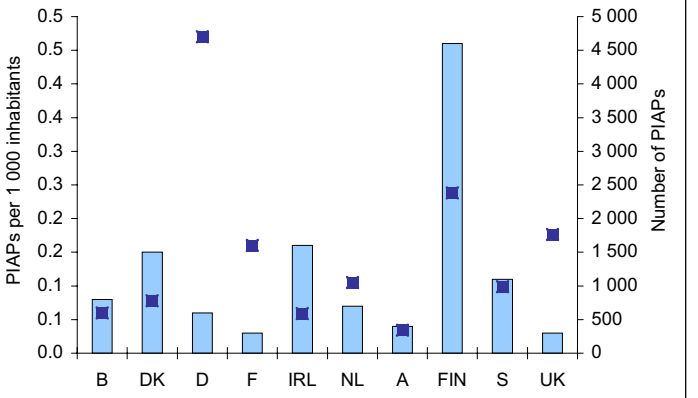
Source: *ESDIS, January 2001.*

Public Internet Access Points (PIAPs)

Governments and local authorities have been recently making significant efforts to provide Public Internet Access Points for users who are less likely to benefit from the availability of the internet in places such as academic venues and commercial offices, or having it at home.

In absolute terms, Germany clearly leads the way with Finland coming second. The latter country can boast the highest figure when measuring per 1 000 inhabitants.

Figure 6.1: Public Internet Access Points (PIAPs), January 2001



Source: *ESDIS, January 2001.*

Table 6.3: Schools with Internet connection

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Computers per 100 pupils at primary and secondary school level (%) [1]																		
Primary	**6.8**	9.0	23.5	4.3	1.5	6.9	6.4	8.6	4.5	45.8	11.9	9.3	3.8	13.4	10.1	8.5	:	:
Secondary	**11.3**	12.4	66.9	7.1	6.0	7.4	10.5	12.1	11.1	16.0	11.0	11.7	5.7	14.8	23.1	15.5	:	:
Schools linked to Internet (beginning of academic year 1999-2000) (%) [2]																		
Primary	**59**	70	94	56	1	80	30	80	75	25	38	63	42	90	57	86	97 [3]	:
Secondary	**89**	95	100	81	18	95	84	90	90	100	86	100	100	95	99	98	100 [3]	:
Computers connected to the Internet per 100 pupils at primary and secondary school level (%) [1]																		
Primary	**2.8**	2.7	11.3	1.6	0.7	2.6	2.1	2.7	1.7	17.7	2.8	1.4	1.1	9.2	6.6	3.9	:	:
Secondary	**6.4**	6.4	30.0	4.4	1.7	3.3	4.6	6.1	5.2	14.9	5.4	8.8	2.5	13.6	20.9	10.6	:	:

(1) eEurope 2002 based on Eurobarometers Flash 94 “Headteachers” of June 2001.

(2) ESDIS, February 2001 (Ministries for Education).

(3) National Center for Education Statistics, 2001.

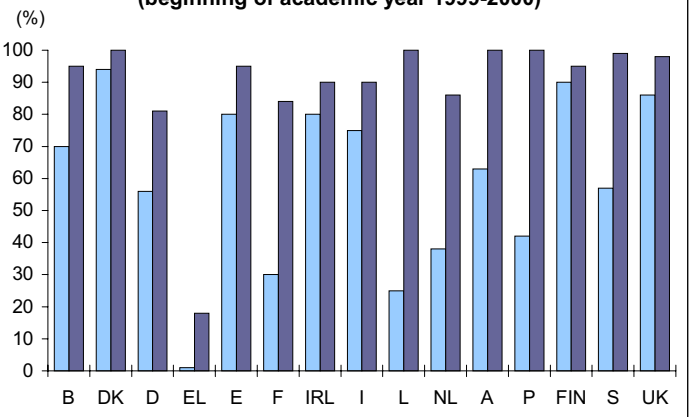
Schools with Computers/Internet

Apart from Luxembourg and the Netherlands, all countries provide more access to computers for pupils at the secondary level than for those in primary schools. Luxembourg is the only country where computers connected to the Internet are more numerous at primary school level.

Denmark shows the largest gap between primary and secondary schools which have computer and Internet facilities per 100 pupils. Luxembourg shows the widest margin (75%) between the secondary and primary schools being connected to the Internet, followed by Portugal and then France (54%).

At secondary level, Greece has only 18% of schools connected. However, as data relates to 1999/2000 figures might have grown since then, as the EU's goal is that 100% of schools have an Internet connection by the end of 2001. Yet it should be noted that figures are not fully comparable as school systems differ across countries.

