

Patenting 2006

Finland has the third highest number of European patent applications, relative to population

Relative to population, the number of European patent applications filed in Finland was the third highest in 2006. Switzerland held the top position with 730 applications per one million population. Calculated for all EU countries, the corresponding number was 130 applications.

In 2006, Finnish applicants filed 1,015 PCT (Patent Cooperation Treaty) applications with the National Board of Patents and Registration of Finland, while the number of PCT applications was 1,056 the year before. Finnish applicants filed 1,678 patent applications with the European Patent Office, of which 424 were direct applications and the rest were PCT applications in the regional stage.

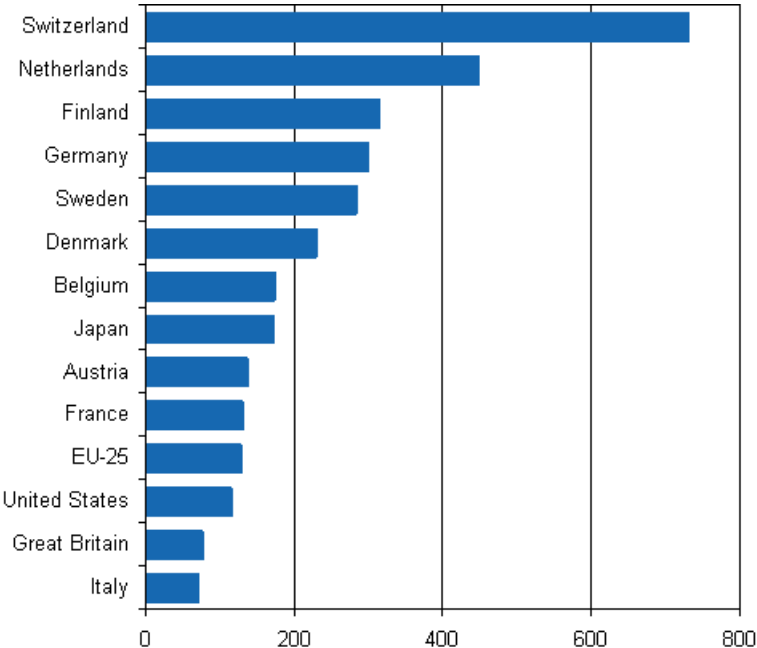
A total of 2,018 patent applications were filed directly with the National Board of Patents and Registration of Finland in 2006. This was 43 applications down from the year before. Applications filed directly from abroad numbered 205. The majority of foreign patent applications came from the United States (52), Germany (40) and Sweden (37). The reason for the sharp drop in the number of foreign patent applications is the increasing changeover to international patenting.

The number of applications filed by Finnish applicants fell by 22 from the year before. Enterprises and associations filed 77 per cent of domestic patent applications and the rest were filed by private individuals.

In 2006, a domestic patent application was filed by 526 enterprises or associations. The number was down by 13 applications from the previous year. Sixteen enterprises filed patent applications jointly with some other applicant, and 18 enterprises filed 10 or more applications. Most enterprises filed only one patent application; in 2006 such enterprises numbered 354.

The highest number of patent applications was filed in the field of performing operations and transporting. According to the International Patent Classification, the majority of the domestic patent applications filed in Finland in 2006, or 23 per cent, were in the section of performing operations and transport. The second biggest section was electricity, accounting for 17 per cent of all applications. Among foreign applications, electricity was the biggest section with a 36 per cent share, and the next biggest share of applications, at 14 per cent, was filed in the section of mechanical engineering.

European patent applications per one million population in 2006



Contents

1.1 Patent statistics as technology indicators.....	4
1.2 Patenting in Finland.....	5
Patent applications filed.....	5
Patents granted.....	5
1.3 International patenting.....	6
Triadic patent families.....	6
International cooperation in patenting.....	7
1.4 Material and concepts.....	8
Tables	
1. Patent applications filed in Finland in 1985-2006.....	9
2. Domestic patent applications by region in 2000, 2002, 2004 and 2006.....	9
3. Patent applications filed by enterprises and associations in Finland by industry in 2000, 2003 and 2006.....	10
Patents granted in Finland by IPC section in 2006.....	10
5. Patents granted to enterprises and associations by industry in 2000-2006.....	10
6. European patents granted in 2001 and 2006.....	11
7. Patents granted to selected countries in the United States in 2001 and 2006.....	11
8. Triadic patent families in selected countries in 1999-2003.....	11
9. Partner countries in patents granted to Finnish inventors in 2006.....	12
Figures	
1. Patent applications filed in Finland by IPC section in 2006.....	13
2. Patents granted and European patents validated in 2000–2006.....	13
3. Patents granted in Finland in 2006.....	14
4. European patents granted in 1990-2006.....	14
5. Selected countries' shares of European patenting in 2006.....	15
6. European patent applications per one million population in selected countries in 2006.....	15
7. Patents granted in the United States in 1990-2006.....	16
8. Triadic patent families in 1990-2005.....	16
9. Triadic patent families per one million population in 1995 and 2005.....	17
10. Selected countries' shares of triadic patent families in 1995 and 2005.....	17
11. Domestic ownership of foreign inventions.....	18
12. Foreign ownership of domestic inventions.....	18
13. Joint inventions' share of domestic inventions.....	19

1.1 Patent statistics as technology indicators

This publication describes technology outputs through data on patents. The topic under examination is domestic patenting via the National Board of Patents and Registration of Finland. International patenting is described on the basis of data from the European Patent Office (EPO) and the United States Patent and Trademark Office (USPTO).

A patent is an exclusive right to exploit an invention commercially, granted for a limited term to the holder of the invention. At the same time, with the release into the public domain of patent data, it offers other parties the opportunity to utilise existing technical information against a fee. The significance of patenting is demonstrated by the sharp rise in the number of patent applications. In 2006, the EPO received roughly 135,000 patent applications. In the same year, 174,000 patents were granted in the United States. The use of patent databases in compiling technology indicators and technological research in general is facilitated by the universal accessibility of abundant, internationally comparable, varied and commensurable data as long timer series.

Patent indicators are the most important and frequently used measure of the innovation output; after all the patent is associated by definition with the innovation. At the same time these indicators describe the transfer of knowledge between enterprises, countries and different fields of technology. The growth of internationalism is, in turn, reflected in the increasing divergence of patent applicants' and inventors' countries of residence.

