

Chapter 4

PATENT ACTIVITY AT THE IP5 OFFICES

This chapter presents trends in patent application filings and grants at the IP5 Offices only. While in Chapter 3 the latest data were for 2011, most of the information that appears here includes data available on a more up-to-date basis and covers also 2012. Regarding Europe, statistics in this chapter are for the EPO only. Whereas the EPO is indicated from the viewpoint of an office, the EPC states are still indicated as a bloc of origin.

The activities at the IP5 Offices are demonstrated by counts of the patent applications that were filed. The statistics give insight into the work that is requested and carried out at the IP5 Offices. For patent applications, the representations are analogous to those appearing in Chapter 3 (Figs. 3.5, 3.6 and 3.12) which show the numbers of requests for patents as they entered a grant procedure²⁴. Direct applications to the offices are counted at the date of filing. PCT applications are counted at the moment they enter the national or regional phase. Direct national and direct regional filings are counted once only. PCT national/regional phase filings are replicated over the numbers of procedures that are started.

The demand at the EPO is given in terms of applications rather than in terms of designations. Also, it should be noted that part of the demand for patents in the EPC states is processed through the national offices and is not considered in this chapter.

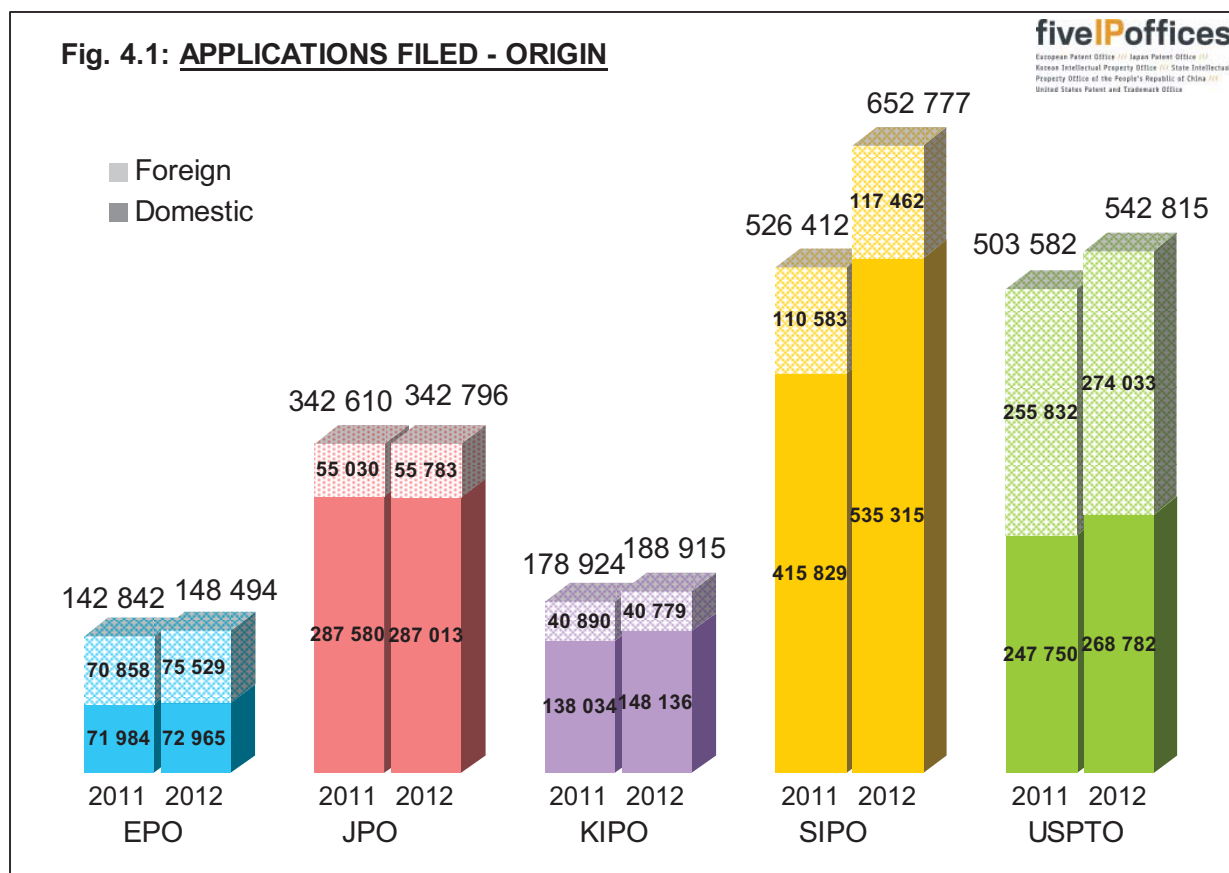
For granted patents, the statistics combine information by office and bloc of origin, displaying comparisons by year of grant. The representations here are similar to those for Fig. 3.10, where granted patents are counted once only, except that, for EPC states, only the EPO is considered as the granting authority. Hereinafter "patents granted" will correspond to the number of grant actions (issuances or publications) by the IP5 Offices.

For information about specific terminology and associated definitions used in Chapter 4, please refer to Annex 2.

²⁴ See Chapter 3, the section Guide to figures in Chapter 3

PATENT APPLICATIONS FILED

Fig. 4.1 shows the number of patent applications that were filed at each of the IP5 Offices during the two most recent years, broken down by domestic and foreign origin (based on the residence of first-named applicant or inventor). The EPO is indicated from the viewpoint of an office, with the EPO domestic applications corresponding to those filed by residents of EPC states.



In 2012, a total of about 1 875 800 patent applications were filed at the IP5 Offices, an increase of 11 percent from 2010 (1 694 400).

There were increases in patent applications at all the IP5 Offices. While patent applications increased by 24 percent at the SIPO, the growth was more limited at the USPTO (8 percent), at the KIPO (5 percent) and at the EPO (4 percent). Applications at the JPO increased by less than 1 percent.