Figure 6.2: Percentage of schools linked to Internet (beginning of academic year 1999-2000)



Source: *ESDIS, February 2001 (Ministries for Education).*

Table 6.4: ICT training graduates

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
Intensity of graduate output, 1997 (%)																		
Total graduates as % of 20-24 year olds	**8.4**	10.6	8.3	7.1	3.1	6.7	13.7	11.9	4.1	:	8.1	4.1	5.0	9.2	6.2	12.3	14.2	11.0
Total graduates in S&T[1] as % of 20-24 year olds	**3.1**	3.1	2.6	3.2	:	2.1	4.3	4.2	1.2	:	2.4	1.3	1.4	5.3	2.9	4.5	4.1	3.2
School teachers with Information Society literacy (%)																		
January 2001	**:**	:	50.0	:	6.0	58.0	55.0	75.0	63.0	:	:	54.0	:	54.0	:	71.0	:	:
Central administration workers trained in ICTs (%)																		
January 2001	**:**	80.0	82.0	:	23.0	80.0	:	66.0	29.0	38.0	100.0	90.0	:	:	100.0	:	:	:

(1) Science and technology.

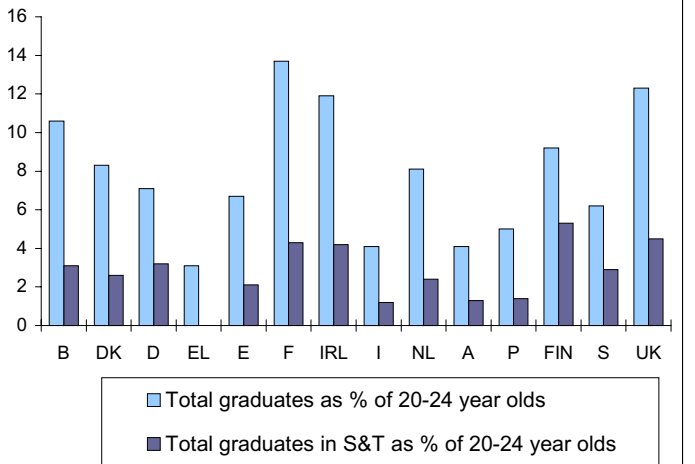
Source: *ESDIS, January 2001.*

IT Training – Education and Administration

For the age group between 20 and 24, the US displays proportionally more graduates than the EU-15 and Japan, although relative to Finland, the United Kingdom and France it does not appear to have as many graduates in subjects relating to Science and Technology. When looking at the overall percentage of graduates, the countries that record the highest figures are also among those which have the shortest duration of university degrees, explaining why they witness a greater number of students completing their academic courses by a certain age.

In Europe, some countries also allow students to repeat exams several times, prolonging the period required to graduate. Irish and UK teachers are apparently the most IS literate, though methods of assessing such skills differ across countries. At the central administration level, Swedes and Dutch lead the way having trained 100% of staff in ICT.

Figure 6.3: Intensity of graduate output, 1997 (%)



Source: *ESDIS, January 2001 (Eurostat/UNESCO/OECD).*

Table 6.5: ICT training places

	EU-15	B	DK	D	EL	E [1]	F	IRL	I	L	NL	A	P	FIN	S	UK
ICT training places at 2nd and 3rd level, January 2001																
2nd level (Technicians)	:	:	:	53 000	28 600	86 184	75 000	7 495	:	:	:	:	:	12 831	32 350	:
3rd level (Professionals with university degree)	:	:	11 000	88 309	6 800	122 364	60 200	12 057	:	:	:	:	:	23 623	9 200	105 300
ICT related training places at 3rd level per 1 000 inhabitants, January 2001																
3rd level /1 000 inhabitants	:	:	2.08	1.07	0.67	3.11	1.02	3.26	:	:	:	:	:	4.54	1.03	1.78

(1) For 3rd level training places: 53 507 in 5 year studies, 68 858 in 3 year studies.

Source: *ESDIS, January 2001.*

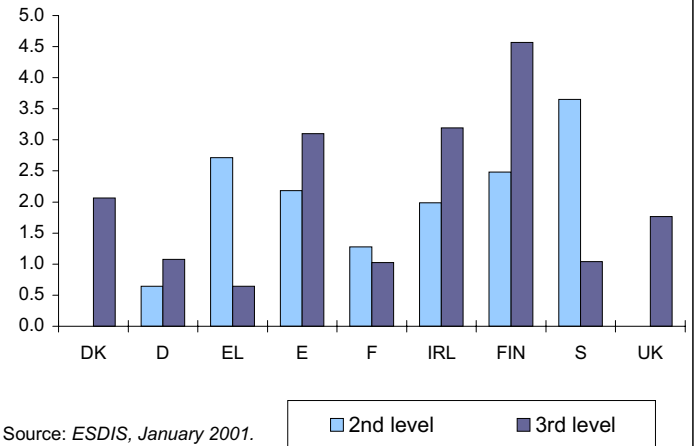
Number of Training places

Spain and the United Kingdom share the top of the list for ICT training places at third level, in absolute terms which concern highly skilled professionals with university degrees.

