Statistics in focus

SCIENCE AND TECHNOLOGY

9/2004

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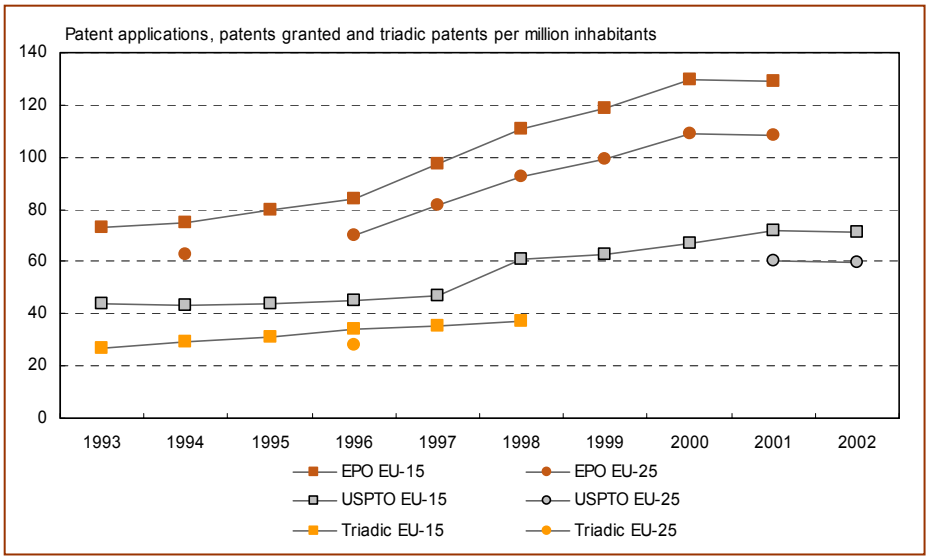
Contents

Manuscript completed on: 11.08.2004
ISSN 1609-5995
Catalogue number: KS-NS-04-009-EN-N

National Patent indicators

Significant upward trend of patents during the second part of the 1990's

Figure 1: Patent applications to the EPO, patents granted by the USPTO and triadic patent families, EU-15 and EU-25 — 1993-2002 (1)



(1) Eurostat estimations: EPO 2001, USPTO 2001 and 2002.

- Patent applications to the EPO from EU, Japan and the United States increased significantly since the second part of the nineties.
- In 2001, patent applications to the EPO from EU-25 Member States, Japan and the United States were respectively 49 203, 20 114 and 27 178.
- Whilst the USPTO granted 86 669 patents to US inventors in 2002, only 27 225 were awarded to inventors from the EU-25 and 34 925 to inventors from Japan. However, the number of patents granted by the USPTO is also on an upward trend.
- Within the EU-25 in 2002, the more important IPC sections were ***Performing operations; transporting — section B*** with 21.3% of total patents granted followed by ***Electricity — Section H*** and ***Physics — Section G*** with respectively 16.9% and 16.4%. In the United States and Japan, the more important sections in 2002 were ***Physics — Section G*** and ***Electricity — Section H***.
- In 2002, the USPTO granted 21 957 high tech patents to US inventors, 9 618 were awarded to inventors from Japan and 4 279 to inventors from EU-25.
- In 2002, 15.7% of total EU-25 patents granted by the USPTO were high tech patents. The share of high tech patents in Japan and the United States was respectively 27.5% and 25.3%.
- In 1998, patentees from the United States registered the highest number of triadic patent families (14 559), closely followed by EU-15 (13 855) and Japan (10 960).

Increase of patent applications to the EPO (application date) in the second part of the 1990's

As shown in Figure 2, patent application to the EPO from EU, Japan and the United States increased significantly since the second part of the nineties. In 2001, patent applications to the EPO from EU-25 Member States, Japan and the USA were respectively 49 203, 20 114 and 27 178 — Table 1.

At the national level within the EU-25, Germany leads in absolute terms with 21 598 patent applications in 2001. As a proportion of the population, Germany still leads in 2001 with 263 patent applications per million inhabitants but is closely followed by Finland and Sweden with 252 and 243, respectively.

In 2001, six other Member States — Belgium, Denmark, France, Luxembourg, the Netherlands and Austria — counted more than 100 patent applications to the EPO per million inhabitants.