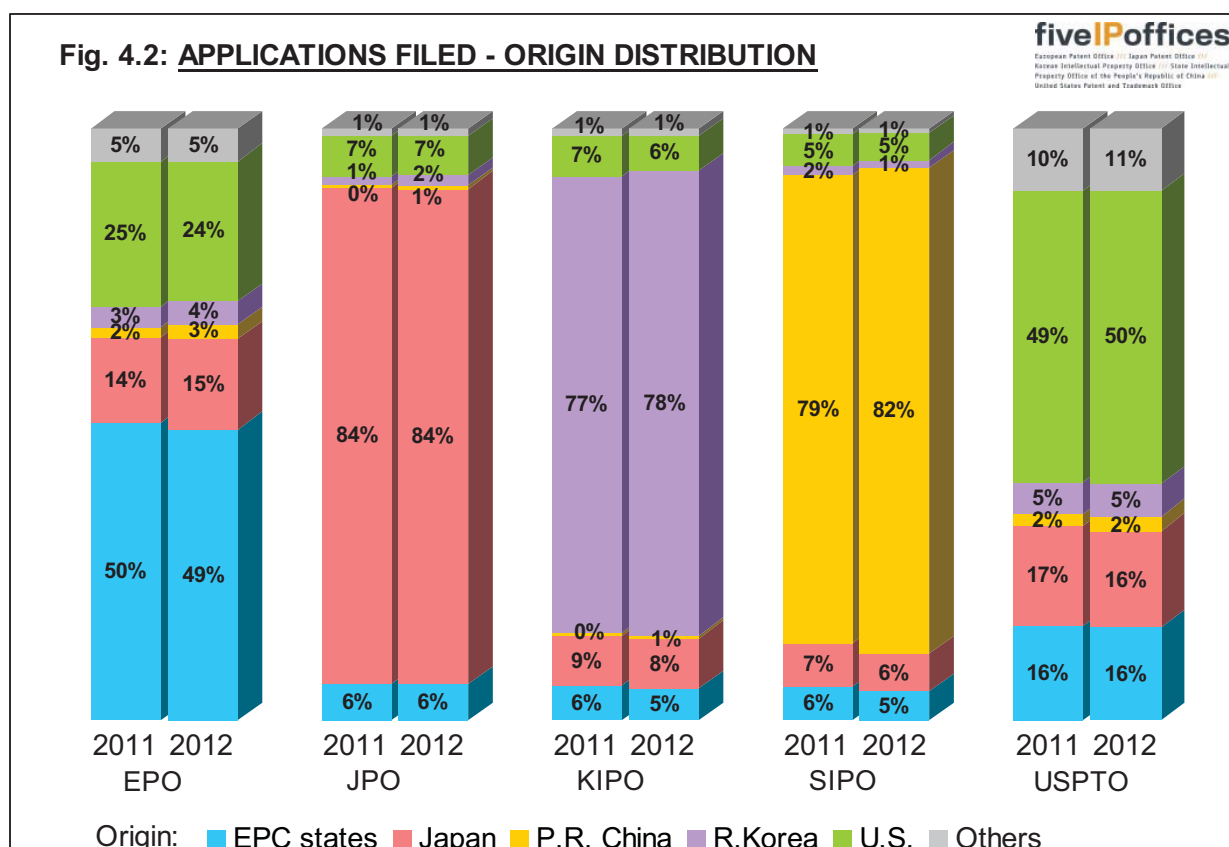
At the EPO, the USPTO and the SIPO, both domestic and foreign applications increased. At the JPO, both domestic and foreign applications changed marginally. At the KPO, domestic applications increased and foreign applications decreased marginally. The SIPO had a particularly large increase in domestic filings of 29 percent.

Table 4.1 and Fig. 4.2 show the number and the respective shares of patent application filings by origin (residence of first-named applicants or inventors) relative to total filings at each office for 2011 and 2012²⁵.

Table 4.1: 2012 APPLICATIONS FILED - ORIGIN

Office	EPO	JPO	KIPO	SIPO	USPTO
EPC states	72 965	20 899	10 194	31 780	85 195
Japan	22 700	287 013	16 004	42 278	88 686
P.R. China	3 731	2 022	982	535 315	13 273
R. Korea	5 711	5 708	148 136	8 985	29 481
U.S.	35 222	22 922	11 346	29 510	268 782
Others	8 165	4 232	2 253	4 909	57 398
Total	148 494	342 796	188 915	652 777	542 815

Comparison of the numbers of applications across the IP5 Offices should only be made with caution. For example, the numbers of claims given in applications are significantly different among the IP5 Offices. On average, in 2012, an application filed at the EPO contained 13.9 claims (13.9 in 2011), one filed at the JPO contained 9.6 claims (9.7 in 2011), one filed at the KIPO contained 10.5 claims (10.6 in 2011), one filed at the SIPO contained 8.0 claims (8.4 in 2011), while one filed at the USPTO had 18.2 claims (18.3 in 2011). These numbers of claims remained stable in all the IP5 Offices.



The shares of patent application filings by bloc of origin are generally consistent for 2011 and 2012 for each office.

