

Eurostat yearbook 2004

The statistical guide to Europe

Data 1992-2002

Chapter 5



EUROPEAN
COMMISSION



THEME 1
General
statistics

1

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Eurostat's service	9	In the spotlight: sustainable development.	25
The European Union in the global context	15		

1

People in Europe

Population	39	Labour market	85
Health	57	Households and welfare	93
Education and training	73		

2

The economy

National accounts	117	Balance of payments.	149
Prices and wages	137	International trade in goods.	161

3

The environment

Environment	167
------------------------------	-----

4

Science and technology

Research and development.	181
Information society	189

5

Sectors and enterprises

Business structures at a glance	199	Transport	211
Industry and construction	203	Tourism.	219
Distributive trades	205	Energy	223
Financial markets	207		

6

Agriculture, forestry and fisheries

Agriculture	233
Forestry	245
Fisheries	247

7

Annexes

Glossary	253	Classification of commodities, SITC Rev. 3	271
Geonomenclature 2004.	268	Abbreviations and acronyms.	273
Classification of economic activities in the European Community, NACE Rev. 1.1.	270	CD-ROM instructions.	280

8

The Eurostat yearbook as a combined product

The Eurostat yearbook 2004 is a combined product consisting of a book and a CD-ROM. The CD-ROM contains the complete statistical information of the Eurostat yearbook 2004, a selection of which is presented in the book.

The CD-ROM is in three languages (English, French, German). It contains the following:

- The PDF files of the paper version.
- More than 1 000 statistical tables and graphs. All data can be easily extracted from the tables. The graphs can be generated dynamically according to the wishes of the reader.
- All the statistical background information about 'In the spotlight: sustainable development'.
- Links to the Eurostat Internet site to find more information, for example on further publications or on more up-to-date data. On its website, Eurostat provides access to a range of statistical information that can be consulted online or downloaded free of charge.

The Eurostat yearbook is easy to use

- Introductory texts for each section explain the main features and the relevance of the information presented and give an idea of what other data on the subject Eurostat has on offer.
- A glossary clarifies the statistical terms and concepts used.
- The abbreviations and acronyms used are spelled out on the bookmark to the yearbook.

Date of data extraction

The statistical data presented in this yearbook were extracted on 10 May 2004 and represent the data availability at that time.

Order and coding of countries

The order of the EU Member States used in the Eurostat yearbook is their order of protocol. It follows the alphabetical order of the countries' short names in their respective native languages.

Generally, the countries are identified in the Eurostat yearbook 2004 by using the shortest official designation. If codes are used, these are the two-digit ISO codes, except for Greece and the United Kingdom for which EL and UK, respectively, are used.

A complete list of ISO codes can be found at:

<http://www.iso.org/iso/en/prods-services/iso3166ma/index.html>

Symbols and codes in the tables

- "Not applicable" or "real zero" or "zero by default"
- 0 Less than half of the unit used
- : not available
- p Provisional value
- e Estimated value
- s Eurostat estimate
- r Revised value
- f Forecast
- u Unreliable or uncertain data (see explanatory texts)
- :u Extremely unreliable data
- :c Confidential
- :n Not significant
- b Break in series (see explanatory texts)
- i see footnote

€ zone stands for Euro-zone. "€ zone", which is not an official symbol, is used for practical reasons.



Science and technology

Research and development 181-188

Information society 189-196

5

Research and development

Eurostat data

Eurostat provides a wide range of data on:

- Innovation
- Human resources in science and technology
- Patent applications to the European Patent Office
- Patents granted by the United States Patent and Trademark Office
- R&D expenditure
- R&D on government budget appropriations or outlays for research and development
- Scientific and technical R&D personnel
- Employment in high technology sectors

Research and development: an engine of growth

Research and development (R&D) is a driving force behind economic growth, job creation, innovation of new products and increasing quality of products in general, as well as improvements in healthcare and environmental protection. At the Lisbon Summit in March 2000, the European Council set a clear strategic objective for Europe in the next decade: to make the EU the most competitive and dynamic knowledge-based economy in the world.

Eurostat supports this ambitious goal with its reliable and relevant statistical information on R&D and innovation as well as on science and technology. Eurostat calculates a number of indicators and provides data for deeper analytical studies. Most indicators are calculated annually and are available at national and regional level (for most of the countries at NUTS 2 level). Depending on the indicator, data are available not only for the Member States of the European Union but also for other members of the European Economic Area, candidate countries, Japan or the United States.

Inputs into R&D

Data on R&D expenditure and personnel as well as on government budget appropriations or outlays for research and development (Gbaord) are mainly collected every year from the national statistical offices.

R&D expenditure is a 'priority indicator' for the effort devoted to R&D. The basic measure is 'intramural expenditures', i.e. all expenditures for R&D performed within a statistical unit or sector of the economy, whatever the source of funds. Among the several indicators available, R&D intensity (i.e. R&D expenditure as a percentage of GDP) is the most recommended for international comparisons and is very significant for comparing the countries' R&D efforts.

R&D intensity for EU-15 showed a decreasing trend during the 1990s, but it stabilised towards the end of the decade. When compared



with the United States and Japan, the EU lags behind, but this is mainly due to the differences observed in the business enterprise sector. Within the EU, R&D intensity is highest in Finland and Sweden, which outperform countries with the highest R&D expenditure in terms of volume (Germany, France and the United Kingdom). Portugal, Denmark and Ireland show the highest real growth rate in R&D expenditure.

In terms of human resources, data on scientific and technical R&D personnel provide indicators for useful international comparisons of resources devoted to R&D. For statistical purposes, indicators on R&D personnel are compiled in terms of persons, i.e. head count (HC), in full-time equivalent (FTE) or person-years and by gender. At the EU level, R&D personnel in HC as a proportion of the labour force has seen a modest increase over the last decade, with the Nordic countries taking the lead.

Gbaord are the amount governments allocate towards R&D activities. Comparisons of Gbaord across countries give an impression of the relative importance attached to State-funded R&D. Gbaord statistics complement the *ex post* figures on 'government-financed' gross expenditure on research and development (GERD) and, when broken down by socioeconomic objective, underline the domains governments believe to be important for current and future policy action. When measured as a proportion of GDP, Japan has caught up with both the EU and the United States to a significant degree since the end of the 1980s. Data show that the efforts made by governments in R&D activities are clearly converging.

Outputs of R&D

Patents reflect part of a country's inventive activity and show the country's capacity to exploit knowledge and translate it into potential economic gains. In this context, indicators based on patent statistics are widely used as a measure of R&D output and serve to assess the inventive performance of the countries, regions

or industries. Patent data published in the Eurostat yearbook are provided by the European Patent Office (EPO) and the United States Patent and Trademark Office (USPTO).

The data from the EPO refer to patent applications filed under the European Patent Convention or under the Patent Cooperation Treaty and designating the EPO for protection. Although not all applications are granted, each one still represents technical effort by the inventor and so is regarded as an appropriate indicator of innovative potential. Germany has the highest number of patenting activities of the EPO total, when measured in absolute values. In relative terms, the country with the highest number of patent applications per million inhabitants is Sweden followed by Finland. These two countries are also leading in high-technology patenting and show a high specialisation in the communication technology field.

Human resources

The importance of high-technology sectors has increased considerably over the last few years and this has had a significant impact on the structure and organisation of employment in Europe. In order to permit analysis of knowledge- and technology-intensive sectors, Eurostat collects data on employment in high-technology and medium-high-technology manufacturing sectors, knowledge-intensive services (KIS), high-technology service sectors, other subsectors and reference sectors (for definitions, see glossary entry total 'High-technology sectors').

Data on employment in high-technology and derived indicators are extracted and built up using data from the Community labour force survey (LFS). Data are available both at the national and regional levels. Within Europe, UK regions and Finland show high employment in high and medium-high technology. In the service sector, Greece appears to be one of the most dynamic regarding employment in other KIS.