However, patent statistics tend to give only a partial or incomplete picture of new technology, because not all new inventions are or can be patented. The number of patent applications is limited by the slow processing, which usually takes a few years. The costs of a patent may also run up to tens of thousands of euros. In addition, the relatively high maintenance costs must be borne in mind.

Comparisons between countries are complicated by the fact that the grounds for granting patents and patent regulations in different countries can differ significantly from one another.

The economic significance of patents varies. Inventions with potential for commercial exploitation may consciously be left outside the protection awarded by a patent. It may be more lucrative for an enterprise to keep the invention secret than to release it to the public domain through patenting. An invention can also be protected by trademarking, among other things.

Patented products or methods may be major innovations of substantial economic value or minor improvements to existing products or processes. In statistics, however, all patents are equal. The significance of patenting to the national economy or to an individual enterprise may be considerable: the funds invested in the development of patents may be paid back several times over.

1.2 Patenting in Finland

Patent applications filed

In 2006 the total number of patent applications filed in Finland was 2,018. This was 43 applications down from the year before. The number of foreign applications filed directly with the National Board of Patents and Registration of Finland was 205. Most of these applications came from the United States (52), Germany (40) and Sweden (37). The reason for the drop in the number of patent applications is the increasing changeover to international patenting. In 2006 Finnish applicants filed 1,015 PCT (Patent Cooperation Treaty) applications with the National Board of Patents and Registration of Finland, while the number of PCT applications was 1,056 the year before. Finnish applicants filed 1,678 patent applications with the European Patent Office, of which 424 were direct applications and the rest were PCT applications in the regional stage.

Examined by region, the most domestic patent applications were filed in the Helsinki sub-regional unit. They numbered 630, of which 130 were filed by individual inventors. The next highest numbers of patent applications were filed in the sub-regional units of Tampere (149), Jyväskylä (140) and Oulu (91). Of all the domestic patent applications, 70 were filed by inventors who live abroad or whose address in Finland is unknown

Nearly one-half of the 526 enterprises and associations that applied for a patent in Finland operated in the field of manufacturing. They filed a total of 915 patent applications. The highest numbers of enterprises which filed applications for patents were in the metal and engineering industries. The enterprises numbered 105 and the patent applications 458. The next highest numbers were in other business activities (TOL 74), in which 94 enterprises filed 154 applications. In the electronics industry, 63 enterprises filed a total of 287 patent applications

Patents granted

In 2006 a total of 1,059 patents were granted. The number of patents granted fell by 700 from the year before. Most of the domestic patents (710) were granted to enterprises (649). The share of patents granted to foreign applicants was roughly one-third. The number went down by nearly 300 from the year before. The transition of patenting from applications filed directly with the National Board of Patents and Registration of Finland to patenting under international patent treaties is reflected in the strong growth of the number of European patents which have come into effect in Finland. In 2006 the number of European patents which came into effect in Finland was 6,469. This number was 830 up from the previous year.

The biggest shares of patents granted by the National Board of Patents and Registration of Finland in 2005 were in the sections of electricity and performing operations and transport. Both of these shares amounted to one-fifth of the patents granted. Regionally the most patents were granted into the Helsinki sub-regional unit (37%). The next biggest shares were in Tampere (12%) and Jyväskylä (6%). Compared with the year before, the shares of Helsinki and Jyväskylä remained unchanged. By contrast, the share of Tampere fell by 6 percentage points and that of Oulu by 2 percentage points.

All in all, 261 enterprises or associations were granted a patent in 2006. This is 50 enterprises less than in the year before. The highest number of patents granted was in the metal and engineering industry, where 264 patents were granted to 69 enterprises. The next highest number of patents was in the electronic industry, where 139 patents were granted to 42 enterprises.

1.3 International patenting

As from the year 2000, the total number of European patent applications has grown at an annual rate of 5 per cent. All in all, a total of 135,000 patent applications were filed in 2006. Since Finland acceded to the European Patent Convention the number of Finnish patent applications has risen to roughly 1,700 applications. The EU member states filed 45 per cent of the applications. This share has remained more or less stable throughout the 1990s. The highest figure was recorded for the United States at roughly 26 per cent. Within the EU, Germany accounted for the largest share at 18 per cent. Other major EU countries France and the Netherlands had much lower shares, at 5.9 and 5.4 per cent, respectively. Finland accounted for 1.2 per cent of all applications, the 11th highest share in 2006.

Relative to population of the country, the number of European patent applications filed in Finland was the third highest. Switzerland clearly held the top position with 730 applications per one million population. The corresponding figure for all EU countries was 130 applications.

European patents totalled 63,000 in 2006

Since the year 2000, the number of European patents granted has grown at an average annual rate of 15 per cent. The share of the EU countries of all applications was 48 per cent. The United States and Germany had the biggest shares per country (by inventor), at 24 and 23 per cent, respectively. Finland's share of European patents granted was 1.4 per cent. The share of Finnish patents was higher in ICT patents (at 2.2%) than in all patents and lower in patents in the field of biotechnology (at 0.7 per cent). The United States accounted for the biggest share of all patents (23%) as well as of ICT patents (25%) and biotechnology patents (39%).

In the United States 77,000 patents granted to foreign applicants

In 2006 a total of some 158,000 patents were granted in the United States. Foreign applicants accounted for 49 per cent of this figure. The combined share of the EU countries was 14 per cent, which was considerably less than the figures for the United States (51%) and Japan (21%). The share of patents granted to foreign applicants increased by roughly two percentage points compared to 2000. Finland's share of slightly over one percent of patents granted to foreign applicants in the United States grew slightly, by 0.3 percentage points, from the beginning of the 2000s. The 853 patents granted in 2006 showed an increase of roughly 250 patents from the year 2000. Roughly two-thirds of the patents granted to Finnish applicants were in the ICT sector (553). The number of patents in the biotechnology sector granted to Finnish applicants was 16. The highest shares of foreign ICT and biotechnology patents were recorded for Japan (51% and 24%) and Germany (8% and 13%).

Triadic patent families

Triadic patent families are defined as a set of patents granted by the European, US and Japanese authorities that share one or more priorities. In other words, these are patents issued to a single invention at all three patent offices.

The concept of triadic patent family and the calculation method developed by the OECD are both designed to improve the international comparability of patent indicators. The key aims are to decrease the overlap in calculation inherent to conventional indicators, that is, to eliminate as far as possible the effect of patents granted for one invention in several countries and the impact of domestic patenting. Furthermore, triadic patent families are a more useful indicator for the purposes of assessing the significance of patented inventions. An invention is likely to be more significant, if patent applications are filed for it in all the three major patent offices.