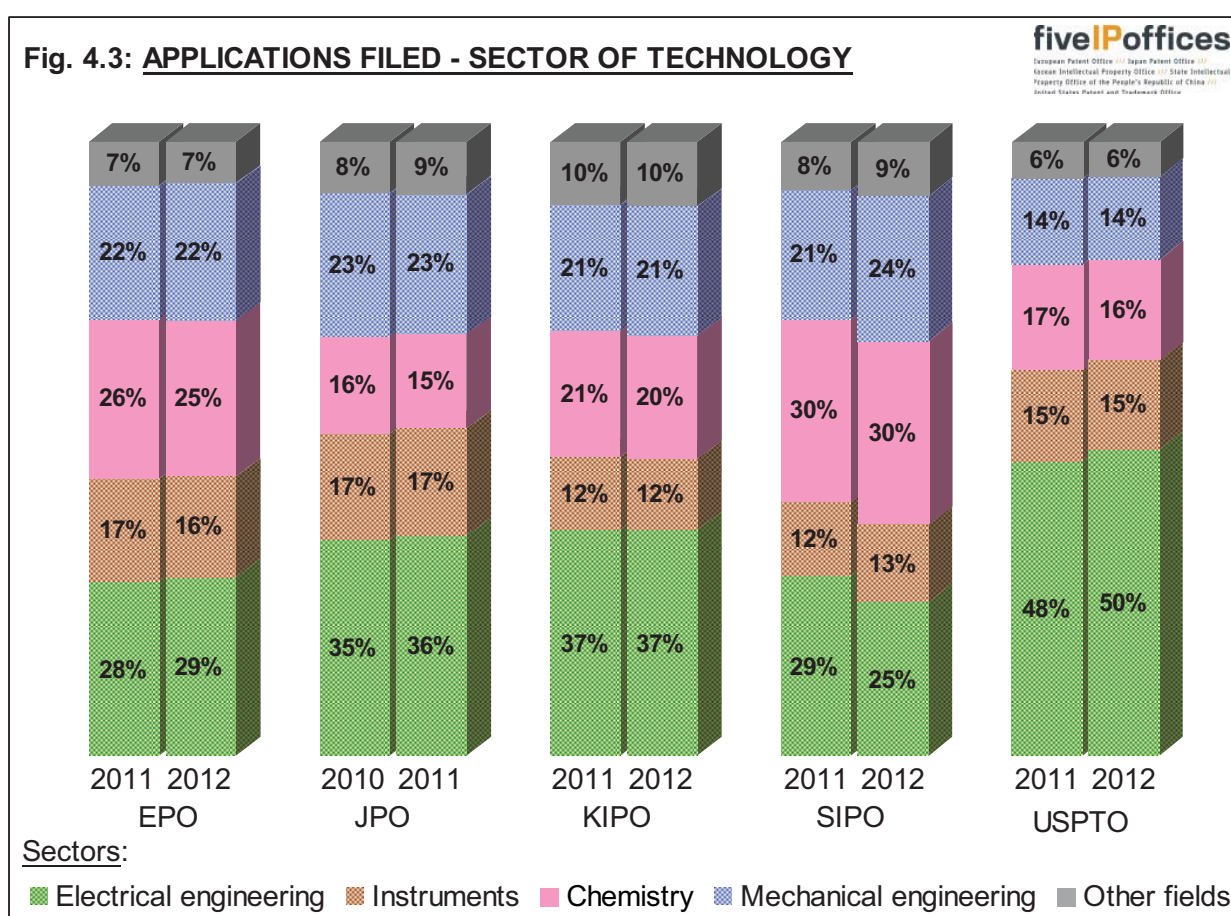
²⁵ The 2011 numbers can be found in the statistical annex of this report.

FIELDS OF TECHNOLOGY

Patents are classified by the IP5 Offices according to the IPC. This provides for a hierarchical system of language independent symbols for the classification of patents and utility models according to the different areas of technology to which they pertain. The WIPO established a concordance table to link the IPC symbols with thirty-five fields of technology grouped into five sectors²⁶. Fig. 4.3 shows the distribution of applications according to the five technology sectors.

The classification takes place at a different stage of the procedure in the offices. As a result, data are shown for the EPO, the KIPO, the SIPO, and the USPTO for the filing years 2011 and 2012, while for the JPO the breakdown is given for the filing years 2010 and 2011²⁷.

Fig. 4.3 indicates the share of applications by main sectors of technology at each office.