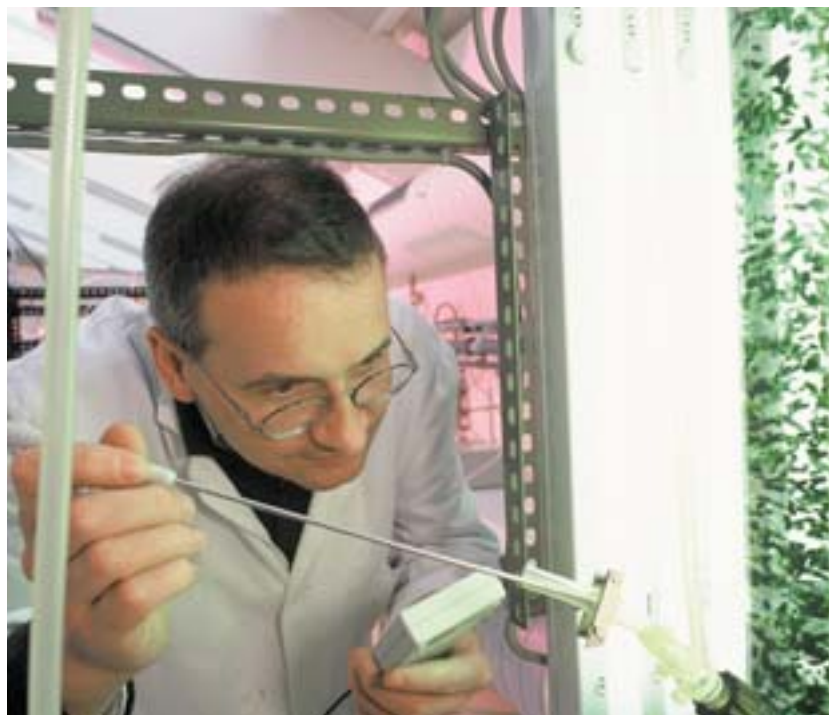


Researchers

Full time equivalent; all institutional sectors

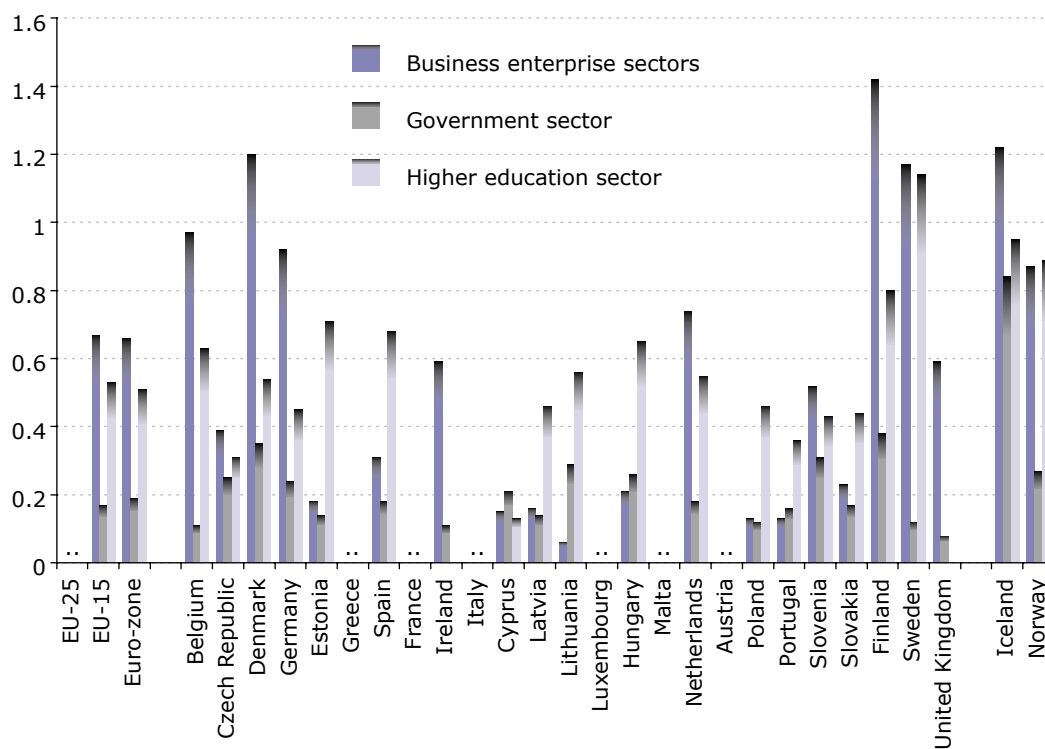
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
EU-25	:	:	:	:	:	:	:	:	:	:	:
EU-15	739 390(s)	774 743(s)	787 066(s)	814 410(s)	830 565(s)	845 212(s)	851 627(s)	886 053(s)	923 459(s)	954 675(s)	981 209(s)
Euro-zone	570 163(s)	598 294(s)	603 738(s)	621 713(s)	628 571(s)	647 304(s)	650 556(s)	671 083(s)	704 824(s)	741 723(s)	763 369(s)
Belgium	18 104(s)	:	20 839(e)	22 773(e)	23 491(e)	24 477(e)	25 579(e)	28 149(e)	30 219(e)	30 395(er)	32 298(er)
Czech Republic	:	20 084(i)	13 627(i)	13 325(i)	11 935(b)	12 963(i)	12 580(i)	12 566(i)	13 535(i)	13 852	14 987
Denmark	12 049	:	13 611	:	15 955	16 699(bi)	17 511(i)	:	18 439	:	19 453
Germany	241 869(b)	:	229 839	:	231 128(e)	:	235 791	237 712	255 261(e)	257 874(e)	259 597(e)
Estonia	:	:	:	:	:	:	:	2 978	3 002	2 666	2 631
Greece	6 230	:	8 015	:	9 706	:	10 964(r)	:	14 828(i)	:	:
Spain	40 641	41 687	43 368	47 868	47 344	51 632	53 883	60 269	61 568	76 670(e)	80 081
France	112 993(b)	142 198	145 824	148 638	149 824	152 533	152 740	155 006	:	170 628(r)	177 374
Ireland	5 137(s)	5 561(s)	6 425(s)	:	:	:	:	:	8 217(e)	8 516	:
Italy	7 5238	74 422	74 434	75 722	75 536	76 441	:	64 230	64 886	66 110	:
Cyprus	135(i)	147(i)	:	:	:	:	:	236	278	303	333
Latvia	:	:	3 999	3 010	3 072	2 839	2 610	2 557	2 626	3 814(r)	3 497
Lithuania	:	:	:	:	:	7 532	7 800	8 436	7 777	8 075	:
Luxembourg	:	:	:	:	:	:	:	:	:	1 625	:
Hungary	14 471	12 311	11 818	11 752	10 499	10 408(i)	11 154(i)	11 731(i)	12 579(i)	14 406(i)	14 666(i)
Malta	:	:	:	:	:	:	:	:	:	:	:
Netherlands	:	:	32 200(b)	34 200	34 038	34 012	38 055(i)	39 081(i)	40 640	41 896	45 328
Austria	:	:	12 821	:	:	:	:	18 715	:	:	:
Poland	:	41 440(i)	:	47 433	50 426	52 474	55 602	56 179	56 433	55 174	56 918
Portugal	:	:	:	:	11 586	:	13 580	:	15 752	:	17 724(e)
Slovenia	:	:	3 745(i)	4 767(i)	4 897(i)	4 489	4 022	4 285	4 427	4 336	4 497
Slovakia	:	:	:	10 249	9 711	10 010	9 993	10 145	9 204	9 955	9 585
Finland	16 937	:	18 589	:	20 857	:	26 412	30 431	32 677	:	:
Sweden	26 515	:	30 495	:	33 665	:	36 878	:	39 921(i)	:	:
United Kingdom	124 226	135 064	139 183	145 792	152 331(s)	145 863	146 541(s)	158 586(s)	:	:	:
Iceland	688(s)	709(s)	815(s)	846(s)	1 076(s)	890(s)	1 456	1 533	1 577	:	1 869
Norway	13 460	:	14 763	:	15 928	:	17 490	:	18 295	:	19 722
Japan	598 333(i)	622 410(i)	641 083(i)	658 866(i)	673 421(i)	617 365b(i)	625 442(i)	652 845(i)	658 910(i)	647 572(i)	675 898(i)
United States	981 659(i)	:	1 013 772b(i)	:	1 035 995(i)	:	1 159 908(i)	:	1 261 227(i)	:	:

Researchers (RSE) are professionals engaged in the conception or creation of new knowledge, products, processes, methods, and systems, and in managing the projects concerned. Included are managers and administrators engaged in the planning and management of the scientific and technical aspects of a researcher's work as well as postgraduate students engaged in R&D. One FTE may be thought of as one person-year. For instance, a person who normally spends 40 % of his time on R&D and the rest of it on other work (e.g. lecturing, university administration, guidance) should be counted as only 0.4 FTE — Frascati manual.