A total of 53,000 triadic patent families in 2005

The number of triadic patent families has increased at an average annual rate of roughly 2 per cent since the beginning of the 2000s. The growth rate has slowed down clearly when compared with the end of the 1990s. This same trend is seen in countries with the highest numbers of triadic patent families, i.e. the United States, Japan, Germany and France. According to OECD estimates, the number of Finnish triadic patent families was 264 in 2005, which is roughly 160 patent families down from the end of the 1990s.

The United States accounted for the largest share of all triadic patent families (31%); the share was 3 percentage points down from 1995. The share of European countries of the triadic patent families fell by 4 percentage points from 1995 to 2005, while Japan's share grew by 2 percentage points to 29 per cent. The share of Finnish triadic patent families fell from 1 per cent to 0.5 per cent during the corresponding period.

Relative to population, Japan had the highest number of triadic patent families in 2005. They numbered roughly 120 per one million population. The number of Finnish triadic patent families was 50 per one million population in 2005. This was roughly 10 less than in 1995. The EU countries had 32 patent families per one million population. The highest growth in the number of triadic patent families measured with this indicator was in Korea, where their number grew from 7 in 1995 to 65 in 2005, which was the sixth highest figure.

International cooperation in patenting

This section discusses international cooperation between patent holders and patent inventors. The cooperation is described with the patents granted by the European Patent Office (EPO) and the US Patent and Trademark Office (USPTO). The statistics presented here are gross figures and therefore neither the numbers of patents by country nor the total numbers are exactly the same as those presented above.

A distinction is made between three types of cooperation:

- domestic ownership of foreign inventions, e.g. patents owned by Finnish enterprises or private individuals that have one or more foreign inventors;
- foreign ownership of domestic inventions, e.g. inventions (patents) made in Finland that have one or more foreign owners;
- patents that involve one or more foreign inventors.

Ownership of foreign inventions was by far the highest in Luxembourg, where 77 per cent of EPO patents and over 87 per cent of USPTO patents had a foreign inventor (Figure 6.4.1.). However, the overall number of patents granted was low at only some 60 patents per year. Among the countries with significant patenting activities, the highest share was recorded for Switzerland, where roughly 47 per cent of the EPO patents and roughly 54 per cent USPTO patents had a foreign inventor. The figures recorded in the Netherlands were similar to those of Switzerland; in the EPO patents the share was lower (40%) and in the USPTO patents higher (59%). About 26 per cent of all USPTO patents granted to Finnish applicants had a foreign inventor. The share was lower in EPO patents (20%). Internationalisation in the EPO patents was lowest in Japan (4%) and Italy (6%).

When examined by the numbers of patents granted, Luxembourg again had the highest share of foreign owners of domestic inventions: the share for EPO patents was 54 per cent for USPTO patents 76 per cent. The next highest shares were recorded for Great Britain and Austria, where 35 per cent of EPO patents and 53 per cent of USPTO patents had a foreign applicant (or a joint foreign applicant). The share of foreign applications for inventions made in Finland was about 10 per cent both for EPO and USPTO patents. At the EU level, the figure for EPO patents was around 10 per cent and for USPTO patents slightly over 20 per cent.

The involvement of foreign inventors in domestic inventions provides a measure of the internationalisation of scientific activities and product development. Joint patenting has generally shown a tendency to increase. The highest shares of joint innovations, at 53 per cent of EPO patents and 62 per cent of USPTO patents, were in patents granted to applicants from Luxembourg. In major countries with high levels of patenting, such as Germany and the United States, the share of joint inventions was relatively low. For EPO patents it stood at roughly 10 per cent.

In Finnish patents the share of joint inventions was slightly over 10 per cent both for EPO patents and USPTO patents. In 2006 EPO patents owned by Finnish holders had the highest number of inventors from the United States and Sweden. In patents granted in the United States, the highest number of inventors came from the US, Germany and Great Britain (4%). Among patents granted by the EPO for inventions made in Finland, the highest number patent owners came from Sweden and the United States. As for patents granted in the United States, in which a Finnish inventor was involved, the highest number of patent owners were from the US and Sweden. In both EPO and USPTO patents, the highest numbers of joint inventions were recorder with US and German inventors.

1.4 Material and concepts

The data on patents applied and granted in Finland are based on figures from the National Board of Patents and Registration database. The data on international patenting are drawn from the OECD patent database European Patent Office annual reports. Regional and country data are based on information for the patent inventor unless otherwise stated. Annual data for international patenting are based on the patent application's priority date.

A **patent** is an exclusive right commercially to exploit an invention granted by the relevant authority for a limited period (usually 20 years) to the inventor or the holder of the inventor's rights. A patent is issued on condition that the invention is new and innovative, i.e. based on non-obvious information and had industrial application. The counterbalance to the exclusive right to commercial exploitation of the invention is the entry of the patent into the public domain. The patent applicant is required to disclose all material information concerning the invention. Indeed, the requirement of publicity is one of the most important features of the patenting system.

Date of priority is the first date on which a patent application has been filed for the invention concerned in any country.

Priority country is the country where a patent application is first filed. This is usually the applicant's country of residence.

Date of publication is the date when the information relating to the patent application becomes public, which is usually 18 months after the date of priority.

Date of issuance is the date on which the patent authority issues the patent. Patent protection obtained for an invention is effective retroactively from the date of application. In Finland the processing of a patent application takes about 2-2½ years, at the European Patent Office around 5 years and in the United States Patent and Trademark Office three years.

Triadic patent families is a patent indicator developed by the OECD which combines the patents granted by the three biggest patent authorities (in Europe, the US and Japan) to the same invention. This is done on the basis of the patent's priority or priorities. The aim is to avoid overlapping calculations and to reduce the impact of the number of domestic applications. A patent granted by all three patent offices also serves as an indicator of an internationally valuable and important invention

The European Patent Convention (EPC) The European Patent Convention was signed in 1973 and it came into force in 1977. The convention led to the foundation of the European Patent Office (EPO), which grants European patents. Currently 30 countries have acceded to the Convention. In addition, there are six extension states to which a European patent can be extended on separate application.

A single application filed with the **European Patent Office** suffices to obtain a patent in all designated contracting states. A European patent affords the same rights in these contracting states as a patent granted by a national patent office. The EPO is not an EU institution.