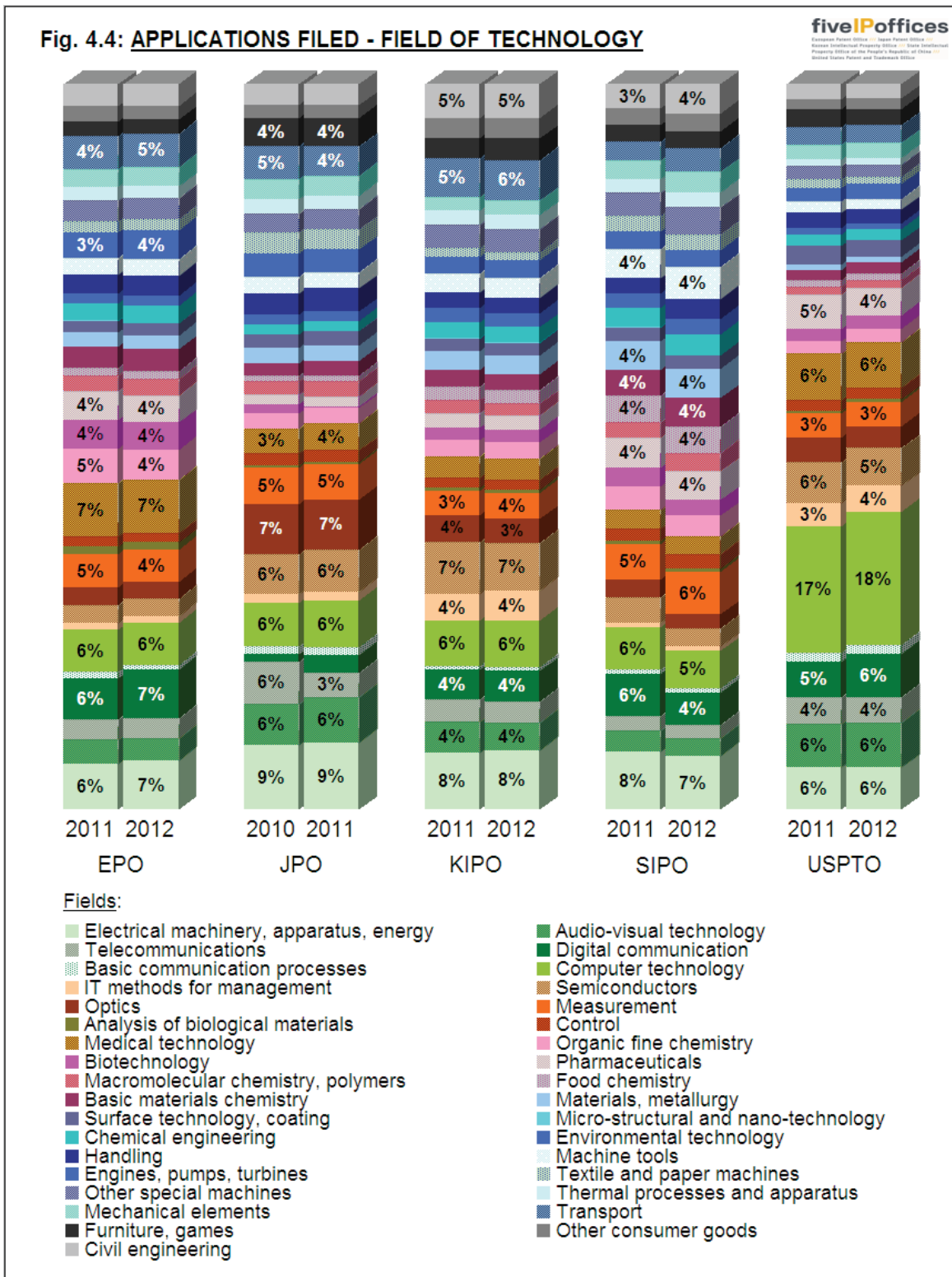


The Electrical engineering sector is more prominent at the USPTO than in the other IP5 Offices. A higher proportion of applications are filed in the Chemistry sector at the SIPO and at the EPO than in the other IP5 Offices. At the SIPO, the share of applications filed in the Mechanical engineering sector was higher in 2012, while the share of applications filed in the Electrical engineering sector declined. At each office, the distribution between sectors of the technology was stable between the two years reported.

²⁶ http://www.wipo.int/ipstats/en/statistics/technology_concordance.html

²⁷ JPO data for 2011 are the most recent available figures because the IPC assignment is completed just before the publication of the Unexamined Patent Application Gazette (18 months after the first filing).

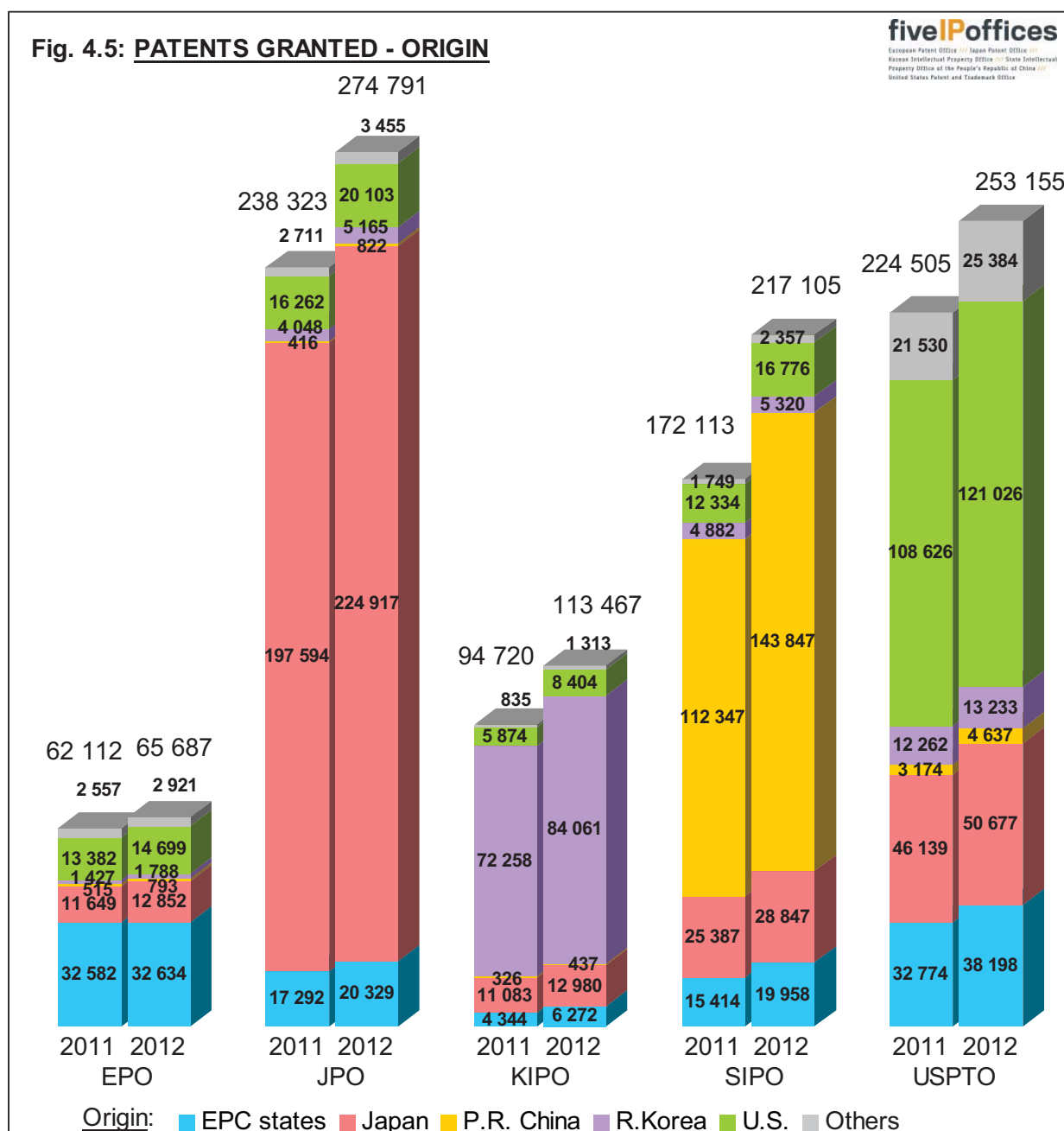
Fig. 4.4 indicates the share of applications by detailed fields of technology at each office.