Research and development personnel in 2001

Share in the labour force in %

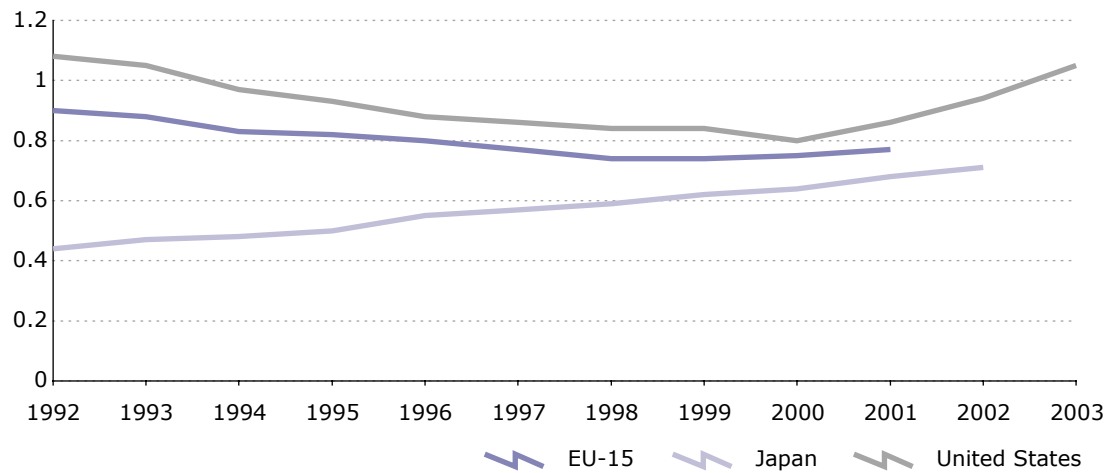


Includes estimated data.

R&D personnel include all persons employed directly on R&D, plus persons supplying direct services to R&D, such as managers, administrative staff and office staff. Head count (HC) data measure the total number of R&D personnel who are mainly or partly employed on R&D. R&D personnel in HC are expressed as a percentage of the labour force (comprises of population aged 15 and over who are employed or unemployed but not inactive).

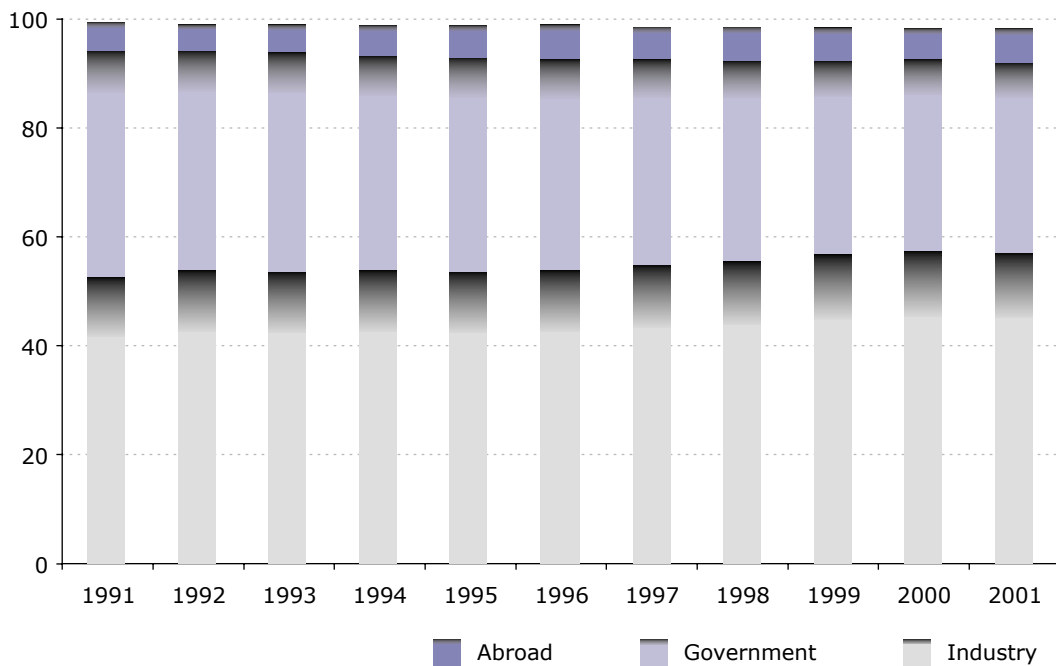


Government budget appropriations or outlays on R&D
In % of GDP



EU-15, Eurozone-12 1995, 1996, 2000, 2001: estimated values; Japan, United States 2002: provisional data; United States: 2003 forecast. Data on government budget appropriations or outlays on R&D (GBAORD) refer to budget provisions, not to actual expenditure, i.e. GBAORD measures government support for R&D using data collected from budgets. GBAORD are a way of measuring government support to R&D activities. GBAORD is expressed as a percentage of GDP.

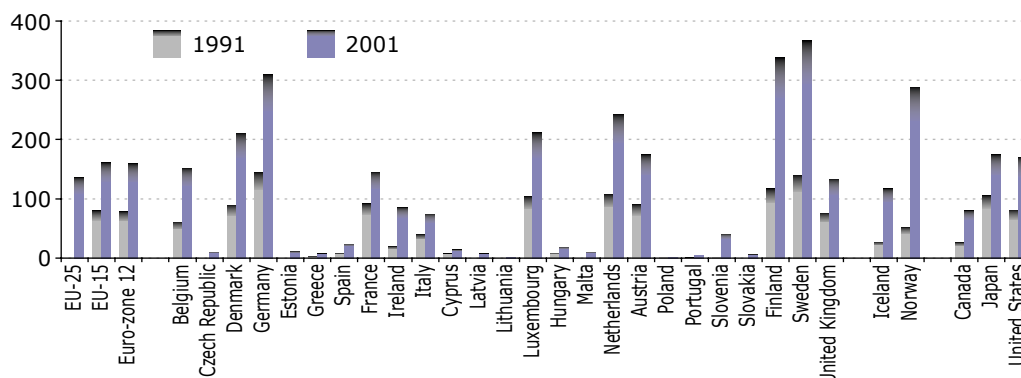
R&D expenditure in the EU-15, by source of funds
In %



Estimated data.

Source: OECD.

Number of patent applications to the European Patent Office (EPO) Per million inhabitants



(*) The values for Liechtenstein were 1 171 (1991) and 1 080 (2001).

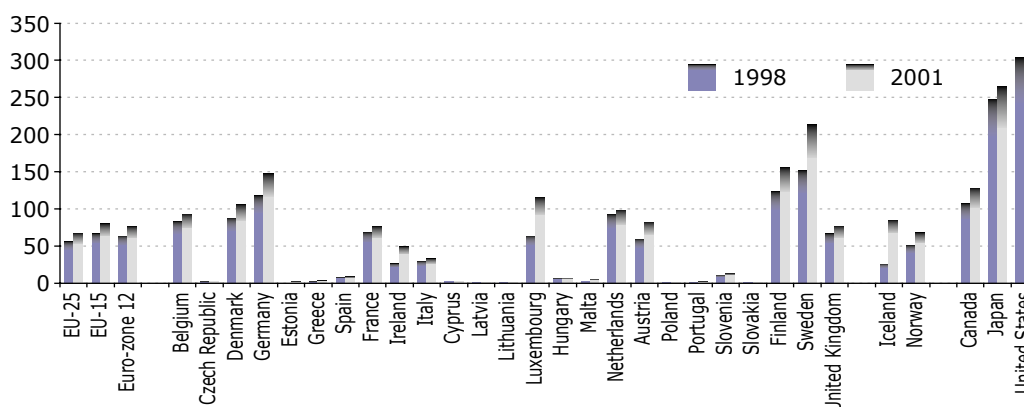
Includes estimated data.

Data refer to applications filed directly under the European Patent Convention or to applications filed under the Patent Cooperation Treaty and designated to the EPO (Euro-PCT). Patent applications are counted according to the year in which they were filed at the EPO and are broken down according to the International Patent Classification (IPC). They are also broken down according to the inventor's place of residence, using fractional counting if multiple inventors or IPC classes are provided to avoid double counting.

In EU-15, the number of patent applications to the European Patent Office (EPO) almost doubled from 1991 to 2001. Sweden, Finland and Germany reached the highest rates per million inhabitants in 2001 (over 300 patents per 1

million inhabitants). Their rates were double those for Japan and the United States. In many countries, the increases from 1991 to 2001 were more than double, and up to even five times in the case of Norway.