Figure 2: Trend of patent applications to the EPO, EU-15, Japan and the United States — 1989-2001

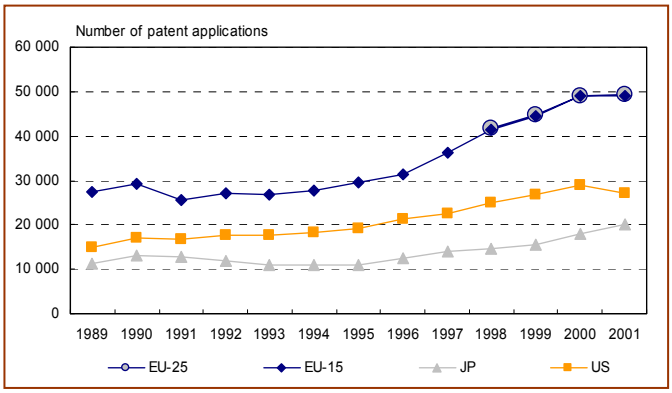


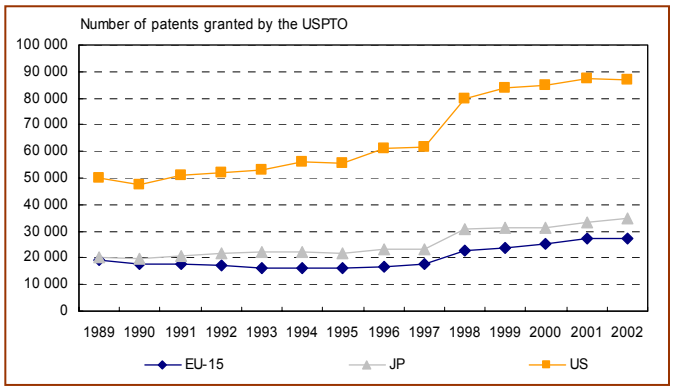
Table 1: Patent applications to the EPO by country — 1998-2001

Country	Total number				Per million inhabitants			
	1998	1999	2000	2001	1998	1999	2000	2001
EU-25	**41 576**	**44 795**	**49 175**	**49 203**	**92**	**99**	**109**	**109 s**
EU-15	**41 365**	**44 584**	**48 890**	**48 929**	**111**	**119**	**130**	**129 s**
EUR-12	**34 076**	**36 666**	**40 258**	**40 347**	**113**	**122**	**133**	**133 s**
BE	1 197	1 190	1 282	1 183	117	116	125	115
CZ	55	56	68	59	5	5	7	6
DK	646	790	826	832	122	149	155	155
DE	17 908	19 584	21 498	21 598	218	239	262	263
EE	6	5	7	6	4	4	5 p	4 p
EL	57	61	46	50	5	6	4	5
ES	609	674	735	723	15	17 e	19 e	18
FR	6 377	6 722	7 148	7 023	109	115 e	122	119 e
IE	137	175	238	178	37	47	63 ep	47 ep
IT	3 262	3 374	3 778	3 830	57	59	65	66 e
CY	2	4	4	5	3	6	5	7
LV	5	4	1	8	2	2	1	3
LT	1	1	3	3	0	0	1	1 bp
LU	53	70	63	76	126	164 e	144 e	173 be
HU	74	69	108	99	7	7	11	10
MT	2	3	7	4	5	8	18	9 e
NL	2 422	2 622	2 992	3 187	155	166	189	199
AT	994	975	1 071	1 156	123	121	132	142
PL	35	22	35	36	1	1	1	1
PT	21	38	31	38	2	4	3	4 e
SI	18	35	37	46	9	18	19	23
SK	12	11	16	10	2	2	3	2
FI	1 038	1 180	1 376	1 306	202	229	266	252
SE	2 032	2 055	2 220	2 157	230	232	251	243
UK	4 610	5 073	5 586	5 593	78	85	94	93 e
EEA-18	**41 721**	**44 964**	**49 304**	**49 347**	**110**	**118**	**129**	**129 s**
IS	19	22	33	35	69	82	119	122
LI	27	33	22	24	851	1 023	665	732 e
NO	311	325	359	360	70	73	80	80
CH	2 336	2 362	2 555	2 569	329	332	357	357
BG	9	8	9	5	1	1	1	1
RO	8	6	7	4	0	0	0	0
TR	15	32	24	32	0 i	0 i	0 i	0 i
CA	1 197	1 342	1 529	1 451	39	44 i	50 i	47 i
JP	14 589	15 514	18 066	20 114	116	123	142 i	158 i
RU	172	222	206	162	1 i	2 i	1 i	1 i
US	24 878	26 896	28 860	27178	92	99	102 i	95 i

i: Reference data on population come from OECD/MSTI.