Most of the leading fields are identical between the IP5 Offices, though with different shares. Computer technology is a leading field at all offices, but with a larger share of applications at the USPTO. Medical technology is a leading field at the EPO and the USPTO, while Electrical machinery, apparatus, energy and Optics are leading fields at JPO. Semiconductors technology and Civil engineering are leading fields at KIPO and at the SIPO. Transport technology is a leading field at the EPO and at the KIPO.

PATENTS GRANTED

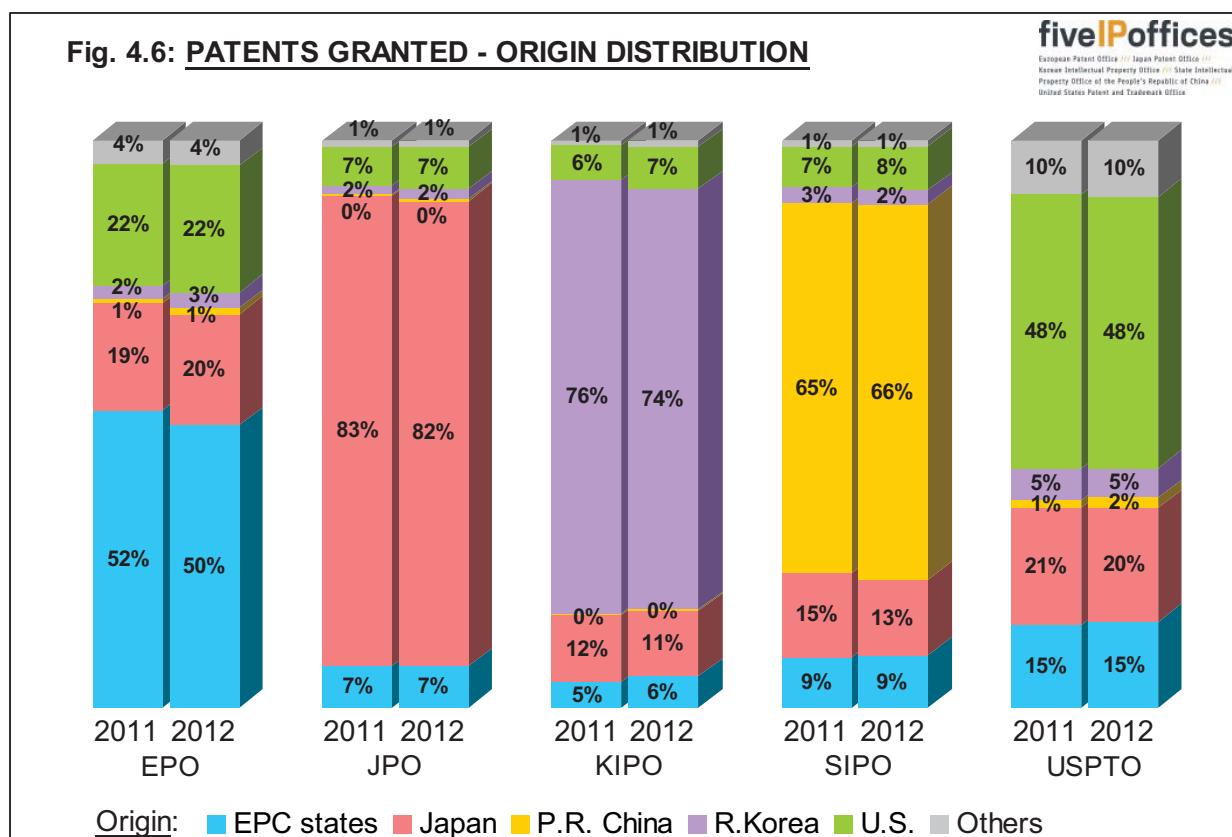
Fig. 4.5 shows the numbers of patents granted by the IP5 Offices, according to the bloc of origin (residence of first-named owner).



Together the IP5 Offices granted a total of 923 979 patents in 2012. This was 132 206 more than in 2011 and represents a growth of 17 percent.

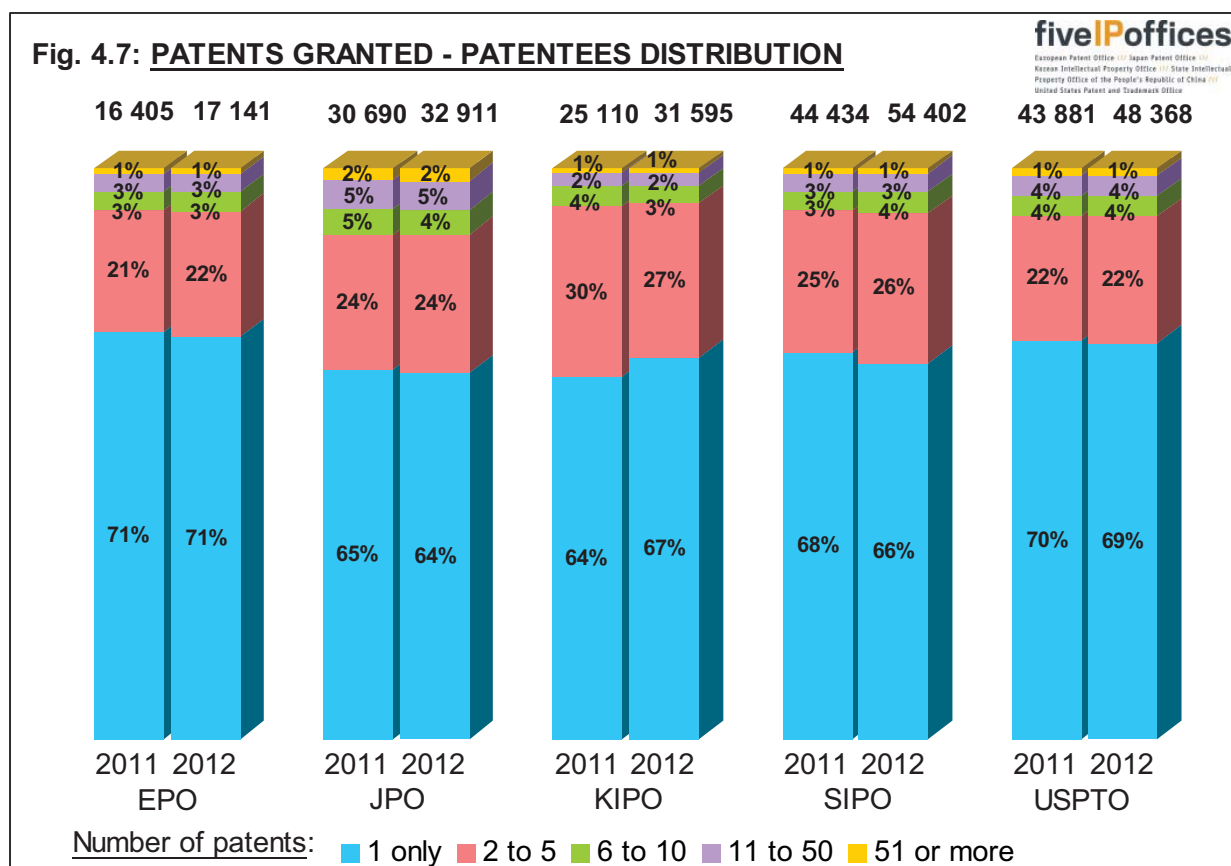
The number of patents granted by each of the IP5 Offices increased in 2012, at the SIPO and the KIPO by as much as 26 percent and 20 percent, respectively. The differences between the IP5 Offices regarding the absolute numbers of patents granted can only be partly explained by differences in the number of corresponding applications. These numbers are also affected by differing grant rates and durations to process applications by the IP5 Offices (see the section below "Statistics on Procedures").