Number of patents granted by the US Patent and Trademark Office (USPTO) Per million inhabitants



Includes estimated data.

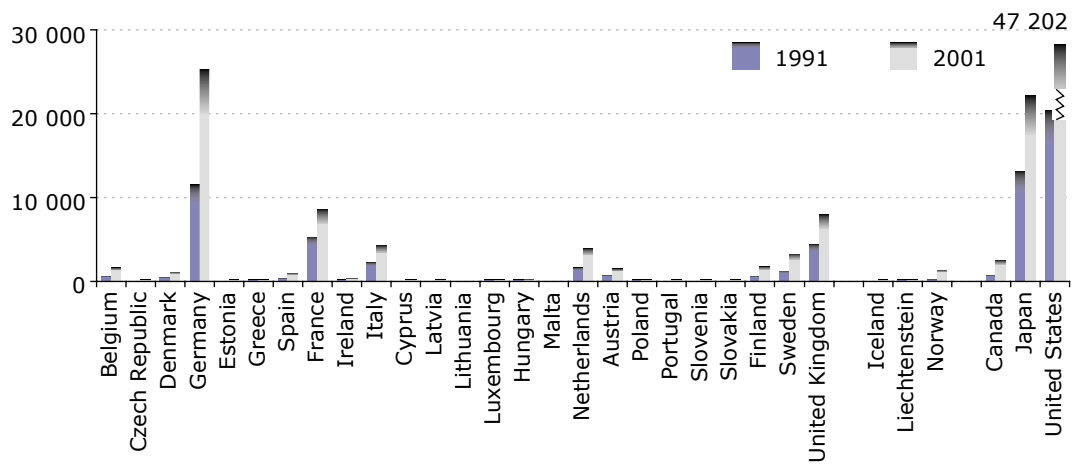
USPTO data refers to patents granted while EPO data refers to patent applications. Data are recorded by year of publication as opposed to the year of filing used for the EPO data. This is because patents in the US (at least in the past) were only published once they were granted. Patents are allocated to the country of the inventor, using fractional counting in the case of multiple inventor countries. The methodology used is not harmonised with that of Eurostat and therefore the comparison between EPO and USPTO patents data should be interpreted with caution.

In 2001, the biggest rates of patents granted by the United States Patent and Trademark Office (expressed in the number of patents to 1

million inhabitants) were reached in the United States, Japan, Sweden, Finland and Germany.



Total European patent applications



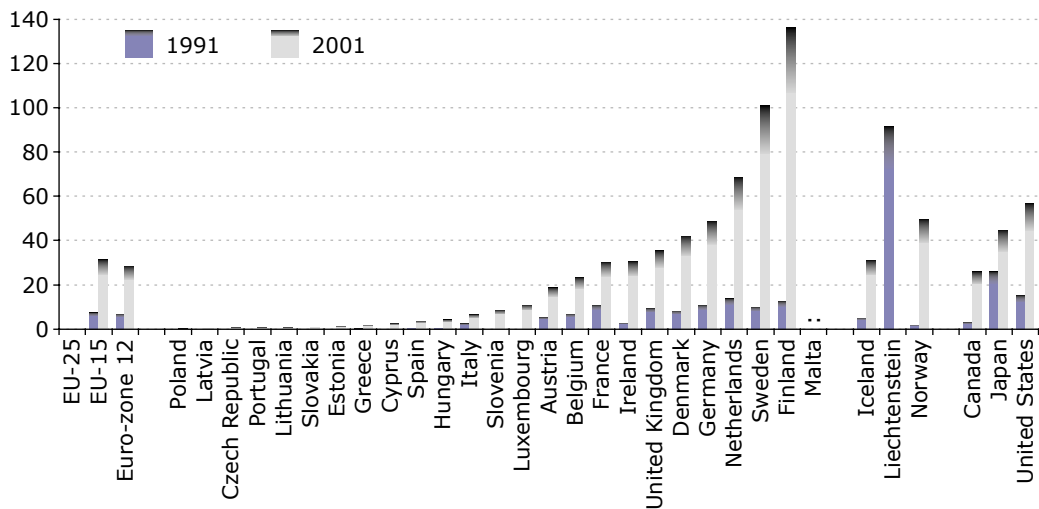
2001: provisional data.

The total European patent applications refer to requests for protection of an invention directed either directly to the European Patent Office (EPO) or filed under the Patent Cooperation Treaty and designating the EPO (Euro-PCT), regardless of whether they are granted or not. The data shows the total number of applications per country.

There were nearly 61 500 patent applications in 2001 in the 25 countries that today form the European Union. The increase in the number of

patent applications shows the significant growth in research and development activities in Europe.

European high-technology patents Per million inhabitants



Includes estimated data.

The data refers to the ratio of patent applications made directly to the European Patent Office (EPO) or via the Patent Cooperation Treaty and designating the EPO (Euro-PCT), in the field of high-technology patents per million inhabitants of a country. The definition of high-technology patents uses specific subclasses of the International Patent Classification (IPC).

The rate of patent applications (relative to the population) on high technology reflects the output of the efforts made for research and development. In 2001, the 'top 10' countries for

high-technology patents were Finland, Sweden, the Netherlands, the United States, Norway, Germany, Japan, Denmark, the United Kingdom and Iceland.

Total R&D expenditure
 In % of GDP


	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU-25	:	:	:	1.86(s)	1.84(s)	1.83(s)	1.83(s)	1.88(s)	1.91(s)	1.93(s)	:	:
EU-15	1.92(s)	1.94(s)	1.91(s)	1.89(s)	1.88(s)	1.87(s)	1.88(s)	1.92(s)	1.95(s)	1.98(s)	1.99(s)	:
Euro-zone	1.86(s)	1.89(s)	1.84(s)	1.83(s)	1.82(s)	1.81(s)	1.82(s)	1.87(s)	1.89(s)	1.91(s)	1.92(s)	:
Belgium	:	1.70(e)	1.69(e)	1.72(er)	1.80(er)	1.87(er)	1.90(er)	1.96(er)	2.04(er)	2.17(er)	:	:
Czech Republic	:	:	:	:	:	:	:	:	1,23	1,22	:	:
Denmark	1.68(e)	1.74	:	1.84	1.85(e)	1.94	2.06(ei)	2.10(r)	2.27(er)	2.4	:	:
Germany	2.40(eir)	2.33(ir)	2.24(eir)	2.25(ir)	2.25(eir)	2.29(r)	2.31(eir)	2.44(r)	2.49(eir)	2.51(r)	2.51(eir)	:
Estonia	:	:	:	:	:	:	0.61	0.75	0.66	0.78	:	:
Greece	:	0.47	:	0.49	:	0.51	:	0.67(e)	:	0.64(e)	:	:
Spain	0.88	0.88	0.81	0.81	0.83(e)	0.82	0.89(e)	0.88	0.94(er)	0.95(r)	:	:
France	2.38	2.4	2.34	2.31	2.3	2.22	2.17	2.18	2.18(b)	2.23	2.20(e)	:
Ireland	1.04(e)	1.17(e)	1.31(e)	1.34(e)	1.32(e)	1.28(e)	1.25(ei)	1.20(e)	1.15	1.17	:	:
Italy	1.18	1.13	1.05	1	1.01	1.05(br)	1.07(r)	1.04(r)	1.07	1.11	:	:
Cyprus	:	:	:	:	:	:	0.23	0.25	0.25	0.27	:	:
Latvia	0.59	0.49	0.42	0.53	0.47	0.42	0.45	0.4	0.48	0.44	:	:
Lithuania	:	:	0.52	0.46	0.52(b)	0.56	0.56	0.52	0.6	0.69	:	:
Luxembourg	:	:	:	:	:	:	:	:	1.71(r)	:	:	:
Hungary	1.05(i)	0.98(i)	0.89(i)	0.73(i)	0.65(i)	0.72(i)	0.68(i)	0.69(i)	0.80(i)	0.95(i)	:	:
Netherlands	1.9	1.93(b)	1.97	1.99	2.03	2.04	1.94	2.02(r)	1.90(r)	1.89(r)	:	:
Austria	1.45(e)	1.47	1.54(ei)	1.56(ei)	1.60(ei)	1.71(ei)	1.78	1.86(ei)	1.84(ei)	1.90(eip)	1.93(eip)	:
Poland	:	:	:	:	:	:	:	0.7	0.66	0.64	0.59	:
Portugal	0.61	:	:	0.57(r)	:	0.62	:	0.75(r)	:	0.85(e)	:	:
Slovenia	1.91	1.60(bi)	1.76(i)	1.61(i)	1.36	1.35	1.4	1.44	1.46	1.57	:	:
Slovakia	:	:	0.9	0.93	0.92	1.09	0.79	0.66	0.65	0.64	0.58	:
Finland	2.13	2.18	2.29	2.28	2.54	2.71	2.88	3.23	3.4	3.41	3.49(f)	:
Sweden	:	2.99	:	3.35	:	3.55	3.62(e)	3.65	:	4.27	:	:
United Kingdom	2.08	2.11	2.06	1.97	1.9	1.82	1.81	1.84	1.84(r)	1.89(r)	1.84(f)	:
Iceland	1.32(i)	1.33	1.38(i)	1.54	:	1.88	2.07	2.38	2.76(e)	3.06	3.09(f)	:
Norway	:	1.72	:	1.7	:	1.64	:	1.65	:	1.6	:	:
Japan	2.89(i)	2.83(i)	2.77(i)	2.90(i)	2.78(bi)	2.84(i)	2.95(i)	2.96(i)	2.99(i)	3.07(i)	:	:
United States	2.62(i)	2.50(i)	2.40(i)	2.49(i)	2.53(i)	2.56(i)	2.59(i)	2.63(i)	2.70(i)	2.72(i)	2.64(ip)	2.59(ip)