PCT applications are based on the Patent Cooperation Treaty (PCT), which took effect in 1978 and which currently covers 138 countries. At the first stage of filing a PCT application, applicants shall designate the countries in which they wish to file or retain the right to file a patent application with one patent office in a contracting country. The actual processing of the application takes place at the next, regional/national stage. The patent is always granted by a regional (e.g. the European Patent Office) or a national patent authority (In Finland the National Board of Patents and Registration). Administration of PCT applications is in the hands of the World Intellectual Property Organisation (WIPO).

Tables

1. Patent applications filed in Finland in 1985-2006

	Private assignee	Firm - community	Domestic applications total	Foreign applications	Applications Total
1985	681	1038	1719	3480	5199
1986	718	1035	1753	3630	5383
1987	747	1104	1851	3949	5800
1988	742	1235	1977	4091	6068
1989	682	1262	1944	4415	6359
1990	708	1360	2068	4414	6482
1991	863	1315	2178	4013	6191
1992	803	1247	2050	3948	5998
1993	891	1316	2207	3768	5975
1994	941	1395	2336	3852	6188
1995	731	1393	2124	4240	6364
1996	802	1424	2226	3087	5313
1997	784	1626	2410	2258	4668
1998	680	1791	2471	387	2858
1999	678	1833	2511	359	2870
2000	695	1883	2575	338	2913
2001	627	1764	2391	277	2668
2002	550	1606	2156	216	2372
2001	467	1506	1973	214	2187
2004	443	1567	2010	215	2225
2005	464	1371	1835	226	2061
2006	419	1394	1813	205	2018

2. Domestic patent applications by region in 2000, 2002, 2004 and 2006

Region	Year			
	2000	2002	2004	2006
Regions Total	2575	2156	2010	1813
Uusimaa	928	744	726	662
Itä-Uusimaa	39	39	20	14
Varsinais-Suomi	223	172	138	137
Satakunta	70	75	60	46
Kanta-Häme	52	58	38	39
Pirkanmaa	344	302	264	174
Päijät-Häme	80	72	62	68
Kymenlaakso	50	44	29	42
South Karelia	23	27	44	31
Etelä-Savo	60	38	34	35
Pohjois-Savo	71	75	85	77
North Karelia	46	29	33	49
Central Finland	180	147	154	154
South Ostrobothnia	30	30	30	24
Ostrobothnia	41	46	59	47
Central Ostrobothnia	12	7	3	8
North Ostrobothnia	200	144	128	110
Kainuu	34	13	16	12
Lappi	41	26	24	12
Åland	5	.	7	5
Unknown / Foreign countries	56	75	67	70

3. Patent applications filed by enterprises and associations in Finland by industry in 2000, 2003 and 2006

Industry	Year					
	2000		2003		2006	
	Enterprises	Applications	Enterprises	Applications	Enterprises	Applications
Total of industries	563	1898	527	1526	526	1393
Total of manufacturing industries	301	1343	272	1032	255	915
Manufacture of food products and beverages	14	28	8	14	9	20
Manufacture of textiles and clothing	4	5	2	2	2	6
Manufacture of wood and wood products	18	46	21	57	18	49
Manufacture of chemicals and chemical products	36	126	36	92	34	59
Manufacture of metals, metal products, machinery and equipment	129	526	117	475	105	458
Manufacture of electrical and optical equipment	71	561	61	355	63	287
Other manufacturing industries	29	51	27	37	24	36
Total of other industries	262	555	255	494	271	478
Electricity, gas and water supply	1	1	0	0	2	4
Construction	17	19	7	10	24	36
Whole and retail trade	49	81	48	66	53	68
Transport, storage and communication	10	100	18	65	8	17
Computer and related activities	40	64	39	60	33	43
Research and development	25	99	23	115	32	119
Other business services	87	146	83	131	94	154
Other industries	33	45	37	47	25	37

Patents granted in Finland by IPC section in 2006

	Assignee's country of residence				
Total of patents granted	1059	710	68	642	349
Human necessities	122	47	13	34	75
Performing operations, transporting	204	171	18	153	33
Chemistry, metallurgy	154	63	4	59	91
Textiles, paper	125	95	1	94	30
Fixed constructions	51	47	8	39	4
Mechanical engineering	75	64	10	54	11
Physics	115	90	7	83	25
Electricity	213	133	7	126	80

5. Patents granted to enterprises and associations by industry in 2000-2006

Industry	Year							
	Enterprises	Grants	Enterprises	Grants	Enterprises	Grants	Enterprises	Grants
Total of industries	262	879	332	868	372	1114	261	649
Total of manufacturing industries	177	725	219	674	218	817	160	478
Manufacture of food products and beverages	6	12	10	11	4	9	5	5
Manufacture of textiles and clothing	4	4	2	2	2	3	2	3
Manufacture of wood and wood products	12	25	11	20	11	19	8	16
Manufacture of chemicals and chemical products	23	54	25	57	26	55	20	33
Manufacture of metals, metal products, machinery and equipment	81	269	107	240	98	356	69	264
Manufacture of electrical and optical equipment	40	349	47	321	65	357	42	139
Other manufacturing industries	11	12	17	23	12	18	14	18
Total of other industries	85	154	113	194	154	297	101	171
Electricity, gas and water supply	1	1	3	3	2	2	..	..
Construction	3	4	3	4	6	7	8	11
Wholesale and retail trade	19	26	19	25	14	22	12	18
Transport, storage and communication	6	30	11	51	14	72	5	24
Computer and related activities	7	9	6	6	31	40	21	30
Research and development	10	30	14	35	12	35	18	42
Other business services	26	36	40	50	61	100	30	35
Other industries	13	18	17	20	14	19	7	11

6. European patents granted in 2001 and 2006

Inventor's country of residence	Year					
	2001			2006		
	Grants	ICT	Biotechnology	Grants	ICT	Biotechnology
Finland	349	123	12	740	372	19
Sweden	729	138	14	1282	425	40
Germany	8294	1487	138	13802	2841	342
France	2849	632	44	4289	1047	188
Great Britain	1677	462	76	2696	795	174
Netherlands	875	270	31	1554	645	65
Austria	438	60	19	761	114	19
EU-25	17592	3560	394	29465	6922	1022
Switzerland	1031	167	25	1493	296	42
Japan	6596	2812	131	11229	4515	354
United States	8218	2746	417	13355	4397	1043
Total of countries	34710	9594	1037	59025	17256	2695