Fig. 4.6 presents the percentage shares of total patents granted by the IP5 Offices according to the bloc of origin (residence of first-named owner).



Generally, the shares from the different blocs of origin are not that different from those observed for the filings in each office as presented in Fig. 4.2, although at the SIPO the share of granted patents originating from P.R. China is somewhat lower than the share of domestic filings in applications filed.

Fig. 4.7 shows the breakdown of patentees by numbers of patents granted in 2011 and in 2012.



This diagram shows that the distribution of grants to patentees is similar at each office and is highly skewed at all of them. The proportions are generally consistent between 2011 and 2012 for each office.

Most of patentees received only one grant in a year. In 2012, the proportion was between 64 percent for the KIPO and 71 percent for the EPO. The proportion of patentees that received less than 6 patents was between 88 percent for the JPO and 94 percent for the KIPO. The proportion of patentees receiving 11 or more patents is higher at the JPO (7 percent) than at the USPTO (5 percent), the EPO (4 percent), the SIPO (4 percent), and the KIPO (3 percent).

In 2012, the average patentee received 3.8 patents at the EPO, 8.3 at the JPO, 3.6 at the KIPO, 4.0 at the SIPO, and 5.2 at the USPTO. The greatest number of patents granted to a single applicant was 838 at the EPO, 8 567 at the JPO, 2 715 at the KIPO, 2 744 at the SIPO, and 6 457 at the USPTO.

MAINTENANCE

A patent is enforceable for a fixed term, and depends on actions taken by owner. In the IP5 Offices, the fixed term is usually a twenty year term from the date of filing the application. In order to maintain protection during this period, the applicant has to pay what are variously known as renewal, annual or maintenance fees in the countries for which the protection pertains. Maintenance systems differ from country to country. In most jurisdictions, and in particular in those of the IP5 Offices, protection expires if a renewal fee is not paid in due time.

At the EPO, renewal fees are payable from the third year after filing in order to maintain the application. After the patent has been granted, annual renewal fees are then paid to the national office of each designated EPC contracting state in which the patent has been registered. These national patents can be maintained for different periods in the contracting states. Therefore rather maintaining one patent after grant, patentees have to deal with the maintenance of several patents and are confronted with the problem of choice as to how long to maintain each one.

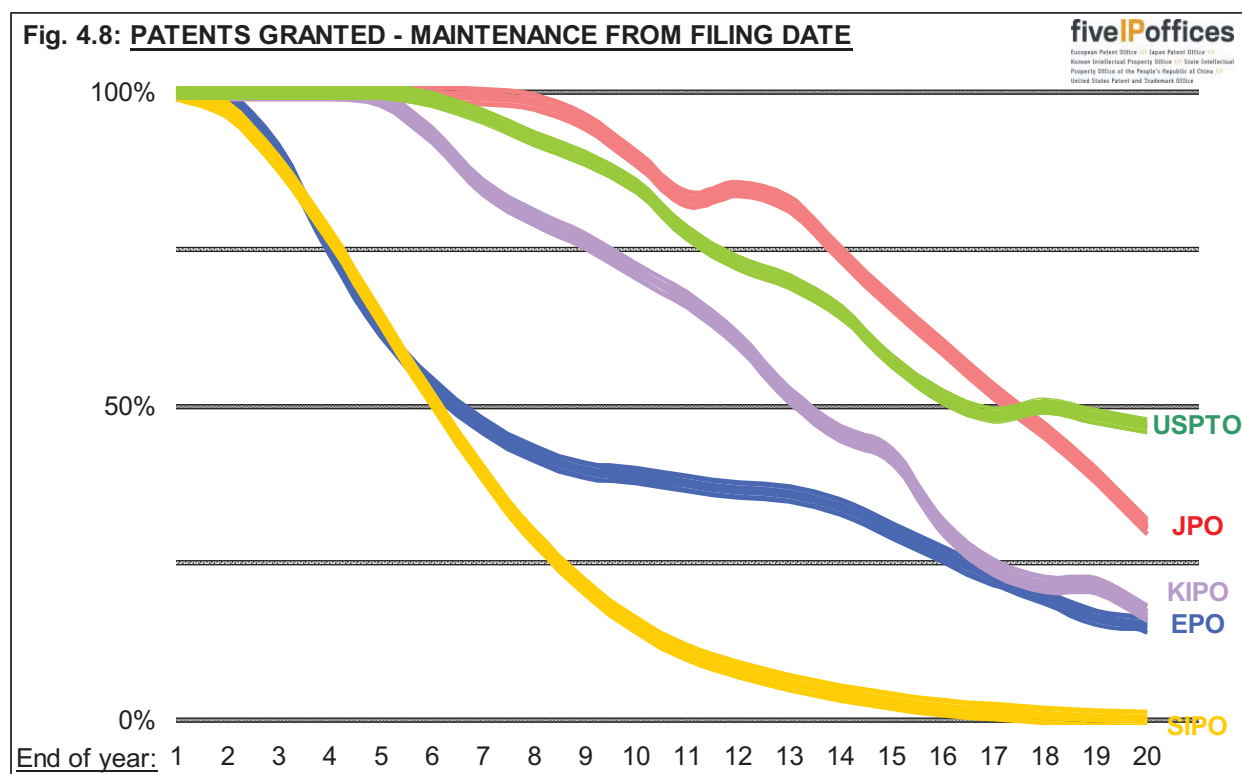
For a Japanese or Korean patent, the annual fees for the first three years after patent registration are paid as a lump-sum and for subsequent years there are annual fees. The applicant can pay either yearly or in advance.