The indicator provided is GERD (Gross domestic expenditure on R&D) as a percentage of GDP. 'Research and experimental development (R&D) comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications' (Frascati manual, 2002 edition, subsection 63). R&D is an activity where there are significant transfers of resources between units, organisations and sectors and it is important to trace the flow of R&D funds.

Total R&D expenditure in 2001

In % of GDP



Sweden	4.27	Finland	3.41	Japan	3.07	Iceland	3.06	United States	2.72	Germany	2.51	Denmark	2.40	France	2.23	Belgium	2.17	EU-25	1.93	Austria	1.90	Netherlands	1.89	United Kingdom	1.89	Norway	1.60	Slovenia	1.57	Czech Republic	1.22	Ireland	1.17	Italy	1.11	Spain	0.95	Hungary	0.95	Portugal	0.85	Estonia	0.78	Lithuania	0.69	Greece	0.64	Poland	0.64	Slovakia	0.64	Latvia	0.44	Cyprus	0.27
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EU-25, Belgium, Greece, Austria, Portugal: estimated value.

The indicators provided are GERD (gross domestic expenditure on R&D) as a percentage of GDP, percentage of GERD financed by industry, percentage of GERD financed by government and percentage of GERD financed from abroad. 'Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications' (Frascati manual, 2002 edition, subsection 63). R&D is an activity where there are significant transfers of resources between units, organisations and sectors and it is important to trace the flow of R&D funds.

Information society

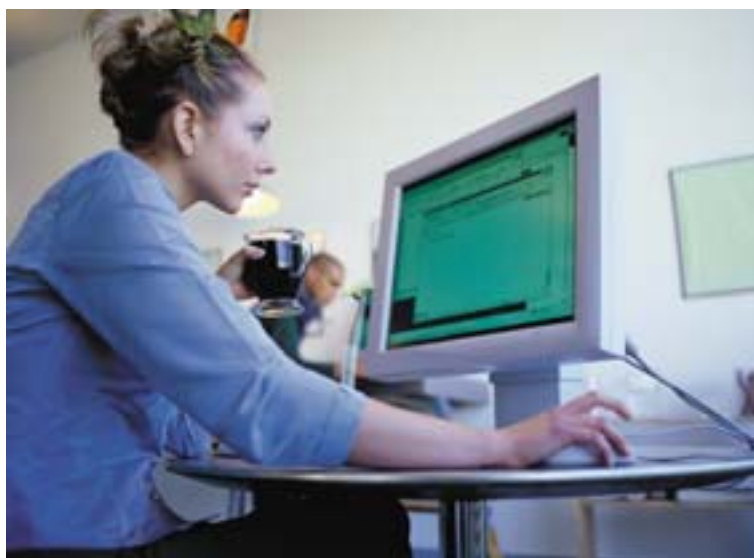
Eurostat data

Eurostat provides a wide range of data on:

- Access of households to information and communication technology (ICT)
- Access of enterprises to information and communication technology
- Expenditure on ICT
- E-commerce
- Market structures of the various telecommunication market segments
- Prices of some typical telecommunications services

The information society: an opportunity for Europe ...

Information technology is developing vigorously day by day. However, the information society, a society whose wealth and growth are based on its ability to handle information efficiently, is not only a technical phenomenon: it is transforming the way we communicate, the way we do business, and the way we live. The information society holds enormous potential and opportunities for Europe and all of its citizens.



... and a challenge for statisticians

Monitoring the rapid change powered by the Internet and other new means of information and communication is a challenge statisticians are well aware of. They rethink their statistical tools and how best to use them to satisfy the new demands for data concerning all aspects of the information society. They cooperate with the different kinds of data users to identify and mediate the new demands.

The information society in the Eurostat yearbook

The Eurostat yearbook introduced a new section on the information society in its 2000 edi-

tion to present basic variables about the phenomenon, especially Internet hosts, Internet users and mobile phones.

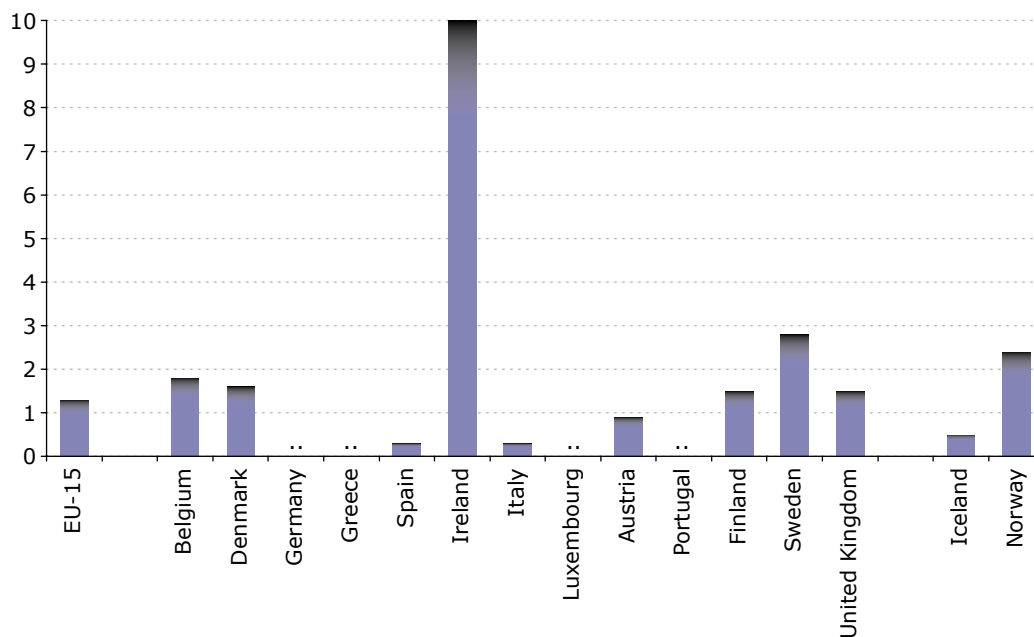
- **Internet hosts** are computers connected to the Internet and which provide data and services to other computers. Automated host counts are in many statistics on a country level restricted to country code top-level domains (domain names like '.de', '.uk' or '.fr'). This is also the case for the figures which are shown in this section. Based on registrations, some statistics also attribute generic domain codes (examples are '.com' and '.org') to countries. This results in higher figures than the counting of the country code top-level domains only.
- The **level of Internet access** is reported separately for households and for enterprises.



— **Mobile phones** were first introduced in Europe in the early 1980s. Constrained by weight and power requirements, they were at the beginning mainly confined to cars. As mobile phones became lighter, cheaper and technically more advanced, the market started to take off, especially in the second half of the 1990s.