In absolute terms Spain also comes first for second level training places.

However, Finland leads in the number of third level ICT-related training places per 1 000 inhabitants.

Figure 6.4: ICT training places at 2nd (Technicians) and 3rd (Professionals with university degree) level per 1 000 inhabitants, January 2001



Source: *ESDIS, January 2001.*

Table 6.6: e-Government

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	US	JP
									Number of local communities [1]									
	98 544	589	276	16 176	5 921	8 077	36 664	3 445	8 100	118	672	2 351	4 208	455	286	11 206	:	:
									Survey sample: authorities interviewed									
	1 774	72	100	150	100	153	362	50	154	30	104	99	100	100	100	100	:	:
									Municipalities with Web-sites for citizens (%)									
April 2000	**56**	38	70	77	21	41	33	52	56	60	27	73	53	94	100	92	:	:
									Web-sites of municipalities with E-mail addresses of officers (%)									
April 2000	**62**	44	63	56	57	42	48	65	51	33	29	81	55	90	93	62	:	:
									e-Versions of official forms on Web-sites of municipalities (%)									
April 2000	**28**	26	56	21	33	15	7	31	40	11	25	39	13	22	45	32	:	:

(1) Source: NUTS 5.

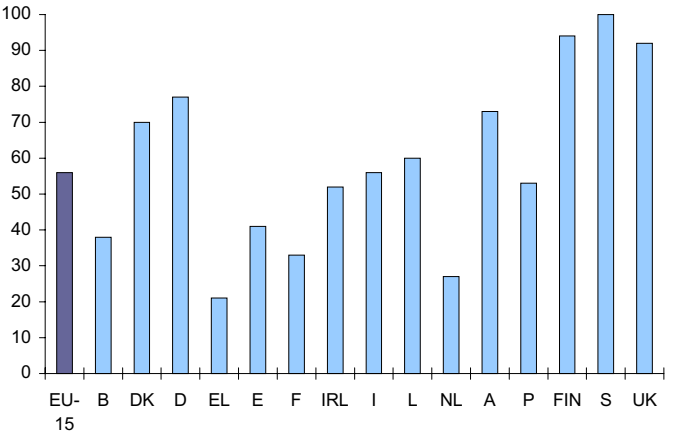
Source: *Flash Eurobarometer 79, April 2000.*

e-Government

A very high proportion of web sites are available in Scandinavian countries' municipalities, with the UK and Germany displaying similar figures. Although two-thirds of the EU countries show over 50% of municipalities having web-sites, France, Spain and the Netherlands come at the bottom of the ranking, with Greece ending last.

Administrations in the Nordic countries, the UK and Austria seem to favour an exchange of information over the Internet, as demonstrated by the percentages of municipalities' web-sites with officers' e-mails. In all but one of the EU Member States, official forms are not made available on the web. Denmark is the only exception, with over 50% of municipalities having e-forms. But, in Europe, the number of citizens per municipality and the respective sizes, staff numbers and resources vary considerably, implying the need for cautious comparisons.

Figure 6.5: Municipalities with Web-sites for citizens (%), April 2000



Source: *Flash Eurobarometer 79, April 2000.*

Table 6.7: e-Health

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
								General Practitioners (GPs) using the Internet (%)								
April-May 2000	**47.7**	51.0	73.5	49.0	22.0	46.8	43.0	52.0	47.5	51.8	62.2	47.5	38.9	52.0	72.5	56.0
								GPs using the Internet as greatest source of information (%)								
April-May 2000	**6.3**	9.0	7.0	4.4	5.5	11.4	5.2	6.0	5.9	5.9	3.0	2.5	4.9	0.7	4.5	2.3
								GPs using the Internet to discover medicines' secondary effects (%)								
April-May 2000	**20.0**	22.5	30.5	18.5	14.5	25.9	13.4	16.0	28.7	32.9	14.9	17.8	15.8	18.7	20.0	15.7
								GPs using the Internet to search for new medicines (%)								
April-May 2000	**13.8**	12.5	11.5	15.8	11.5	20.3	6.5	8.0	19.5	30.6	8.5	13.4	11.3	8.0	10.5	12.3
								GPs communicating with patients over the Internet (%)								
April-May 2000	**5.8**	4.0	9.5	4.0	2.5	5.7	6.7	8.0	5.6	9.4	8.5	5.4	2.0	10.7	12.5	6.7

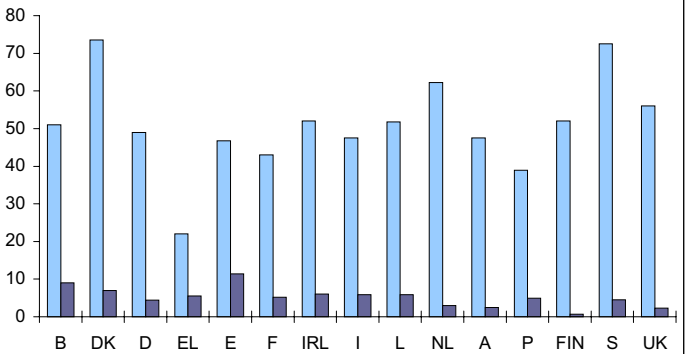
Source: *Flash Eurobarometer 80, April-May 2000.*

e-Health

Less than half of General Practitioners (GPs) in the EU make use of the Internet; only Denmark and Sweden display a national figure above 70%. Spanish GPs reported most that the Internet was their greatest source of information, while Finland ranked last. GPs appear keener to research secondary effects of medicines on the net, than discovering new ones, although neither seems a priority.

