

Chapter 4

PATENT ACTIVITY AT THE IP5 OFFICES

This chapter presents trends in patent application filings and grants at the IP5 Offices. These statistics are based on data from the IP5 Offices and are generally available on a more up-to-date basis than those statistics presented by Blocs in Chapter 3. Most of the information that appears here includes data from both 2010 and 2011. Regarding Europe, statistics 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 procedure.⁴⁰ 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.

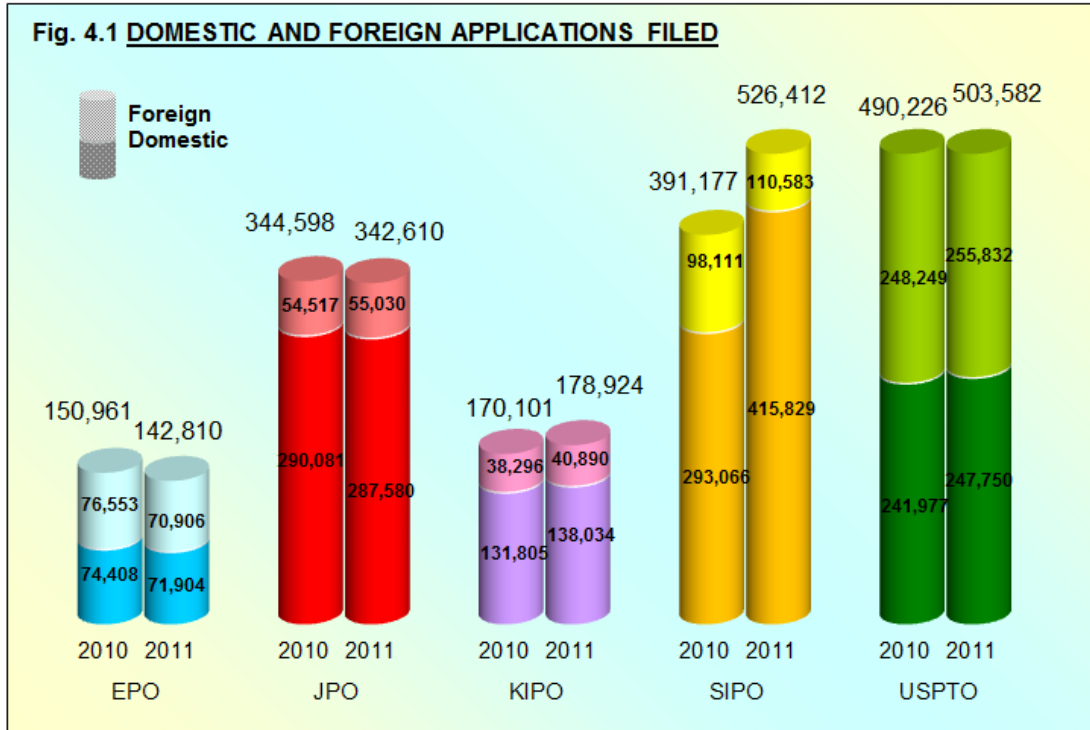
For granted patents, the statistics combine information by Office and bloc of origin, displaying comparisons by year of grant. The representations here are similar to those for Fig. 3.10, where granted patents are counted once only, except that, for EPC states, only the EPO is considered as the granting 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.

⁴⁰ See guide at beginning of Chapter 3.

PATENT APPLICATIONS FILED

Fig. 4.1 shows the number of domestic and foreign origin (residence of first-named applicants or inventors) patent applications filed with each of the IP5 Offices during the two most recent years. The EPO is indicated from the viewpoint of an Office with the EPO domestic applications corresponding to those filed by residents of EPC states.