E-commerce

Percentage of enterprises' total turnover from e-commerce in 2003

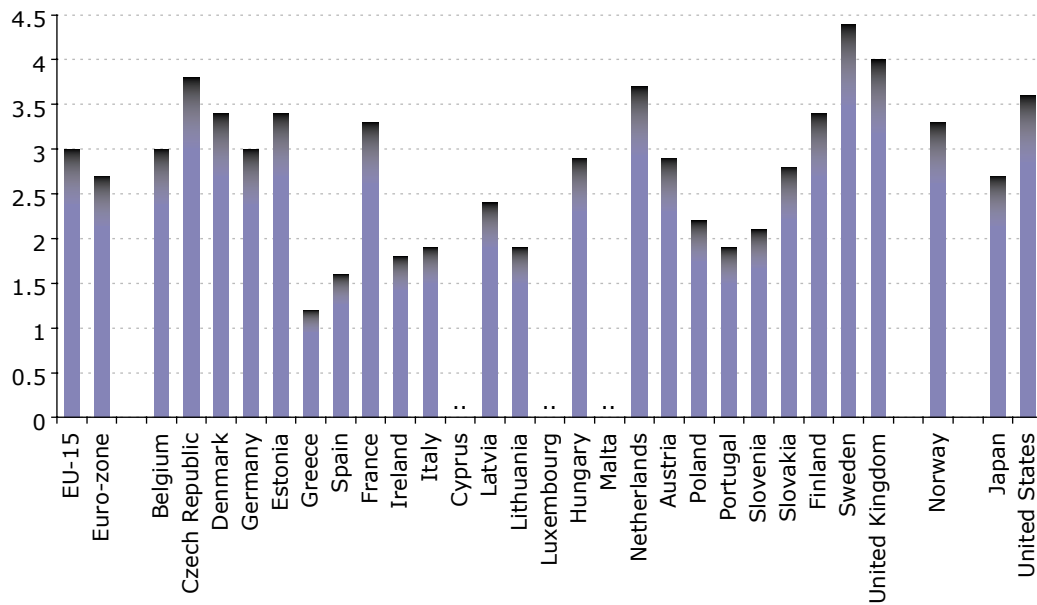


Information comes from the surveys carried out by the National Statistical Institutes on usage of information and communication technologies (ICT) by enterprises. The indicator is calculated as the enterprises' receipts from sales through the Internet as percentage of the total turnover. Sales through other networks are not included, leaving out for instance EDI-based sales. Only enterprises with 10 or more employees are covered.



ICT expenditure: IT expenditure in 2003

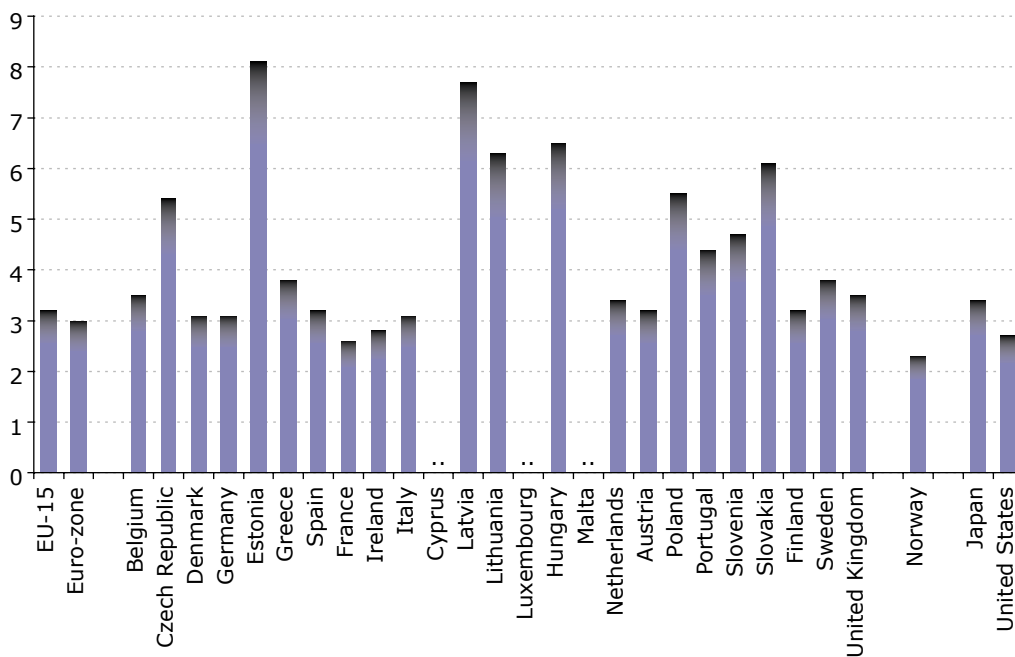
In % of GDP



IT expenditure represents annual data on expenditure for IT hardware, equipment, software and other services expressed as a percentage of GDP.

ICT expenditure: Telecommunications expenditure in 2003

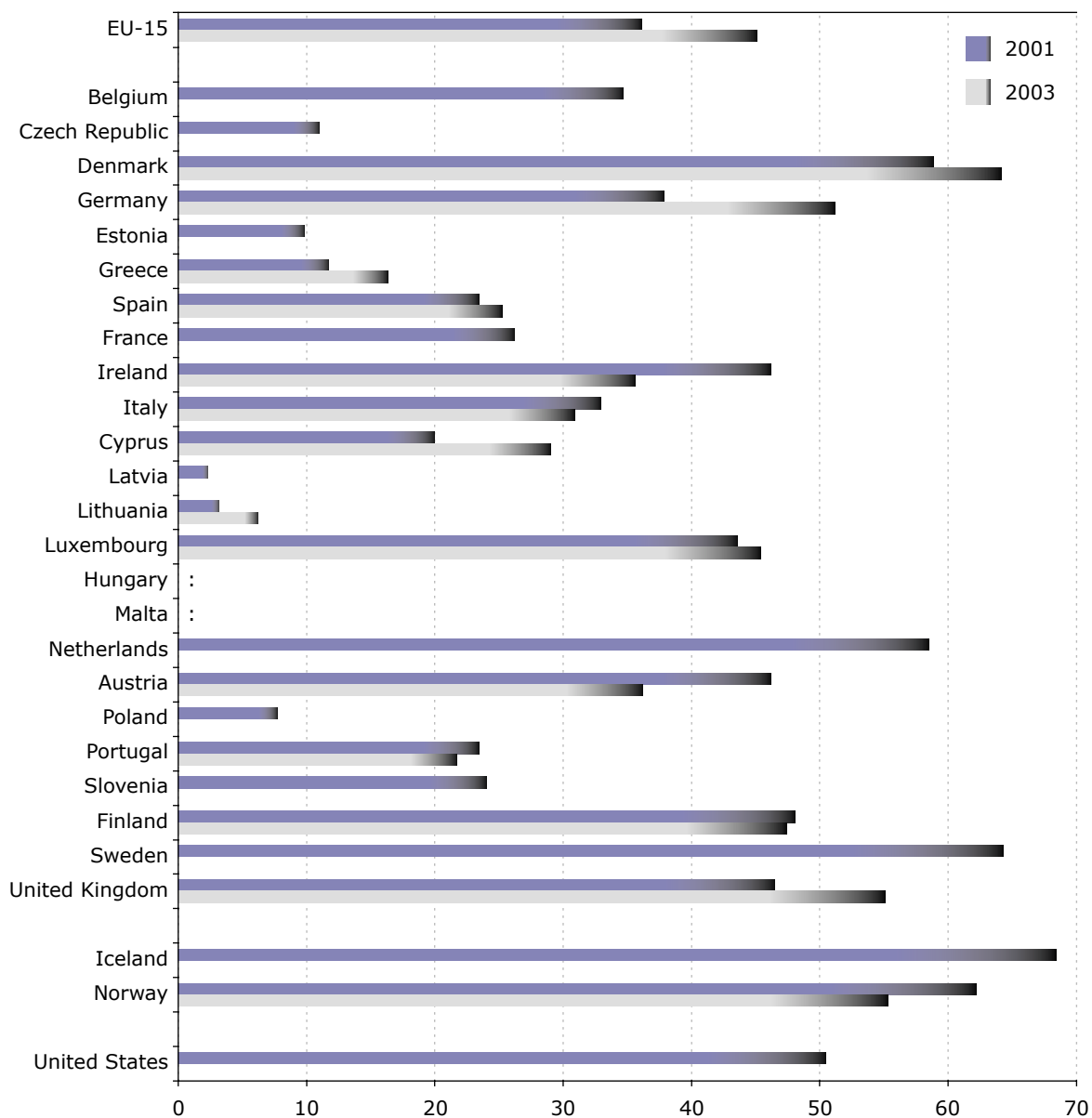
In % of GDP



Telecommunication expenditure represents annual data on expenditure for telecommunication hardware, equipment, software and other services as a percentage of GDP.