7. Patents granted to selected countries in the United States in 2001 and 2006

Inventor's country of residence	Year					
	2001			2006		
	Grants	Biotechnology	ICT	Grants	Biotechnology	ICT
Finland	743	26	310	853	16	553
Sweden	1745	63	544	1109	44	467
Germany	11273	293	2209	9144	241	3030
France	4066	188	981	3170	147	1242
Great Britain	3980	254	1204	3276	169	1486
Netherlands	1328	81	407	1222	55	517
Austria	584	28	86	510	15	151
EU-25	27305	1152	6499	22319	856	8405
Switzerland	1428	60	218	1108	46	313
Japan	33269	437	15584	33595	458	19568
Total of foreign countries	78752	2178	28960	76856	1925	38701
United States	87316	4092	30798	81418	3269	39281

8. Triadic patent families in selected countries in 1999-2003

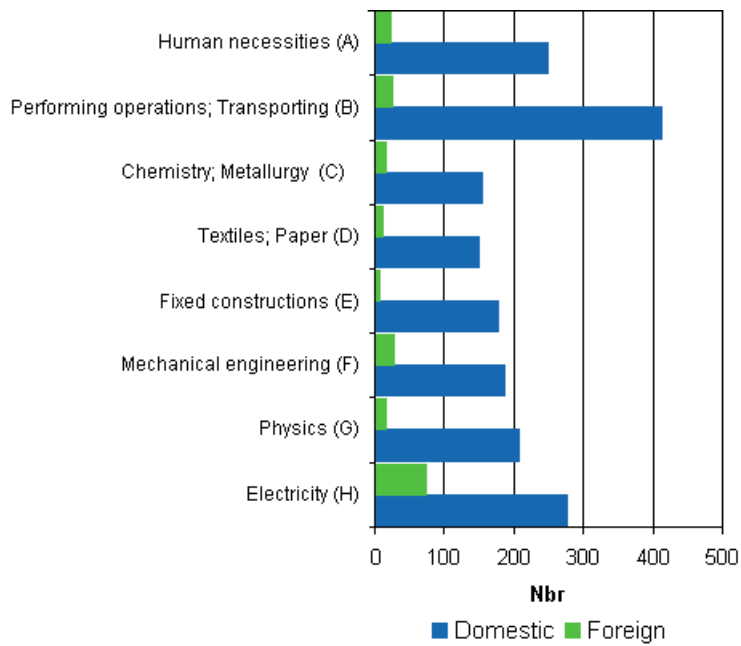
Inventor's country of residence	Year								
	1999			2001			2003		
	Triadic patent families	ICT	Biotechnology	Triadic patent families	ICT	Biotechnology	Triadic patent families	ICT	Biotechnology
Finland	423	186	10	325	91	3	259	13	..
Sweden	730	382	37	593	104	14	596	8	1
Denmark	234	36	33	228	31	9	233	5	1
Germany	6255	1316	164	6223	786	71	6176	126	4
France	2308	761	111	2257	458	46	2407	52	2
Great Britain	1678	609	122	1640	360	48	1637	29	0
Netherlands	1028	410	17	1409	338	9	1203	29	..
Italy	637	143	15	693	75	5	703	10	..
Austria	241	81	12	270	50	9	281	9	..
EU-25	14618	4073	550	14755	2420	223	14717	322	8
Switzerland	752	133	29	782	132	13	794	16	2
Japan	12740	5186	210	13642	4157	160	14428	1524	37
United States	15516	5600	945	15417	4334	479	16037	1406	70
Total of countries	45782	15720	1883	47235	11667	953	49975	3540	140

9. Partner countries in patents granted to Finnish inventors in 2006

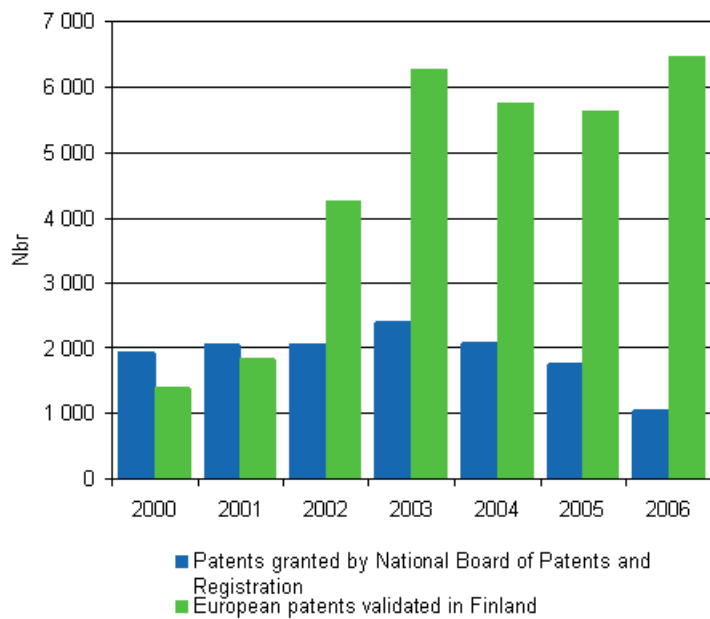
Partner's country of residence	Domestic ownership of inventions made abroad, EPO	Domestic ownership of inventions made abroad, USPTO	Foreign ownership of domestic inventions, EPO	Foreign ownership of domestic inventions, USPTO	Patents with at least one foreign co-inventor, EPO	Patents with at least one foreign co-inventor, USPTO
Total of grants	835	1040	788	915	788	915
Total co-operation with abroad	177	295	74	96	92	129
EU-25	123	146	50	45	62	67
Great Britain	33	46	2	3	10	13
United States	33	123	14	41	22	56
Germany	31	30	8	8	20	21
Sweden	19	25	32	19	14	10
Denmark	15	26	3	1	5	5
Austria	10	1	1	..	5	2
Japan	7	12	..	..	3	1
Netherlands	5	7	2	13	5	10
France	5	2	..	1	6	4
Italy	2	5	..	..	1	3
Switzerland	1	2	6	7	2	4