The difficulty of evaluating the reliability of delicate information found on the web might justify this. In the EU, on average, only 5.8% of GPs communicate with patients via the web. When this occurs it could be for administrative queries or particular emergencies, (such as when phone lines of a call centre which has an Internet connection are engaged).

Figure 6.6: General Practitioners on the Internet in the EU-15 (%), April-May 2000



Source: *Flash Eurobarometer 80, April-May 2000.*

COMPLEMENTARY INFORMATION

List of sources

The following tables present all sources used in the present pocket book:

List A: European Commission

List B: National Statistical sources

- EU countries
- Other European countries
- Non-European OECD countries

List C: International Statistical sources

- Inter-governmental organisations
- Non-governmental sources

For each statistical source, are mentioned the web address and the publications (if available).

A. European Commission

Name:	Description:	Web address:	Publications:
DG INFSO **- Eurobarometer surveys**	Eurobarometer and flash eurobarometer on Information Society.	http://europa.eu.int/information_society/eeurope/benchmarking/index_en.htm	FLASH EUROBAROMETER 78, "Measuring Information Society - Special Enterprises", April 2000 ; FLASH EUROBAROMETER 79 – "Measuring Information Society - Special Local Authorities", April 2000 ; EUROBAROMETER 53, "Measuring Information Society", April 2000; FLASH EUROBAROMETER 80, "General Practitioners", April-May 2000; FLASH EUROBAROMETER 88, "Internet et le Grand Public", October 2000; SPECIAL EUROBAROMETER 54, "Les Europeens et les Technologies de l'Information et de la Communication dans le Cadre de l'Emploi", Autumn 2000; FLASH EUROBAROMETER94, "Headteachers", February 2001; FLASH EUROBAROMETER 95, "Teachers", February 2001

A. European Commission

Name:	Description:	Web address:	Publications:
DG INFSO *(continued)*			
- ISPO	**I**nformation **S**ociety **P**romotion **O**ffice, is the Information society website of the European Commission. It provides numerous information on EU policy (e-Europe Action plan) but also links to other EU websites relevant for Information Society.	http://europa.eu.int/ispo/	"e-Europe: An Information Society for all", 1999. Results of ad-hoc surveys and publications on various topics (education and training, employment, e-commerce, telecommunication, multilingualism, standardisation, statistics and figures).
- ESIS	**E**uropean **S**urvey of **I**nformation **S**ociety Projects and Actions.	http://europa.eu.int/ISPO/esis /default.htm	Updated report on Information Society indicators in the Member States of the European Union, November 2000. Public Strategies for the Information Society in the Member States of the European Union (updated version, Nov. 2000).
DG EMPL			
- ESDIS	High level Group on the **E**mployment and **S**ocial **D**imension of the **I**nformation **S**ociety.	http://europa.eu.int/comm/ employment_social/soc-dial/info_soc/esdis/index.htm	Benchmarking report following-up the "Strategies for jobs in the Information Society", SEC (2001) 222, February 2001.

A. European Commission

Name:	Description:	Web address:	Publications:
DG ENTR - ENSR	The European Observatory for SME.	http://europa.eu.int/comm/enterprise/index_en.htm	ENSR enterprise survey 1999, 6th report, ENSR (European Network for SME Research), September 2000.
Eurostat	Statistical Office of the European Communities	http://europa.eu.int/comm/eurostat/	General Statistics (Theme 1); Economy and Finance (Theme 2); Demographic statistics Demo (Theme 3); Structural Business Statistics SBS (Theme 4); Labour Force Survey LFS (Theme 3); Comext.