Upward trend of patents granted by the USPTO from 1996 to 2002

Figure 3: Trend of patents granted by the USPTO, EU-15, Japan and the United States — 1989-2002



As shown in Figure 3, the number of patents granted by the USPTO is also on an upward trend. However, there are great differences between the number of domestic patents and foreign ones. Whilst the USPTO granted 86 669 patents to US inventors in 2002, only 27 225 were awarded to inventors from the EU-25 and 34 925 to inventors from Japan — Table 2. When taking population into account, differences still remain large. In 2002, the United States retained a ratio of 301 patents granted per million inhabitants. The same ratio was 274 and 60 for Japan and EU-25 respectively.

Within the EU-25 and at the national level, Germany again leads in absolute terms with 11 312 patents granted by USPTO in 2002. Nevertheless, when taking the population into account, Sweden and Finland are ahead with 187 and 159 patents granted per million inhabitants respectively.

Table 2: Patents granted by the USPTO by country — 1998-2002

Country	Total number					Per million inhabitants				
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
EU-25	**:**	**:**	**:**	**27 305**	**27 225**	**:**	**:**	**:**	**60 s**	**60 s**
EU-15	**22 851**	**23 643**	**25 096**	**27 163**	**27 083**	**61**	**63**	**67**	**72 s**	**71 s**
EUR-12	**17 730**	**18 148**	**19 389**	**20 950**	**21 112**	**59**	**60**	**64**	**69 s**	**69 s**
BE	699	656	707	738	725	69	64	69	72	70
CZ	24	30	36	24	40	2	3	4	2	4 e
DK	397	487	436	488	450	75	92	82	91	84
DE	9 111	9 370	10 259	11 273	11 312	111	114	125	137	137
EE	:	1	4	2	4	:	1	3 p	1 p	3 s
EL	17	21	18	27	21	2	2	2	2	2 i
ES	257	239	275	276	323	7	6 e	7 e	7	8
FR	3 691	3 827	3 839	4 066	4 039	63	65	65	69 e	68 e
IE	75	97	129	141	126	20	26 e	34 ep	37 ep	32 p
IT	1 601	1 505	1 703	1 728	1 760	28	26	30	30 e	30 i
CY	1	:	1	1	2	1	:	1	2	2
LV	2	4	3	1	1	1	2	1	1	0
LT	2	2	:	3	2	1	0	:	1 bp	1 p
LU	19	19	39	34	43	45	44 e	90 e	77 be	96 e
HU	51	42	39	59	50	5	4	4	6	5
MT	1	:	2	2	1	3	:	5	5 e	3 e
NL	1 253	1 265	1 269	1 328	1 395	80	80	80	83	87
AT	398	488	520	584	532	49	60	64	72	65
PL	22	27	18	23	17	1	1	0	1	0
PT	9	7	12	12	13	1	1	1	1 e	1
SI	19	11	18	23	17	10	5	9	11	8
SK	4	9	7	3	10	1	2	1	1	2 b
FI	599	653	618	743	824	116	126	120	143	159
SE	1 232	1 405	1 584	1 745	1 669	139	159	179	196	187
UK	3 492	3 602	3 688	3 980	3 851	59	61	62	66 e	65 i
EEA-18	**23 068**	**23 895**	**25 379**	**27 468**	**27 365**	**61**	**63**	**67**	**72 s**	**71 s**
IS	7	10	17	20	17	24	37	59	70	58
LI	16	15	19	19	17	517	474	594	582 e	494
NO	194	227	247	266	249	44	51	55	59	55
CH	1 278	1 286	1 343	1 428	1 367	180	181	187	198	188
BG	2	4	2	5	7	0	1	0	1	1
RO	4	4	5	10	4	0	0	0	0	0 i
TR	3	6	7	12	15	0 i	0 i	0 i	0 i	0 i
CA	2 976	3 218	3 401	3 593	3 449	98	106 i	111 i	116 i	110 i
JP	30 887	31 161	31 362	33 269	34 925	245	246	247 i	262 i	274 i
RU	219	208	204	255	221	2 i	1 i	1 i	2 i	2 i
US	80 003	83 633	84 783	87 316	86 669	297	308	301 i	307 i	301 i

i: Reference data on population come from OECD/MSTI.