Figures

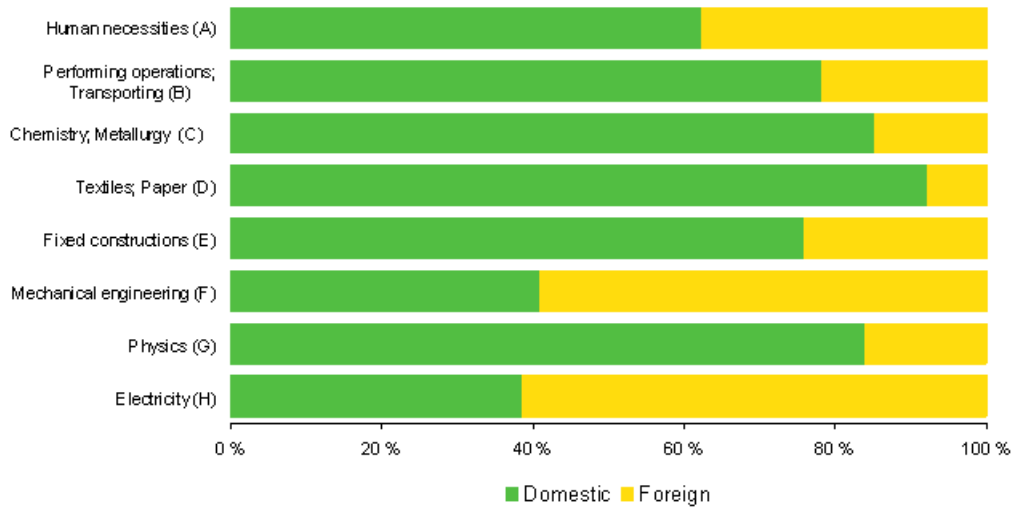
1. Patent applications filed in Finland by IPC section in 2006



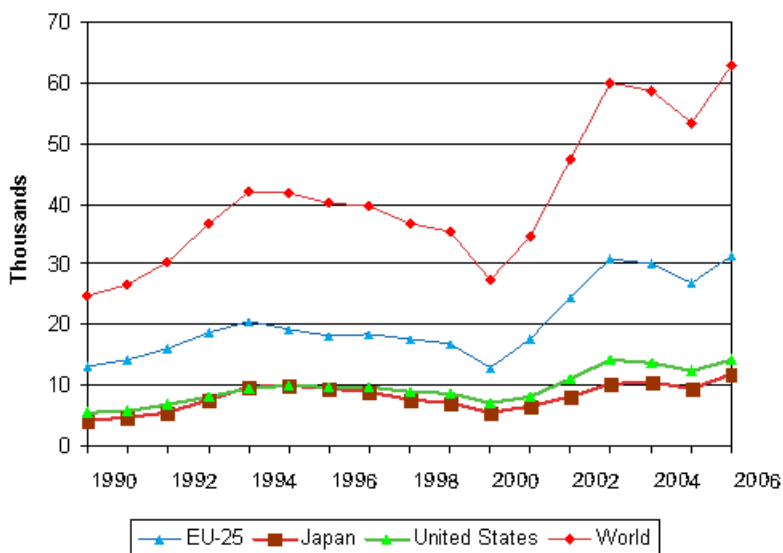
2. Patents granted and European patents validated in 2000–2006



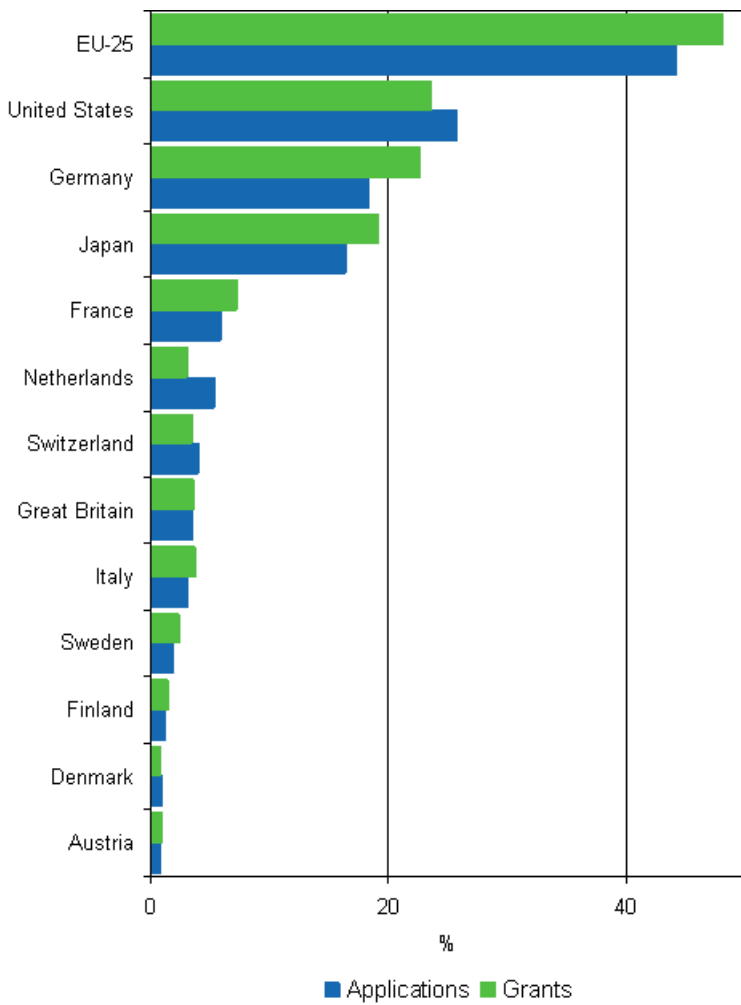
3. Patents granted in Finland in 2006



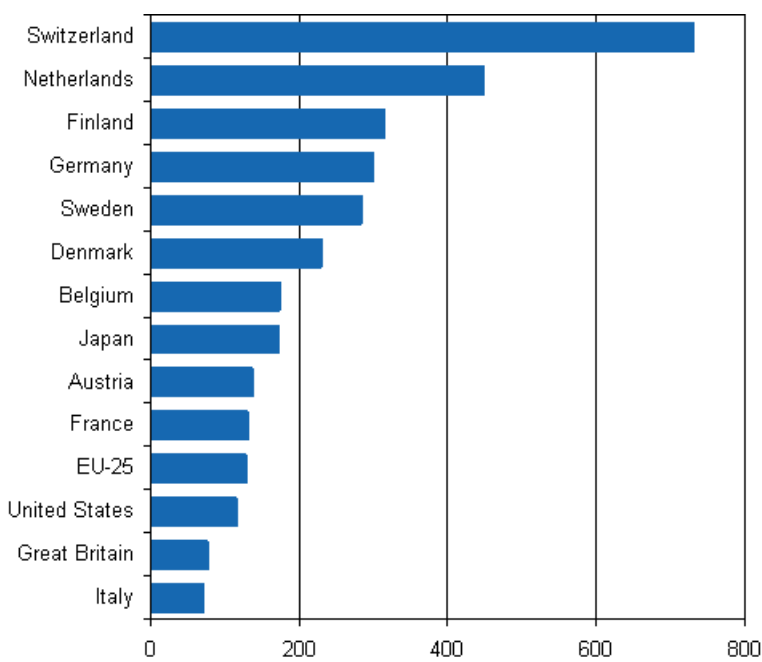
4. European patents granted in 1990-2006