B. National Statistical Sources: EU countries

Country:	Name:	Web address:
Belgium	Institut National de la Statistique (INS)	http://stabel.fgov.be
Denmark	Danmarks Statistik Publications: - Informations-samfundet Denmark - The ICT sector in the Nordic countries - Use of ICT in Nordic enterprises 1999/2000	http://www.dst.dk
Germany	Statistisches Bundesamt	http://www.statistik-bund.de
Greece	National Statistical Service of Greece	http://www.statistics.gr
Spain	Instituto National de Estatistica (INE)	http://www.ine.es
France	Institut National de la Statistique et des études économiques (INSEE) Publication: - Information technology and the Information Society 1999	http://www.insee.fr
Ireland	Central Statistical Office (CSO) Information Society Commission	http://www.cso.ie http://www.isc.ie
Italy	Instituto Nazional di Statisitica (ISTAT)	http://www.istat.it
Luxembourg	Service Central de la Statistique et des études économiques (STATEC)	http://www.statec.lu
Netherlands	Centraal Bureau voor de Statistiek (CBS)	http://www.cbs.nl
Austria	Österreichisches Statistisches Zentralamt (ÖSTAT)	http://oestat.gv.at
Portugal	Institut Nacional de Estatistica (INE) Instituto das Comunicacoes de Portugal, ICP	http://ine.pt http://www.icp.pt
Finland	Statistics Finland Publication: - On the Road to the Finnish Information Society II	http://www.stat.fi

Country:	Name:	Web address:
Sweden	Statistics Sweden (SCB)	http://www.scb.se
	SIKA Institute Publication: - Facts about Information and Communications technology in Sweden 2001	http://www.sika-institute.se
United Kingdom	Office for National Statistics	http://www.ons.gov.uk
	Department for Industry (DTI) Publication: - Business in the Information Age. Fourth International Benchmarking Study commissioned by the DTI with the objective of measuring the UK's progress towards the Information Age.	http://www.dti.gov.uk

B. National Statistical Sources: Other European countries

Country:	Name:	Web address:
Norway	Central Office for Statistics	http://www.ssb.no
Iceland	Statistics Iceland	http://www.statice.is
Switzerland	Office Fédéral de la Statistique	http://www.admin.ch/bfs

B. National Statistical Sources: Non-European OECD countries

Country:	Name:	Web address:
USA	US departement of Commmerce/ Economics and Statistics Admin./ National telecommunication and Information Administration	http://www.esa.doc.gov
	Bureau of **L**abour **S**tatistics	http://stats.bls.gov
Japan	Statistics Bureau and Statistics Center	http://www.stat.go.jp

C: International Statistical Sources: *Inter-Governmental organisations*

Name:	Description:	Web address:	Publication:
OECD	Directorate of Science, technology and Industry	http://www.oecd.org/dsti/sti/it/	OECD Information technology outlook, 2000; OECD Communication outlook, 2001; Measuring the ICT sector, October 2000; Internet access price comparisons, September 2000; Internet and Electronic Commerce Indicators Update.
ITU	**I**nternational **T**elecommunication **U**nion	http://www.itu.int	Yearbook of Statistics (ITU telecommunication indicators) ITU Internet Reports 2001: IP Telephony, 3rd edition (A Statistical Annex to the report presents the latest available data (for January 2000 and July 2000) on Internet penetration throughout the world.
UN	**U**nited **N**ations, Statistics Division	http://www.un.org/Depts/unsd/	Yearbook of statistics

C: International Statistical Sources: *Non-governmental sources*

Name:	Description:	Web address:	Publication:
Durlacher	Durlacher Corporation is a specialised research-led investment house with expertise in media and emerging technologies. Its department Durlacher Research provides research services in the area of Internet and related technologies.	http://www.durlacher.com	B2B e-commerce Investment perspective. This report on e-commerce is downloadable.
Empirica	ECatt project on telework in Europe (European Commission research project).	http://www.ecatt.com http://www.empirica.com	ECatt final report "benchmarking Telework and e-commerce in Europe, August 2000.
EITO	**E**uropean **I**nformation **T**echnology **O**bservatory (ICT markets in Europe, Technological evolution of ICT and standards, The Internet economy, Impact of E-commerce, Future of telecommunications, etc).	http://www.eito.com	EITO 2000 and EITO 2001. The EITO reports have been published annually since 1993 and provide the most complete and authoritative guide to the IT, telecoms, Internet and related markets.
ETO	**E**uropean **T**elework **O**nline. The Internet portal for teleworking, telecommuting and related topics.	http://www.eto.org.uk	Annual status reports from the European Commission on European Telework, New Methods of Work (Editions 1997, 1998, 1999 and 2000).

C: International Statistical Sources: *Non-governmental sources*

Name:	Description:	Web address:	Publication:
ETD	**E**uropean **T**elework **D**evelopment is supported by DG INFSO and part of the ACTS programme (Advanced Communication Technologies and Services). The aim of the initiative is to stimulate the beneficial uptake of telework, teletrade and telecooperation.	http://www.eto.org.uk/etd	European Telework Development initiative.
EVCA	**E**uropean **V**enture **C**apital **A**ssociation	http://www.evca.com/	Survey of the Economic and Social Impact of buyouts and buyins in Europe.
Forrester Research	Market research company based in Cambridge, Massachusetts.	http://www.forrester.com	Projections of World Wide Internet commerce by country available on its website.
Global Reach	Global Reach provides latest estimated figures of the number of people online in each language zone (native speakers).	http://www.euromktg.com/globstats/index.php3	
Intel	Intel is a US based chipmaker.	http://www.intel.com	http://www.intel.com/intel/museum/25anniv/hof/moore.htm