Table 3 shows patent application granted by the USPTO by IPC section. Within the EU-25 in 2002, the more important IPC sections were ***Performing operations; transporting — section B*** with 21.3% of total patents granted followed by ***Electricity — Section H*** and ***Physics — Section G*** with respectively 16.9% and 16.4%.

In the United States and Japan, the more important sections in 2002 were ***Physics — Section G*** and ***Electricity — Section H*** with respectively 31.1% and 28.6% of total patents granted for Japan and with 24.1 and 19.6% for the United States.

Within the European Union, the distribution across countries varied at the Member State level. For example, Belgium, Estonia and Slovenia specialised in ***Chemistry; metallurgy — Section C***; Czech Republic, Ireland, Latvia, Slovenia and the United Kingdom specialised in ***Electricity — Section H*** and the Netherlands, Finland and Sweden specialised in ***Physics — Section G***.

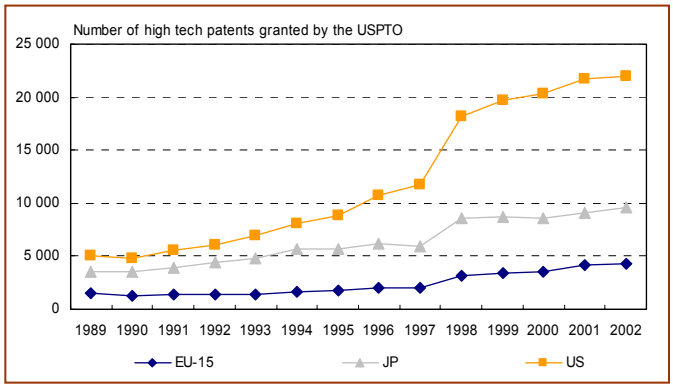
The sections where the EU-25 was the least specialised in 2002 were ***Textiles; paper — Section D*** and ***Fixed constructions — section E***.