At the SIPO, the annual fee of the year in which the patent right is granted shall be paid at the time of going through the formalities of registration, and the subsequent annual fees shall be paid before the expiration of the preceding year. The date on which the time limit for payment expires is the date of the current year corresponding to the filing date.

The USPTO collects maintenance fees at 3.5, 7.5, and 11.5 years after the date of grant and does not collect an annually payable maintenance fee.

Other factors influence the time during which patents are maintained once granted by the IP5 Offices. For example, systems allowing deferred examination or systems with payment of renewal fees only for the years following grant tend to increase the rate of maintenance. On the other hand, grants resulting in several patents, with renewal fees to be paid for each jurisdiction, may lead to dropping some of them more quickly and so decreasing the average maintenance rate.

Fig. 4.8 shows the proportions of patents granted by each office that are maintained for differing lengths of time. It compares the rate of granted patent registrations existing and in force each patent year starting with the year of application. Figures are based on the most recent relevant data that are available at each office.



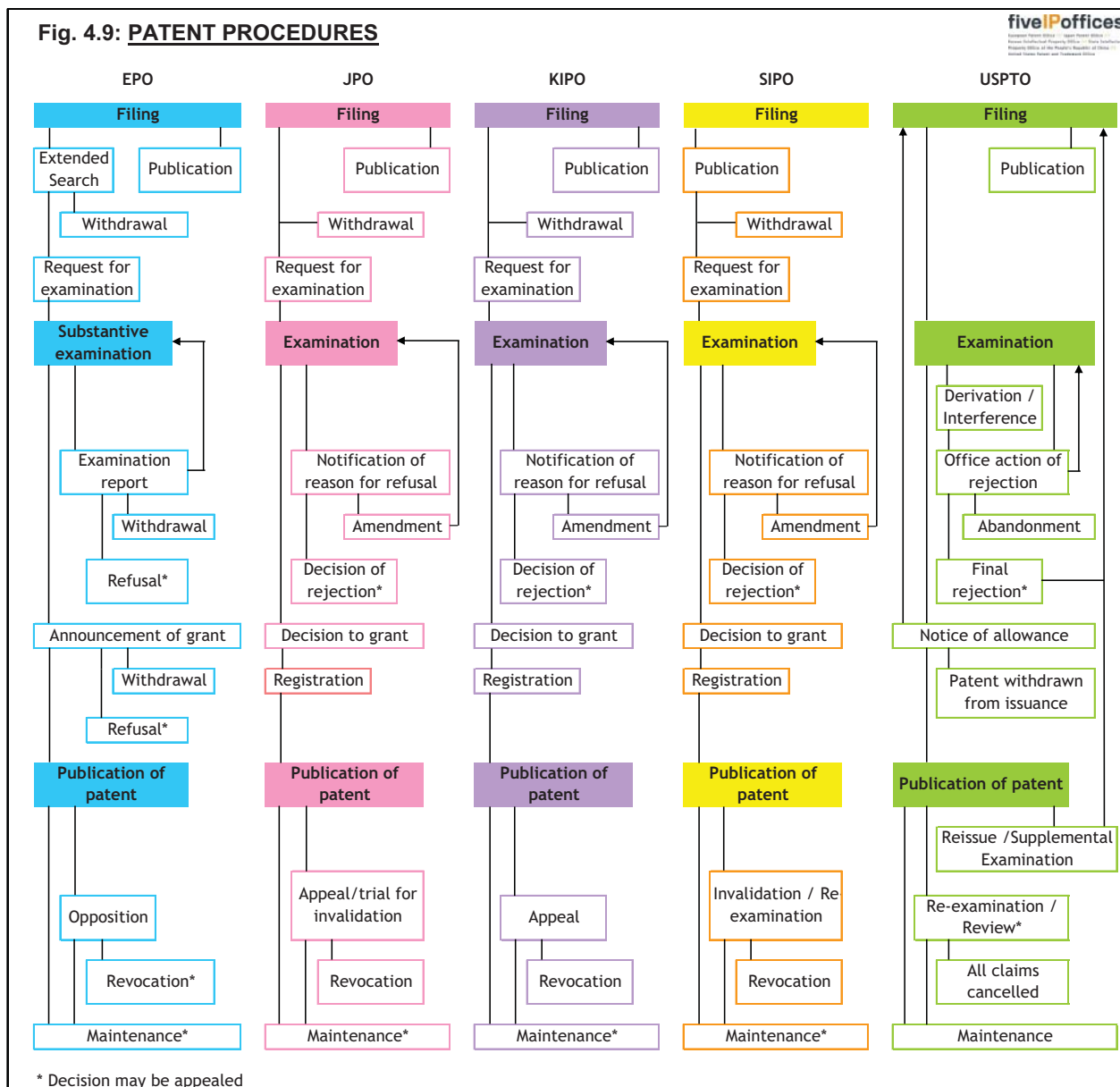
Over 50 percent of the patents granted by the JPO are maintained for at least 17 years from filing, and 16 years at the USPTO, compared to 13 years for the KIPO, 7 years for the EPO and 6 years for the SIPO. In addition to patentees behaviour, these differences can be partially explained by differences in the procedures, such as a multinational maintenance system (EPO), deferred examination (JPO, KIPO, SIPO) and a stepped maintenance payment schedule (USPTO).