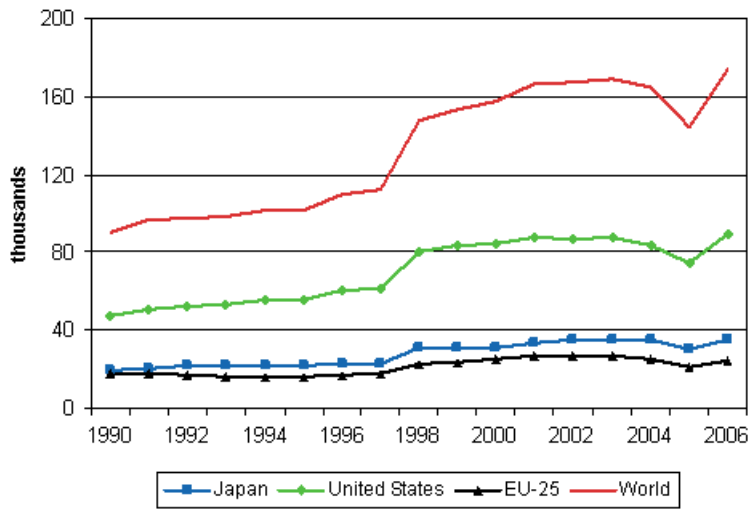
5. Selected countries' shares of European patenting in 2006



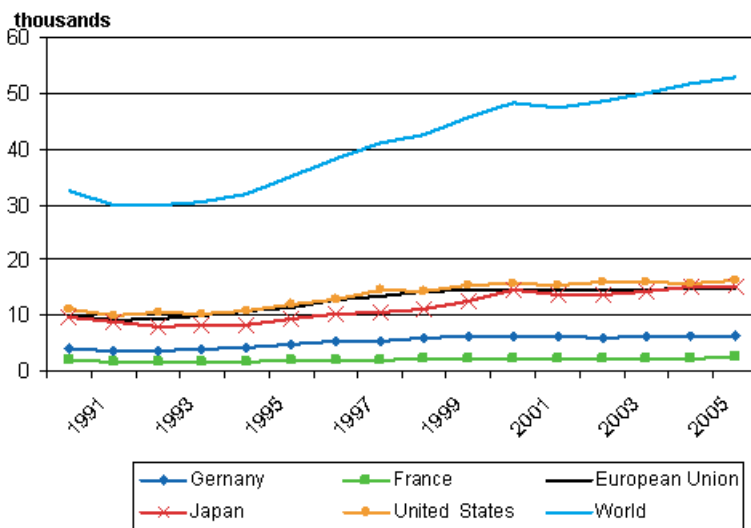
6. European patent applications per one million population in selected countries in 2006



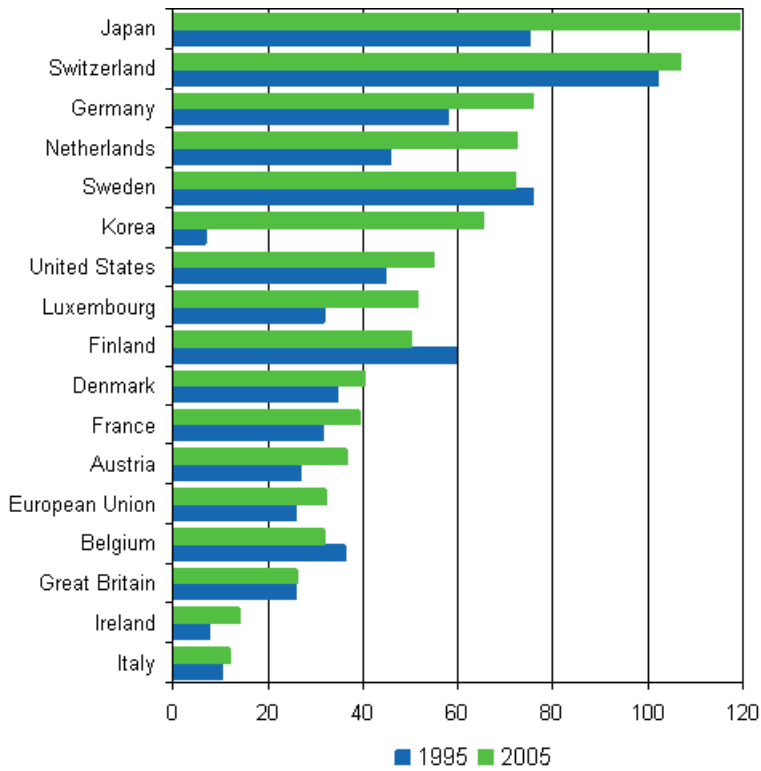
7. Patents granted in the United States in 1990-2006