Table 3: Patents granted by the USPTO by IPC sections and by country — 2002

Country	% of patents granted by IPC section (1)								Total number
	A	B	C	D	E	F	G	H	
EU-25	**15.06**	**21.29**	**14.55**	**1.88**	**2.67**	**10.49**	**16.42**	**16.90**	**27 225**
EU-15	**15.02**	**21.34**	**14.50**	**1.89**	**2.68**	**10.51**	**16.40**	**16.92**	**27 083**
EUR-12	**14.10**	**22.69**	**15.06**	**1.97**	**2.34**	**11.20**	**15.43**	**16.44**	**21 112**
BE	14.25	17.38	33.56	3.26	1.79	3.61	16.20	9.40	725
CZ	14.21	6.32	14.34	0.00	5.06	9.53	28.76	16.11	40
DK	28.05	16.11	22.44	1.01	2.46	6.35	11.23	12.13	450
DE	11.74	24.72	14.54	1.89	2.25	14.17	15.63	14.28	11 312
EE	0.00	0.00	59.13	0.00	0.00	0.00	40.87	0.00	4
EL	29.45	15.84	22.65	0.00	4.76	4.76	12.99	9.51	21
ES	23.49	29.36	14.24	2.06	2.89	10.36	8.02	9.28	323
FR	19.38	19.40	14.89	0.86	1.93	8.50	15.54	18.52	4 039
IE	18.93	16.12	5.49	0.00	3.98	4.44	27.14	23.89	126
IT	16.44	25.50	13.67	2.09	3.40	9.16	12.70	16.54	1 760
CY	66.67	33.33	0.00	0.00	0.00	0.00	0.00	0.00	2
LV	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	1
LT	57.14	0.00	0.00	0.00	0.00	0.00	0.00	42.86	2
LU	3.51	38.01	32.12	2.34	0.00	10.04	12.09	1.89	43
HU	26.88	16.02	26.32	0.00	0.00	5.67	8.67	15.42	50
MT	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
NL	15.15	17.98	15.37	0.63	2.05	4.82	21.16	22.07	1 395
AT	14.43	23.46	17.74	2.82	5.70	13.58	9.93	11.36	532
PL	30.59	8.96	29.57	0.00	0.00	0.00	22.40	8.48	17
PT	22.51	21.23	17.48	0.00	0.00	17.48	1.88	11.85	13
SI	10.87	17.83	29.71	0.00	0.00	0.00	29.71	11.88	17
SK	34.21	4.89	15.35	0.00	0.00	19.55	22.78	3.23	10
FI	9.06	14.93	8.00	9.12	1.82	5.57	12.73	38.19	824
SE	17.21	20.71	6.35	3.25	2.28	8.14	15.67	25.92	1 669
UK	17.58	14.81	14.09	0.97	4.74	8.22	22.63	16.21	3 851
EEA-18	**15.08**	**21.34**	**14.47**	**1.87**	**2.77**	**10.50**	**16.41**	**16.83**	**27 365**
IS	16.25	12.03	10.53	0.00	0.00	0.00	29.06	32.07	17
LI	19.01	36.21	18.59	0.00	6.04	8.03	6.04	6.04	17
NO	21.64	21.25	10.20	0.00	11.97	10.42	16.84	7.29	249
CH	19.69	22.05	17.20	2.97	1.78	8.40	16.76	10.62	1 367
BG	34.05	0.00	6.41	0.00	0.00	15.27	35.57	8.70	7
RO	13.05	26.11	0.00	0.00	0.00	0.00	8.62	52.22	4
TR	39.10	13.79	5.72	13.79	0.00	13.24	10.90	3.45	15
CA	19.26	20.27	10.88	0.73	6.25	8.56	18.32	14.94	3 449
JP	5.60	16.58	8.90	0.52	0.53	7.50	31.12	28.64	34 925
RU	15.10	12.10	22.98	0.00	1.24	9.60	19.96	18.34	221
US	18.30	16.51	10.09	0.65	3.00	7.05	24.14	19.55	86 669

(1) See ***Methodological Notes*** on page 7.

Figure 4: Trend of high tech patents granted by the USPTO EU-15, Japan and the United States — 1989-2002



As shown in Figure 4, the number of high tech patent applications granted by the USPTO is also on an upward trend. There are still great differences between the number of domestic patents and foreign ones. Whilst the USPTO granted 21 957 high tech patents to US inventors in 2002, only 9 618 were awarded to inventors from Japan and 4 279 to inventors from EU-25 — Table 4.

In 2002, 15.7% of total EU-25 patents granted by the USPTO were high tech patents. When taking the population into consideration, this represents 9.42 high tech patents granted per million inhabitants. The most important high tech group within the EU-25 in 2002 was ***CAB — Computer and automated business equipment*** and ***CTE — Communication Technology***.