The EPO proportion represents an average ratio of the maintenance of the European patents in the 38 EPC states. The figures are strongly impacted by the large proportion of recently granted patents for many states that joined the EPO within the past 12 years. Considering the shape of the curve for the EPO in Fig. 4.8, the first 12 years reflect mainly the building up of the maintenance pattern in the newer EPC states, while the last 8 years reflect the maintenance pattern in the longer standing EPC states.

The USPTO payment schedule is somewhat hidden because the data are shown on a time basis (by year after application) that is different from the time basis used for collection of the fees (by year after patent grant). The increase in the share of maintained patents between years 17 and 18 is the result of enacted legislation in 1995 that lengthened the patent term for a select group of patents.

PATENT PROCEDURES

Fig. 4.9 shows the major phases of the grant procedures at the IP5 Offices and concentrates on the similarities between offices to motivate the comparative statistics to be presented in Table 4 below. However the reader should bear in mind when interpreting such statistics that details of the procedures differ between offices, sometimes to quite a large degree (e.g. in time lags between stages of the procedures).



See Annex 2 for some further details about the procedures.

Fees are due at different stage of the procedure. Information on main comparable fees at the IP5 Offices is made available online on the IP5 home page²⁸.

²⁸ See at www.fiveipoffices.org/stats/statisticaldata.html under Fees. These data are given without prejudice and are not guaranteed to be up to date. Official fee schedule information and associated regulations from each IP5 Office take precedence.

STATISTICS ON PROCEDURES

Table 4.2 shows various statistics as average rates and numbers where applicable for 2011 and 2012. In order to concentrate on common measures for the offices, several parameters that are specific to EPO only are no longer shown. Definitions of the various terms are given in Annex 2.

RATES

The examination rate in the USPTO is 100 percent, since filing implies a request for examination, whereas in the EPO, the JPO, the KIPO, and the SIPO a specific request for examination has to be made. At the EPO the large proportion of PCT applications in the granting procedure gives a high examination rate, as almost all of them proceed to examination. The examination rate is somewhat lower at the JPO and the KIPO because the deferred examination system gives more time to the applicants to evaluate whether to proceed further with the application or not. The SIPO does not report this information.

The grant rates at the EPO, the JPO, the KIPO, and the USPTO increased from 2011 to 2012. The grant rate from the SIPO is not currently available.

PENDENCIES

In the successive stages of the procedure, there are pending applications awaiting action in the next step of the procedure. The number of pending applications gives an indication of the workload (per stage of procedure) from the patent grant procedure in each of the IP5 Offices. Although this may seem to be an indicator for the backlog in handling applications within the offices, it is not in fact a particularly good one because a substantial part of pending applications are awaiting action from the applicant. This could be for instance a request for examination, or a response to actions communicated by the office. In order to improve the comparability of the information given by the IP5 Offices, the definitions on pendency at the EPO were adjusted. More details can be found in annex 2.

As shown in Table 4.2, altogether more than 2.9 million applications were pending in the EPO, the JPO, the KIPO, and the USPTO at the end of 2012, a decrease of nearly 7 percent compared to the number of applications pending at the end of 2011 (3.2 million). This is mainly accounted for by drops of 12% at JPO and 9% at USPTO. The SIPO does not report this information.

Table 4.2: STATISTICS ON PROCEDURES
Definitions of the various terms are given in Annex 2.

Progress in the procedure	Year	EPO	JPO	KIPO	SIPO	USPTO
Rates in percentage						
Examination ²⁹	2011	92.9	65.8	72.4	327 188	100
	2012	92.8	67,1	84.2	445 608	100
Grant ³⁰	2011	47.4	60.5	64.5	172 113	63.3
	2012	49.8	66.8	65.6	217 105	68.9
Opposition	2011	5.0	-	-	-	-
	2012	4.7	-	-	-	-
Appeal on examination ³¹	2011	28.0	27 112	17.1%	-	5.7
	2012	26.7	25 388	17.1%	-	4.6
Pendency in the procedure						
Awaiting request for examination	2011	145 531	770 994	214 855	n.a.	-
	2012	143 267	754 091	236 316	n.a.	-
Pending examinations	2011	355 803	448 123	528 756	n.a.	662 457
	2012	363 521	319 247	523 040	n.a.	603 898
Pendency first action ³² (months)	2011	7.7	25.9	16.8	11.4	23.6
	2012	9.1	20.1	14.8	11.5	19.6
Pendency final action ³³ (months)	2011	36.7	34.0	22.8	22.9	33.8
	2012	36.2	29.6	21.6	22.6	31.7
Invalidation Pendency (months)	2011	-	-	-	7.5	-
	2012	-	-	-	6.6	-

- = not applicable n.a. = not available

These figures should be compared with care, taking account of the differences in the procedures. At the EPO, the examination is done in two phases: a search and a substantive examination, while they are done in one combined phase at the other IP5 Offices. Contrary to the system at the USPTO, where there is no delay, at the EPO substantive examination may be requested within 6 months after the issue of a search report. For the other IP5 Offices, a request for examination may be made up to three years after filing for the JPO and the SIPO, and up to five years after filing for the KIPO. At all IP5 Offices, various options to initiate a faster examination are available.

²⁹ For the SIPO, only numbers are available. Herein, the numbers refer to the amounts of patent applications entering into the substantial examination phase in the respective year at SIPO.

³⁰ For the SIPO, only numbers are available.

³¹ For the JPO, only numbers are available.

³² For the EPO, the first office action is the extended European search report that includes a written opinion on patentability.

³³ The pendency in examination is calculated from the date at which the file was allocated for examination (EPO, usually 6 months after the first action), the date of the request for examination (JPO, KIPO and SIPO), and the filing date (USPTO). See Annex 2.