Internet access of households

In %



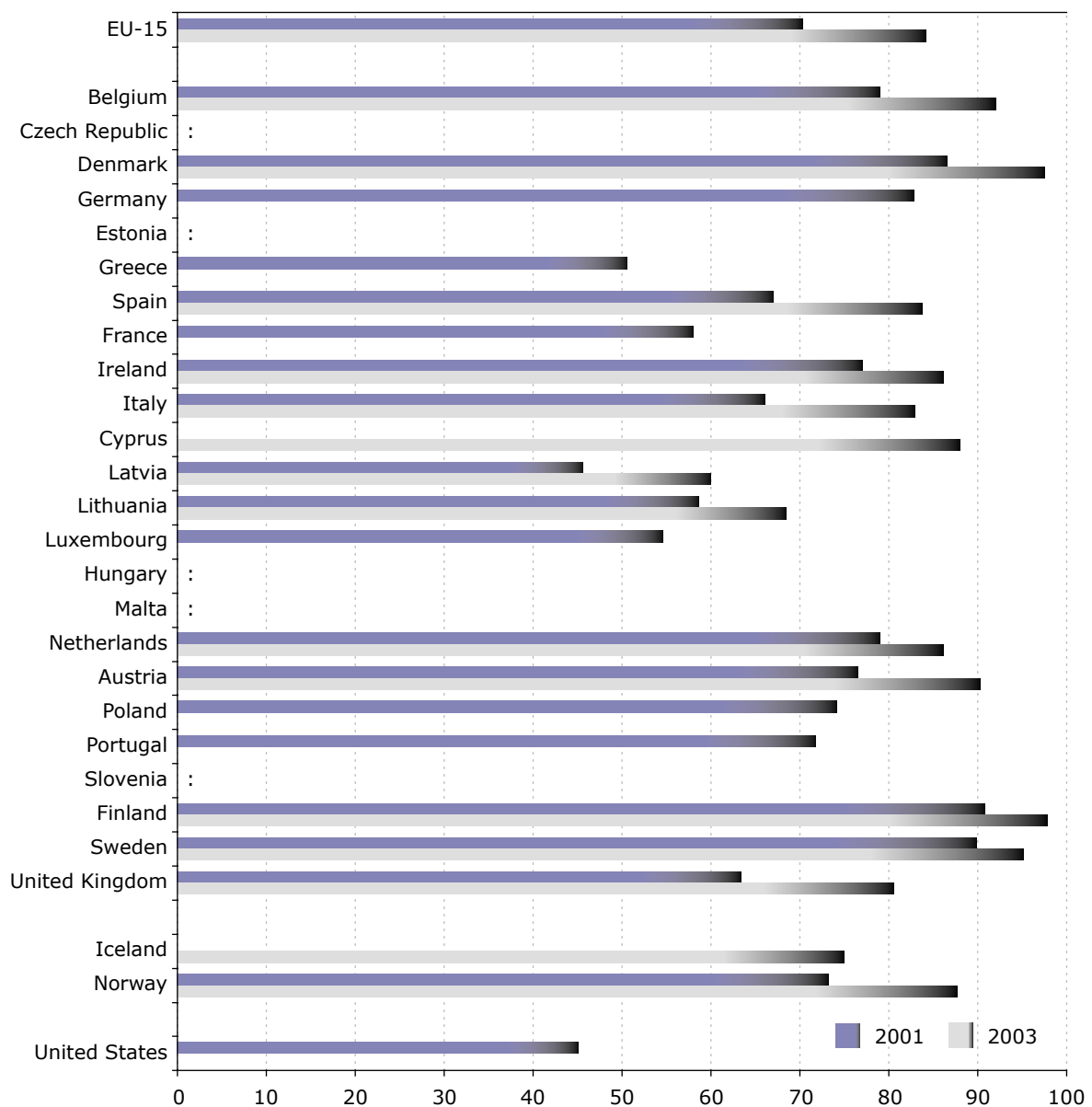
Percentage of households who have Internet access at home. All forms of Internet use are included. The population considered is equal to or over 15 years.



Access to the Internet has increased for both households and enterprises. In 2003, the level of households' access to the Internet in EU-15 was 45 %. The access of enterprises was higher, reaching in some countries over 90 % of all enterprises (with more than nine employed

persons). Thus, the level of Internet access for enterprises in 2003 was 98 % in Finland and Denmark, 95 % in Sweden, 92 % in Belgium and 90 % in Austria. In all the other countries of EU-25 for which data are available, this level was over 60 %.

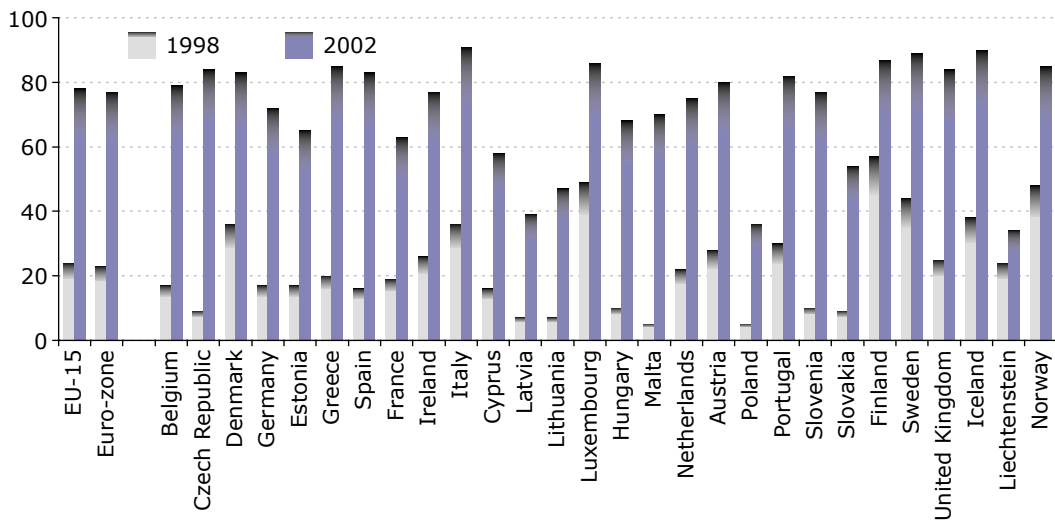
Level of Internet access: enterprises In %



Only enterprises with more than nine persons employed are included. NACE sections D and G to K are covered. The data are provided by national statistical institutes in the frame of the Eurostat survey on ICT usage of enterprises.

Mobile phone subscribers

Per 100 inhabitants



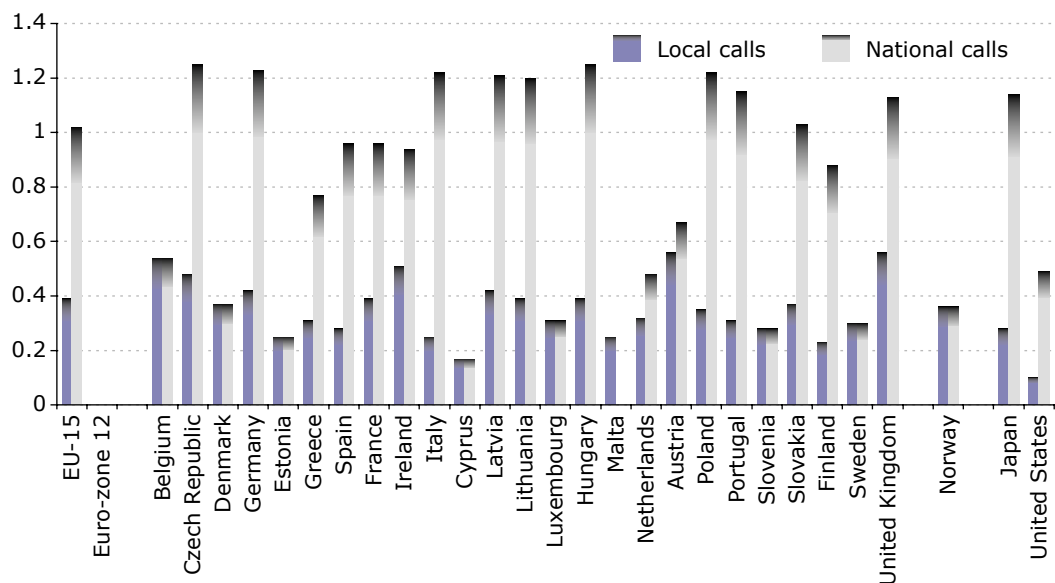
This indicator shows the number of subscriptions to public mobile telecommunication systems using cellular technology related to the population. The total number of mobile subscriptions in the country is divided by the number of inhabitants of the country and multiplied by 100. Active pre-paid cards are treated as subscriptions. One person may have more than one subscription.