Table 4: High tech patents granted by the USPTO by country — 2002

Country	Total number	Per million inhabitants	% of HT patents granted by high tech group (1)						HT patents as % of total patents
			AVI	CAB	CTE	LSR	MGE	SMC	
EU-25	**4 279**	**9 s**	**2.80**	**33.28**	**32.82**	**2.08**	**13.32**	**15.69**	**15.72**
EU-15	**4 266**	**11 s**	**2.81**	**33.32**	**32.90**	**2.09**	**13.20**	**15.68**	**15.75**
EUR-12	**3 001**	**10 s**	**3.20**	**32.91**	**30.50**	**2.39**	**12.00**	**18.99**	**14.21**
BE	91	9	2.20	23.83	22.30	0.00	30.65	21.01	12.52
CZ	2	0 e	0.00	29.41	11.76	0.00	58.82	0.00	4.30
DK	88	16	0.00	18.04	25.72	3.40	50.31	2.55	19.62
DE	1 283	16	3.25	35.18	23.68	3.85	11.81	22.22	11.34
EE	2	1	0.00	0.00	0.00	0.00	100.00	0.00	40.87
EL	3	0 i	0.00	12.36	37.45	0.00	49.81	0.00	12.70
ES	55	1	9.08	63.28	14.23	0.00	9.77	3.63	17.02
FR	717	12 e	5.46	33.82	32.90	1.48	12.40	13.93	17.75
IE	31	8 p	0.00	48.50	33.63	3.18	8.50	6.21	25.00
IT	252	4 i	1.59	38.90	12.63	2.08	7.25	37.54	14.30
CY	0	0	:	:	:	:	:	:	0.00
LV	1	0	0.00	100.00	0.00	0.00	0.00	0.00	100.00
LT	0	0	:	:	:	:	:	:	0.00
LU	0	0 e	0.00	0.00	0.00	0.00	100.00	0.00	0.40
HU	5	1	0.00	25.68	13.51	0.00	60.62	0.00	10.37
MT	0	0	:	:	:	:	:	:	0.00
NL	247	15	0.40	31.24	28.32	0.81	17.14	22.09	17.74
AT	53	7	1.88	16.69	41.97	4.70	27.34	7.42	10.00
PL	2	0	0.00	15.82	20.89	0.00	15.82	47.47	9.44
PT	1	0	0.00	0.00	100.00	0.00	0.00	0.00	9.98
SI	3	2	0.00	0.00	0.00	0.00	33.33	66.67	17.83
SK	0	0	:	:	:	:	:	:	0.00
FI	267	51	0.75	14.10	78.84	0.37	2.69	3.25	32.41
SE	339	38	0.88	22.02	60.06	0.88	7.62	8.53	20.32
UK	837	14 i	2.50	40.97	31.24	1.35	15.84	8.09	21.74
EEA-18	**4 301**	**11 s**	**2.81**	**33.46**	**32.91**	**2.07**	**13.14**	**15.61**	**15.72**
IS	6	22	0.00	29.66	53.97	0.00	16.21	0.00	37.12
LI	0	0	:	:	:	:	:	:	0.00
NO	29	6	3.51	54.56	29.82	0.00	3.93	8.18	11.44
CH	133	18	3.01	29.20	22.09	4.07	25.54	16.10	9.73
BG	1	0	0.00	100.00	0.00	0.00	0.00	0.00	7.63
RO	1 i	0	0.00	0.00	100.00	0.00	0.00	0.00	26.11
TR	2 i	0	0.00	56.25	26.04	0.00	17.19	0.00	13.24
CA	620 i	20	2.34	39.62	37.75	1.40	16.27	2.62	17.99
JP	9 618 i	75	0.23	42.69	22.04	2.01	2.48	30.55	27.54
RU	52 i	0	3.87	33.55	15.26	3.54	22.97	20.82	23.42
US	21 957 i	76	1.40	46.83	21.89	1.37	9.37	19.14	25.33

i: Reference data on population come from OECD/MSTI.
(1) See ***Methodological Notes*** on page 7.

Similar trend of triadic patent families between EU-15, the United States and Japan

Figure 5: Trend of triadic patent families EU-15, Japan and the United States — 1989-98

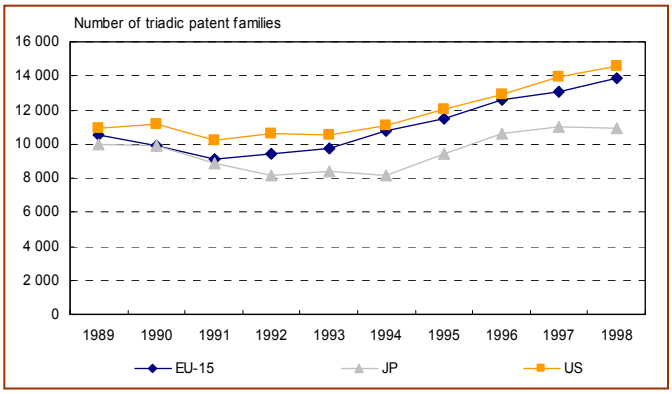


Figure 5 shows the evolution of the number of triadic patent families — see page 7. In 1998, patentees from the United States registered the highest number of triadic patent families (14 559), closely followed by EU-15 (13 855) and Japan (10 960). EU-15, the United States and Japan recorded upwards in triadic patent families between 1994 and 1998.