C: International Statistical Sources: *Non-governmental sources*

Name:	Description:	Web address:	Publication:
ISC	**I**nternet **S**oftware **C**onsortium. Undertake the longest running host survey, this Internet domain survey is carried out every 6 months (January and July).	http://www.isc.org	
ITAC	**I**nternational **T**elework and **A**ssociation **C**ouncil.	http://www.telecommute.org	Telework America survey. This survey covers the growth and characteristics of telework in the United States.
Japan Telework Association	Association established to conduct research on teleworking and working at home.	http://www.japan-telework.or.jp/english/english_index.html	
Mobile Communications	Monthly mobile phone subscription figures by country and operator.	http://www.baskerville.telecoms.com	Mobile Communications (monthly).
Netcraft	The Netcraft SSL Server provides one of the best available indicators of the growth of electronic commerce on the Internet.	http://www.netcraft.com/	Whereas, the leading search engines only cover http sites, Netcraft undertakes a secure socket layer (SSL) survey among others.

C: International Statistical Sources: Non-governmental sources

Name:	Description:	Web address:	Publication:
NetSizer	NetSizer, Internet Sizer of Telecordia Technologies provides daily updates of number of Internet hosts based on a random sample of IP addresses sampled throughout every day.	http://www.netsizer.com/	As NetSizer collects and analyses the data continuously, estimates are provided on a real time basis.
NUA	Nua is a private web publishing company, and provides summarised results of Internet surveys.	http://nua.ie	Online publication on Internet users www.nua.ie/surveys/how-many-online.
Pricewaterhouse Coopers	Part of the report deals with investments in electronic commerce related activity across all industry sectors.	http:/www.pwcmoneytree .com	Money for growth, Technology Investment Report 1999.
RIPE NCC	Réseau européen, network co-ordination Centre.	http://www.ripe.net	Monthly hostcount on line.

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

*	provisional/estimated data or low reliability due to small number of observations
Italic	Forecast data
:	not available
-	nil
.	not applicable or data not statistically significant
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	Netherlands	.nl
A	Austria	.at
P	Portugal	.pt
FIN	Finland	.fi
S	Sweden	.se
UK	United Kingdom	.uk
IS	Iceland	.is
N	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

Abbreviations

ADSL	**A**symmetric **D**igital **S**ubscriber **L**ine
B2B	**B**usiness **to B**usiness
B2C	**B**usiness **to C**onsumer
DSL	**D**igital **S**ubscriber **L**ine
EB	**E**uro**b**arometer
EDI	**E**lectronic **D**ata **I**nterchange
ESIS	**E**uropean **S**tatistical **I**nformation **S**ystem
GDP	**G**ross **D**omestic **P**roduct
GSM	**G**lobal **S**ystem for **M**obile communication
HTML	**H**yper**T**ext **M**arkup **L**anguage
ICT	**I**nformation and **C**ommunication **T**echnologies
IP	**I**nternet **P**rotocol
ISDN	**I**ntegrated **S**ervices **D**igital **N**etwork
ISP	**I**nternet **S**ervice **P**rovider
LFS	**L**abour **F**orce **S**urvey
PC	**P**ersonal **C**omputer
PIAP	**P**ublic **I**nternet **A**ccess **P**oint
PSTN	**P**ublic **S**witched **T**elephone **N**etwork
PPP	**P**urchasing **P**ower **P**arity
SBS	**S**tructural **B**usiness **S**tatistics
SME	**S**mall and **M**edium **E**nterprises
TLD	**T**op **L**evel **D**omain
UMTS	**U**niversal **M**obile **T**elecommunications **S**ystem
WAI	**W**eb **A**ccessibility **I**nitiative
WWW	**W**orld **W**ide **W**eb

Classifications (extract of NACE Rev.1)

Activities covered by the Information and Communication Technology (ICT) sector:

Manufacturing (section D, Subsection DL):

30: Manufacture of office machinery and computers

30.01: Manufacture of office machinery

30.02: Manufacture of computers and other information processing equipment

31.30: Manufacture of insulated wire and cable

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

32.10: Manufacture of electronic valves and tubes and other electronic components

32.20: Manufacture of television, and radio transmitters and apparatus for line telephony and line telegraphy

32.30: Manufacture of television, and radio receivers, sound or video recording or reproducing apparatus and associated goods

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

33.30: Manufacture of industrial process control equipment

Services:

Section G:

51.64: Wholesale of office machinery

Section I:

64.2: Telecommunications

Section K:

71.33: Renting of office machinery and equipment including computers

72: Computers and related activities

72.10: Hardware consultancy

72.20: Software consultancy and supply

72.30: Data processing

72.40: Database activities

72.50: Maintenance and repair of office, accounting and computing machinery

72.60: Other computer related activities

Glossary

- A -

ADSL (Asymmetric Digital Subscriber Line): A technology that allows the use of a copper line to send a large quantity of data (e.g. a television picture) in one direction and a small quantity (e.g. a control channel and a telephone call) in the other.