From 1991 to 2002, the number of mobile subscribers increased continuously: until 1993, the rate per 100 inhabitants was under 10 in many European countries; in 2002, it often reached

over 80. At the top were Italy, Sweden, Finland, Luxembourg and Greece. The number of mobile phone sets in use roughly corresponds to the number of subscriptions.

Prices of telecommunications in 2002

In EUR



The indicator gives the price in euro of a 10-minute call at 11 am on a weekday (including VAT) for a local call (3 km), respectively a national call (200 km). The prices refer to August each year. Normal tariffs without special rates are used.



Price of telecommunications: calls to the US
In EUR

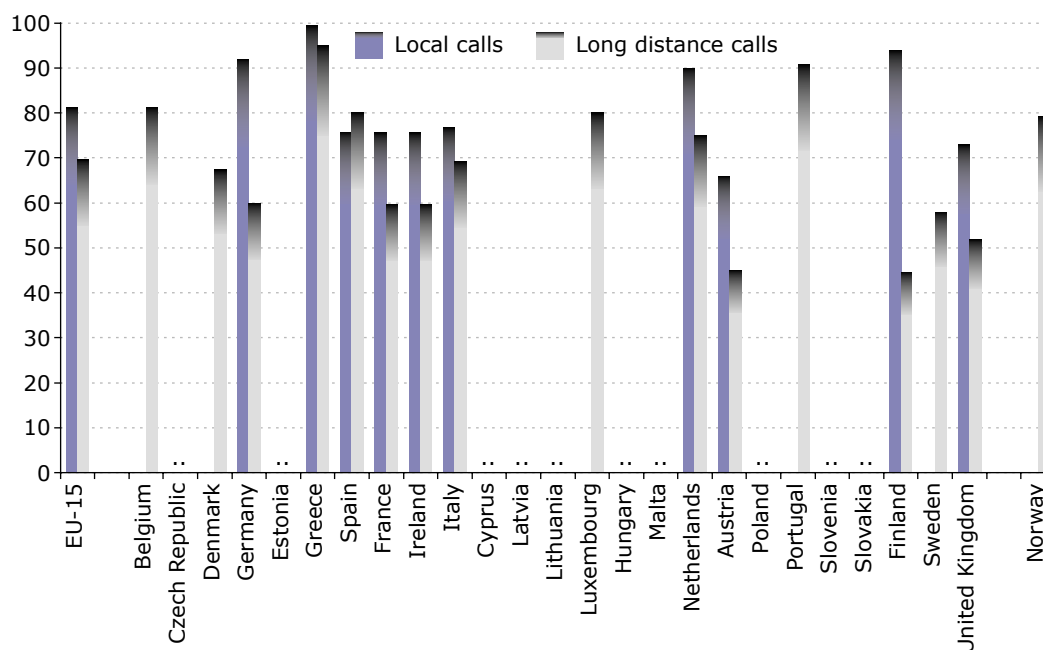


	1997	1998	1999	2000	2001	2002	2003
EU-15	6.63	4.49	3.48	3.09	2.63	2.22	2.13
Belgium	7.5	6	5.95	5.95	1.84	1.83	1.94
Czech Republic	:	:	:	:	:	3.4	:
Denmark	6.72	5.27	4.73	4.73	2.73	2.73	2.39
Germany	7.41	4.32	2.45	2.45	1.23	1.23	1.23
Estonia	:	:	:	:	:	2.6	:
Greece	7	5.82	5.82	3.26	2.91	2.95	2.95
Spain	6.17	6.08	4.53	4.25	4.25	2.21	1.53
France	6.78	3.44	3.05	2.97	2.97	2.34	2.34
Ireland	4.61	3.68	2.92	2.92	1.91	1.91	1.91
Italy	7.26	4.99	3.63	2.79	2.79	2.24	2.12
Cyprus	:	:	:	:	:	1.7	:
Latvia	:	:	:	:	:	6.9	:
Lithuania	:	:	:	:	:	8.1	:
Luxembourg	7.37	5.67	2.74	2.06	1.44	1.44	1.44
Hungary	:	:	:	:	:	3.8	:
Malta	:	:	:	:	:	12.7	:
Netherlands	8.48	2.77	0.9	0.78	0.78	0.76	0.85
Austria	9.21	5.76	6.08	4.32	4.32	3.77	3.77
Poland	:	:	:	:	:	10.5	:
Portugal	8.25	6.14	4.23	3.68	2.89	2.94	2.94
Slovenia	:	:	:	:	:	1.9	:
Slovakia	:	:	:	:	:	2.7	:
Finland	8.31	7.43	5.65	5.68	4.8	4.84	4.84
Sweden	5.4	4.9	4.9	1.12	1.12	1.12	1.12
United Kingdom	3.92	3.37	3.37	3.37	3.37	3.37	3.37
Norway	5.68	3.48	2.1	1.21	1.18	0.92	0.86
Japan	13.49	15.94	6.07	4.86	4.86	4.86	4.86

The indicator gives the price in euro of a 10-minute call at 11 am on a weekday (including VAT) for an international call (to the United States). The prices refer to August each year. Normal tariffs without special rates are used.

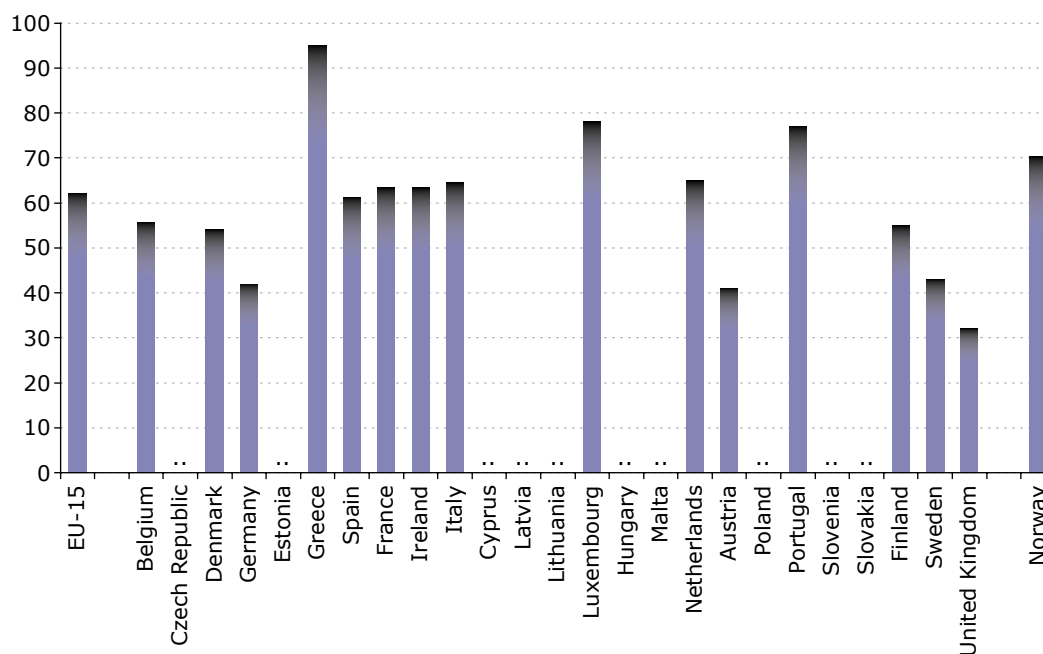


Market share of the incumbent in fixed telecommunications in 2002



The incumbent is defined as the enterprise active on the market just before liberalisation. The market share is calculated as the share of the incumbent's retail revenues of the total market. A local call is a call within local networks. A long distance call is a call from one local network to another.

Market share of the incumbent in fixed telecommunications: international calls in 2002



The incumbent is defined as the enterprise active on the market just before liberalisation. The market share is calculated as the share of the incumbent's retail revenues of the total market.