In 1998, within the EU-15 and at the national level, Germany led in absolute terms with 5 950 triadic patent families in 1998, followed by France (2 239) and United Kingdom (1 769) — see Table 5.

Nevertheless, when taking the population into account, Sweden and Finland were ahead with respectively 100 and 77 triadic patent families per million inhabitants.

Table 5: Triadic patent families by country — 1994-98

Country	Total number					Per million inhabitants				
	1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
EU-25	**:**	**:**	**12 659**	**:**	**:**	**:**	**:**	**28**	**:**	**:**
EU-15	**10 740**	**11 448**	**12 605**	**13 083**	**13 855**	**29**	**31**	**34**	**35**	**37**
EUR-12	**8 480**	**9 054**	**10 045**	**10 441**	**10 978**	**28**	**30**	**34**	**35**	**36**
BE	346	367	348	380	390	34	36	34	37	38
CZ	5	3	10	10	14	0	0	1	1	1
DK	173	186	212	221	222	33	36	40	42	42
DE	4 341	4 798	5 454	5 471	5 950	53	59	67	67	73
EE	:	:	3	2	2	:	:	2	2	2
EL	4	1	12	9	9	0	0	1	1	1
ES	84	87	85	107	108	2	2	2	3	3
FR	1 865	1 900	2 093	2 233	2 239	32	33	36	38	38
IE	28	31	28	32	44	8	9	8	9	12
IT	619	605	692	727	700	11	11	12	13	12
CY	1	0	0	:	:	1	0	1	:	:
LV	:	2	1	2	:	:	1	0	1	:
LT	:	:	1	:	:	:	:	0	:	:
LU	7	13	15	15	19	17	32	36	36	44
HU	19	24	24	28	20	2	2	2	3	2
MT	:	:	1	:	:	:	:	3	:	:
NL	642	724	770	826	852	42	47	50	53	54
AT	209	217	209	245	264	26	27	26	30	33
PL	4	5	9	9	7	0	0	0	0	0
PT	2	2	3	6	7	0	0	0	1	1
SI	3	7	5	3	8	2	3	3	2	4
SK	1	2	1	3	3	0	0	0	1	1
FI	335	308	335	392	395	66	61	66	76	77
SE	628	699	786	864	886	72	79	89	98	100
UK	1 458	1 509	1 562	1 556	1 769	25	26	27	26	30
EEA-18	**10 831**	**11 547**	**12 700**	**13 185**	**13 970**	**29**	**31**	**34**	**35**	**37**
IS	3	6	7	4	5	9	22	25	13	17
LI	10	7	17	11	10	322	216	556	350	316
NO	79	87	71	87	100	18	20	16	20	23
CH	706	743	806	804	806	101	106	114	114	114
BG	1	3	1	2	1	0	0	0	0	0
RO	1	2	2	1	0	0	0	0	0	0
TR	2	2	2	3	5	0 i	0 i	0 i	0 i	0 i
CA	352	381	419	481	544	12	13	14	16	18
JP	8 175	9 461	10 602	11 037	10 960	65	75	84	89	87
RU	52	62	57	65	73	0 i	0 i	0 i	0 i	1 i
US	11 088	12 064	12 885	13 916	14 559	43	46	49	52	54

i: Reference data on population come from OECD/MSTI.

➢ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

This Statistics in Focus provides an insight into the national patenting activities at the European Patent Office — EPO, the United States Patent and Trademark Office — USPTO — and the triadic patent families. The analysis covers EU-25, EFTA, Candidate Countries, Canada, Japan, Russia and the United States.

Please note that the data presented in this SIF are extracted from the OECD's patent database. Data on data applications to the EPO published in previous SIFs have been provided to Eurostat directly by the EPO. Data on patent applications in this SIF includes only the EURO-PCT patents that enter the regional phase (EPO). Data on patents applications published in the previous SIFs includes all EURO-designated PCT patents (applications filed directly under the European Patent Convention and applications filed under the Patent Co-operation Treaty (PCT) that designate the EPO for protection (Euro-PCT). Therefore the reader should be aware that the data source and methodology used in this SIF is different.