- B -

Bandwidth: The physical characteristic of a telecommunications system that indicates the speed at which information can be transferred. In analogue systems, it is measured in cycles per second (Hertz) and in digital systems in binary bits per second (bps).

Broadband: A service or connection allowing a considerable amount of information to be conveyed, such as television pictures. Generally defined as a bandwidth greater than 2Mbps.

B2B (Business-to-Business) e-Commerce: Commerce conducted between businesses over an Intranet, Extranet or Internet (i.e. IP networks). This trade may be conducted between a business and its supply chain as well as between a business and other business end-consumer. It may be conducted directly between buyer and seller or through a third party called online intermediary.

B2C (Business-to-Consumer) e-Commerce: commerce conducted between businesses and private consumers over an Extranet, Internet or Intranet (i.e. Internet Protocol networks).

- C -

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

Chip: Chip is short for microchip, the complex yet tiny modules that store computer memory or provide logic circuitry for microprocessors.

country code Top Level Domain (ccTLD): A domain name locates an organisation or other entity on the Internet. The ".fr or .uk" part of the domain name reflects the geographical location in which the entity wants to be perceived to be in.

- D -

Desktop: Desktop is an abbreviated form of desktop computer, a personal computer that fits on top of a desk.

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.

DSL (Digital Subscriber Line): A high-bandwidth (broadband), local loop technology for connecting business or residential subscribers to the Internet.

- E -

e-Commerce: In the narrow sense, electronic commerce is any transaction of sale/purchase of goods or services conducted over the Internet i.e. over a Web page, Extranets and other applications that run over the Internet, such as EDI over the Internet, or over any other Web enabled application (e.g. through a mobile or a TV set). The payment and the ultimate delivery of the goods or services may be conducted on or off-line. In the broad sense, electronic commerce transactions are Internet transactions plus transactions conducted over EDI or any other online applications used in automated transactions (e.g. Minitel, interactive telephone systems). Transactions over facsimile, telephone or non-interactive e-mail are not included.

EDI (Electronic Data Interchange): Exchange of structured electronic messages (such as orders or invoices) in a defined standard between enterprises and over special telecommunication networks in order to replace paper transactions.

eEurope: A political initiative of the European Commission at the highest level, to accelerate the transition to the information society, dated December 1999. An initiative of the European Commission to accelerate the transition to the Information Society, launched in December 1999. The eEurope Action Plan launched in 2000 for the period 2000-2002 is part of the initiative.

electronic Mail (e-Mail): The electronic transmission of letters, messages from one computer to another.

e-Marketplaces: Specialised Internet commerce sites for businesses that allow buyers and suppliers to trade with each other.

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

Extranet: An extension of a company's Intranet that allows external users to access some parts of the Intranet.

- F -

Flat rate: A charge levied on the client irrespective of the usage of the line accessed.

- G -

generic Top Level Domain (gTLD): A gTLD is the top-level domain name of an Internet address that identifies it generically as associated with some domain class, such as .com (commercial), .net (originally intended for Internet service providers, but now used for many purposes), .org (for non-profit organisations, industry groups, and others), .gov (U.S. government agencies), .mil (for the military), .edu (for educational institutions); and .int (for international treaties or databases and not much used).

GSM: Global System for Mobile communication is a digital mobile telephone system that is widely used in Europe and other parts of the world. GSM uses a variation of time division multiple access (Time Division Multiple Access) and is the most widely used of the three digital wireless telephone technologies (TDMA, GSM, and CDMA – Code Division Multiple Access). GSM digitises and compresses data, then sends it down a channel with two other streams of user data, each in its own time slot. It operates at either the 900 MHz or 1800 MHz frequency

band. Since many GSM network operators have roaming agreements with foreign operators, users can often continue to use their mobile phones when they travel to other countries.

- H -

Hardware: The term arose as a way to distinguish the "box" and the electronic circuitry and components of a computer from the program you put in it to make it do things. Hardware implies permanence and invariability. Hardware includes not only the computer proper but also the cables, connectors, power supply units, and peripheral devices such as the keyboard, mouse, audio speakers, and printers.

Host: Hosts are permanently interconnected computers and therefore are the central nervous system of the Internet, keeping it alive by routing traffic, exchanging e-mails, and providing information. Any computer system with an Internet Protocol address connected to the network is a host.

HTML: HTML (Hyper-Text Markup Language) is the set of markup symbols or codes inserted in a file intended for display on a World Wide Web browser page. The markup tells the Web browser how to display a Web page's words and images for the user.

- I -

ICT (Information and Communication Technologies): A generic term that covers both information technology (computer hardware and software) and telecommunications equipment and services.