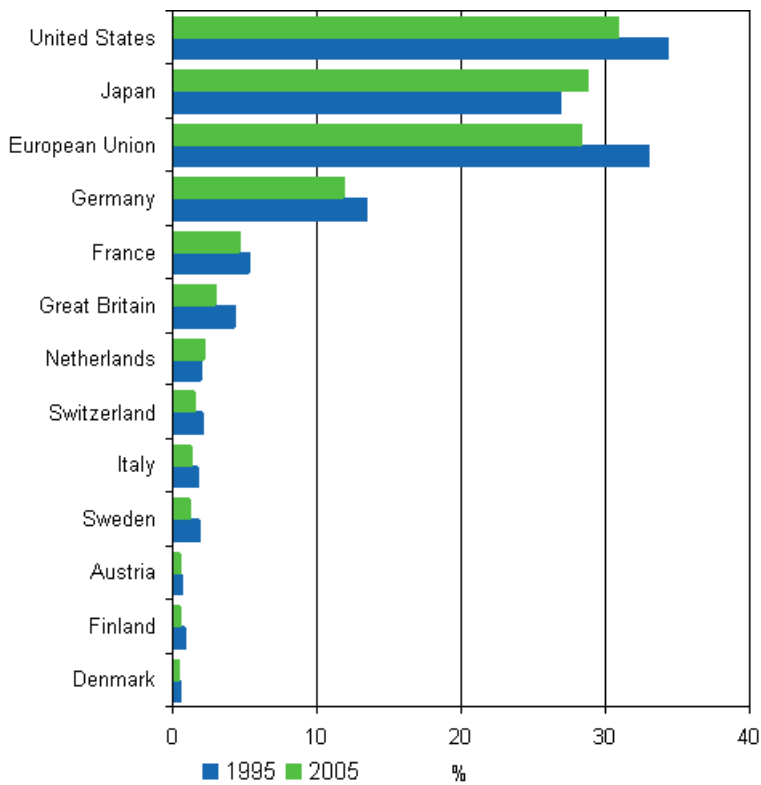
8. Triadic patent families in 1990-2005



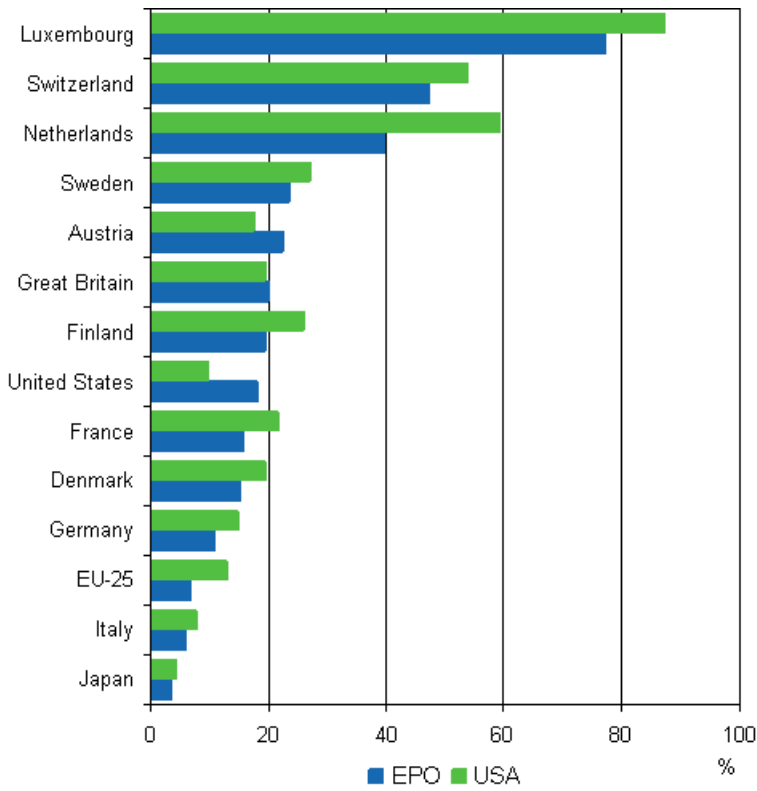
9. Triadic patent families per one million population in 1995 and 2005



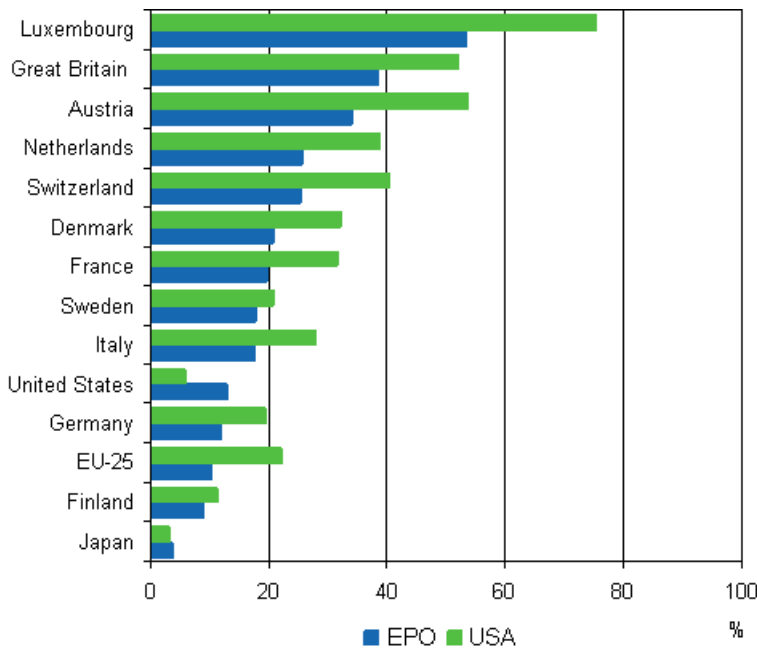
10. Selected countries' shares of triadic patent families in 1995 and 2005



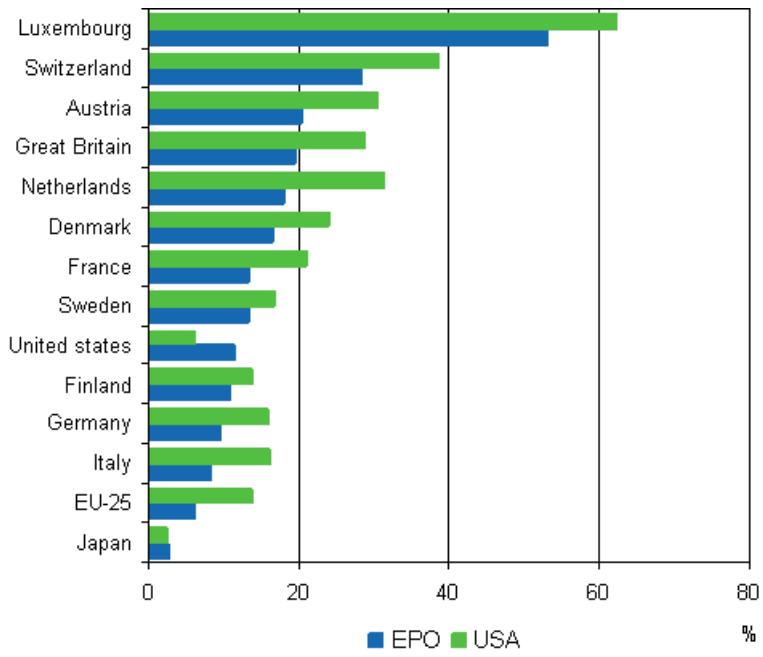
11. Domestic ownership of foreign inventions



12. Foreign ownership of domestic inventions



13. Joint inventions' share of domestic inventions



Suomen virallinen tilasto
Finlands officiella statistik
Official Statistics of Finland

2007

Inquiries

Markku Virtaharju (09) 1734 3290
Director in charge:
Kaija Hovi

Sähköpostiosoite

www.stat.fi