Eurostat's patents database

A patent is a legal title of industrial property granting its owner the exclusive right to exploit an invention commercially for a limited area and time. The patent confers on its owner the right to stop others from, among other things, making, using or selling such an invention without authorisation. In return for the exclusive right to exploit it, the technical details of the invention are published.

The three criteria that qualify an invention as subject to be patented are its novelty, utility and inventiveness, which are ultimately the grounds for the fundamental hypothesis that a patent represents a codification of inventive activity. It is on the basis of this hypothesis that patent statistics are used to build up indicators of R&D output.

Eurostat's patent database contains two collections of statistical data:

- Patent applications to EPO by date of filing (data source: EPO) — PAT_EU;
- Patent indicators at the EPO, the USPTO and triadic patent families (data source: OECD) — PAT_EUT.

Each collection originates from a different source and the methodologies used for processing the data are not necessarily the same.

All the data presented in this SIF originate from the PAT_EUT collection, which is maintained in close co-operation with the OECD. Every year Eurostat extracts the basic patents data from the OECD's patent database.

EPO patent applications by application date

This collection provides users with data concerning patent applications to the European Patent Office — EPO. Data are given at the national level and cover the period from 1989 onwards.

EPO data refer to patent applications as opposed to patents granted, which is the case of USPTO data. Data are recorded by application date as opposed to the grant date used for USPTO data.

The regional distribution of patent applications is assigned according to the inventor's country of residence. If one application has more than one inventor, the application is divided equally among all of them and subsequently among their countries of residence, thus avoiding double counting. When a patent corresponds to multiple technological fields, it is assigned to the first code of the International Patent Classification — IPC — indicated on the patent.

USPTO patent grants

This collection provides users with data concerning patents granted by the US Patent and Trademark Office — USPTO. Data are given at the national level for both total patents granted by the USPTO and patents granted by the USPTO in high technology fields. The time series covers the period from 1989 onwards.

USPTO data refer to patents granted as opposed to applications, which is the case of EPO data. Data are recorded by grant date as opposed to the application date used for EPO data.

Triadic patent families data

This collection provides users with data concerning triadic patent families. Data are given at the national level and cover the period from 1989 onwards.

A patent family is defined as a set of patents taken in various countries for protecting a single invention. The patent families presented in this database refer to 'triadic' families: i.e. a patent is a member of the patent families if and only if it is filed at the European Patent Office — EPO, the Japanese Patent Office — JPO — and is granted by the US Patent & Trademark Office — USPTO.

Patents are counted according to the country(ies) of residence of the inventor(s), giving thus a measure of technological innovativeness of researchers and laboratories located in a country. The priority date, the date of the first international filing of a patent, is chosen for constructing patent family indicators, as this is the earliest available date and therefore the closest to the invention date. Although the application date may provide more recent series, it may be argued that counts by application date introduce a bias between residents and foreigners for a selected patent office with respect to the priority date. Residents usually first file a patent application at their domestic office, the extension of application to other countries takes one year following the traditional procedure, and up to two and a half years for the PCT procedure.

If one application has more than one inventor, the application is divided equally among all of them and subsequently among their countries of residence, thus avoiding double counting. When a patent corresponds to multiple technological fields, it is assigned to the first code of the International Patent Classification — IPC — indicated on the patent.

For further information on definitions and explanatory notes see metadata in Eurostat's reference database NewCronos; Theme 9; Domain: Patents, Collection PAT_EUT.

Statistical abbreviations and symbols

:	Not available
b	Break in series
e	National estimation
p	Provisional data
s	Eurostat estimation.

IPC Sections

Section A	Human necessities
Section B	Performing operations; transporting
Section C	Chemistry; metallurgy
Section D	Textiles; paper
Section E	Fixed constructions
Section F	Mechanical engineering; lighting; heating; weapons; blasting
Section G	Physics
Section H	Electricity.

High technology groups

AVI	Aviation
CAB	Computer and automated business equipment
CTE	Communication technology
LSR	Lasers
MGE	Micro-organism and genetic engineering
SMC	Semi-conductors.

Further information:

- **Reference publications**

  Title Statistics on Science and Technology in Europe, 2003 edition

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- **Databases**

  NewCronos, Theme 9, Domain: patents

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ORIGINAL: English

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