Internet: The world-wide network of interconnected computer systems which uses protocols defined by the Internet Engineering Task Force.

Internet Protocol (IP): The Internet Protocol (IP) is the method or protocol by which data is sent from one computer to another on the Internet. Each computer (known as a host) on the Internet has at least one IP address that uniquely identifies it from all other computers on the Internet. When you send or receive data (for example, an e-mail note or a Web page), the message gets divided into little chunks called packets. Each of these packets contains both the sender's Internet address and the receiver's address. Any packet is sent first to a gateway computer that understands a small part of the Internet. The gateway computer reads the destination address and forwards the packet to an adjacent gateway that in turn reads the destination address and so forth across the

Internet until one gateway recognises the packet as belonging to a computer within its immediate neighbourhood or domain. That gateway then forwards the packet directly to the computer whose address is specified.

Intranet: An internal computer network that operates using the same protocol as the Internet. Its main benefit is seen as being a means of sharing information internally, between company employees.

ISDN (Integrated Service Digital Network): A telecommunication service that turns a copper phone line into a high speed digital link that can quickly transmit voice, data and video images simultaneously.

ISP (Internet Service Provider): A supplier of Internet services including access. Originally distinguished from IAPs (Internet Access Provider) since they provide the major backbone connections between countries, and sold on bandwidth to smaller IAPs.

- L -

Laptop: A laptop computer, usually called a notebook computer by manufacturers, is a battery-powered personal computer generally smaller than a briefcase that can easily be transported and conveniently used in temporary spaces such as in public transports, in libraries, temporary offices, and at meetings.

Local Loop Unbundling: The process where the incumbent operator makes its local network (the connection between the customer's premises and the local exchange) available to other companies. The customer is then able to choose another supplier other than the incumbent to provide service.

- M -

Metered/Unmetered Charges: Whether prices are charged on the measurement of actual usage (metered) or not (unmetered). A metered charge is the antithesis of a flat rate charge.

Minitel: A small - French - terminal (keyboard, display and modem) which is not a network, but a tool for connecting to certain kind of networks.

Mobile commerce: Any transaction with a monetary value conducted via mobile telecommunication networks. The use of a wireless terminal (telephone, Personal Digital Assistant (PDA), PC device or custom terminal) and the mobile network to access information and conduct transactions that results in the transfer of value in exchange for information, services or goods.

- N -

New Economy: What rapidly spread since the mid-1990s due to the advent of information and communication technology, re-dimensioning the importance of more traditional industries (e.g. automobiles, pharmaceuticals) and affecting the balance and weighting among economic sectors.

- O -

Offline/online: used to describe someone who is not/is currently connected to the Internet.

- P -

PPP (Purchasing Power Parity): As financial data converted at market exchange rates would not give a true comparison of the actual volumes of goods and services to which they correspond, Eurostat calculates PPPs which are alternative exchange rates ensuring that the sums converted have the same 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, according to well-defined criteria, up to the GDP global parity level.

PSTN: Public Switched Telephone Network refers to the world's collection of interconnected voice-oriented public telephone networks. Today, it adopts almost entirely digital technology except for the final link from the central (local) telephone office to the user.

- S -

Secure Servers: Allow users to encrypt information on (e.g. credit card data) that facilitates electronic commerce. A count of secure servers provides a measure of the distribution of e-commerce activities across countries.

Server: A server is a particular kind of host computer that provides information in the popular World Wide Web format used by browsers. It is a computer program that provides services to other computer programs in the same or other computers. A web server is the computer program (housed in a computer) that serves requested HTML pages or files.

Software: The various kinds of programmes used to operate computers and related devices. Software is often divided into application software (programmes that do work users are directly interested in) and system software (which includes operating systems and any programme that supports application software).

- T -

Telework: The use of computers and telecommunications to change the accepted geography of work, entailing staff working away from the office, thus, at home or on the road, using computers and online connections. Self-employed people who prefer home as work base and connect with customers and colleagues across networks are also classed as teleworkers.

Telecommuting: Term 'invented' by Jack Nilles in his publication 'The telecommunications transportation trade-off' (1976). Arrangement enabling workers to avoid commuting, by working at home or closer to home.

Third Generation mobile services (3G): see UMTS.

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 semiconductor material, each capable of carrying a current. A semiconductor is a material such as germanium and silicon that conducts electricity.

- U -

UMTS (Universal Mobile Telecommunications System): Also known as 3G technology, it is a cellular standard that supports speeds up to 2Mbps, and was designed as a successor to GSM.

- V -

Venture Capital: Refers to equity investments made for the launch, early development, or expansion of a business.

- W -

WWW (World Wide Web): The collection of HTML or XML pages that reside on Web servers across the world (The World Wide Web is the system of connected documents on the Internet which often contain colour pictures, video and sound, and can be searched for information about a particular subject).