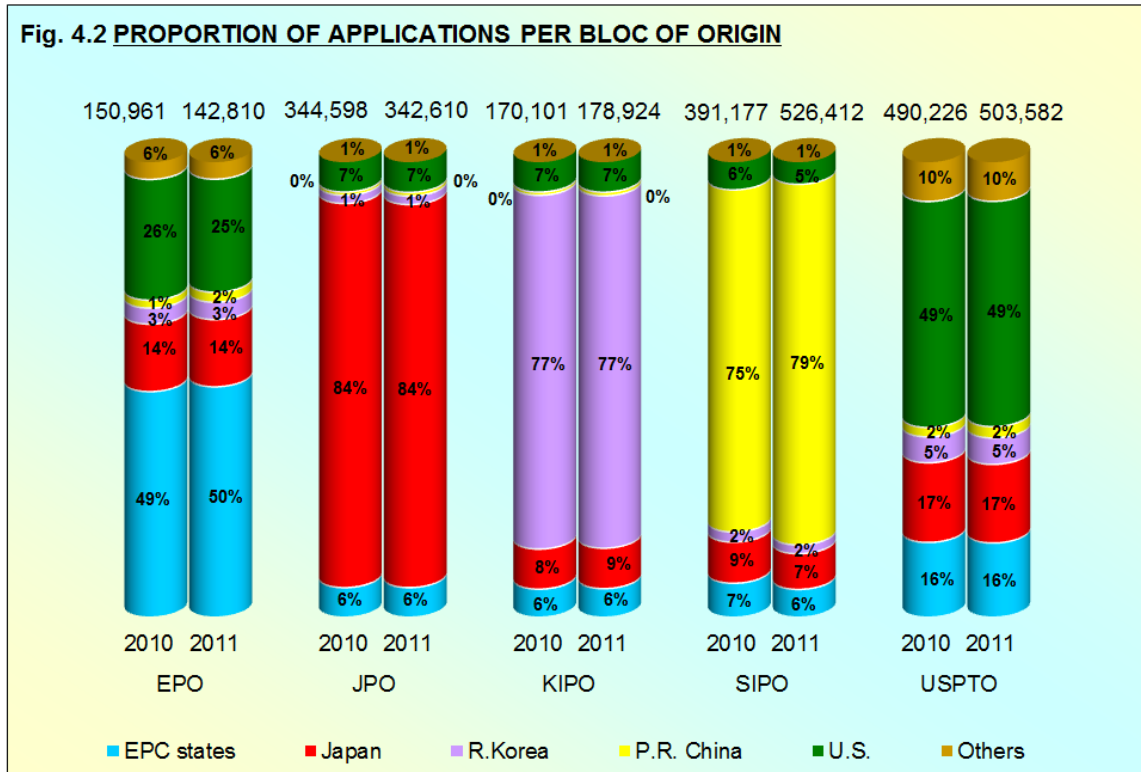


In 2011, a total of about 1,694,000 patent applications were filed at the IP5 Offices, an increase of 10 percent from 2010 (1,547,000).

There were increases in patent applications at the SIPO, the KIPO and the USPTO of 35 percent, 5 percent, and 3 percent in 2011, while the EPO and the JPO had decreases of 5 percent and 1 percent. The decrease at the EPO can largely be explained by the one-off effect of a rule adjustment that led to a number of additional divisional filings made in 2010.

At the KIPO, the SIPO, and the USPTO, both domestic and foreign applications increased in 2011. At the JPO, domestic applications declined while foreign applications increased. At the EPO, both domestic and foreign applications decreased. The SIPO had a particularly large increase in domestic filings of 42 percent.

Fig. 4.2 shows the respective shares of patent application filings by origin (residence of first-named applicants or inventors) relative to total filings at each Office for 2010 and 2011.



Comparison of the numbers of applications across the IP5 Offices⁴¹ 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 2011, an application filed at the EPO contained 13.9 claims (13.4 in 2010), one filed at the JPO contained 9.7 claims (9.6 in 2010), one filed at the KIPO contained 10.6 claims (10.7 in 2010), one filed at the SIPO contained 8.4 claims (9.2 in 2010), while one filed at the USPTO had 18.3 claims (18.5 in 2010). These numbers declined slightly in all the IP5 Offices from 2010 to 2011, with the reduction at the SIPO being slightly greater than for the other IP5 Offices.

The shares of patent application filings by bloc of origin are generally consistent for 2010 and 2011 for each Office.

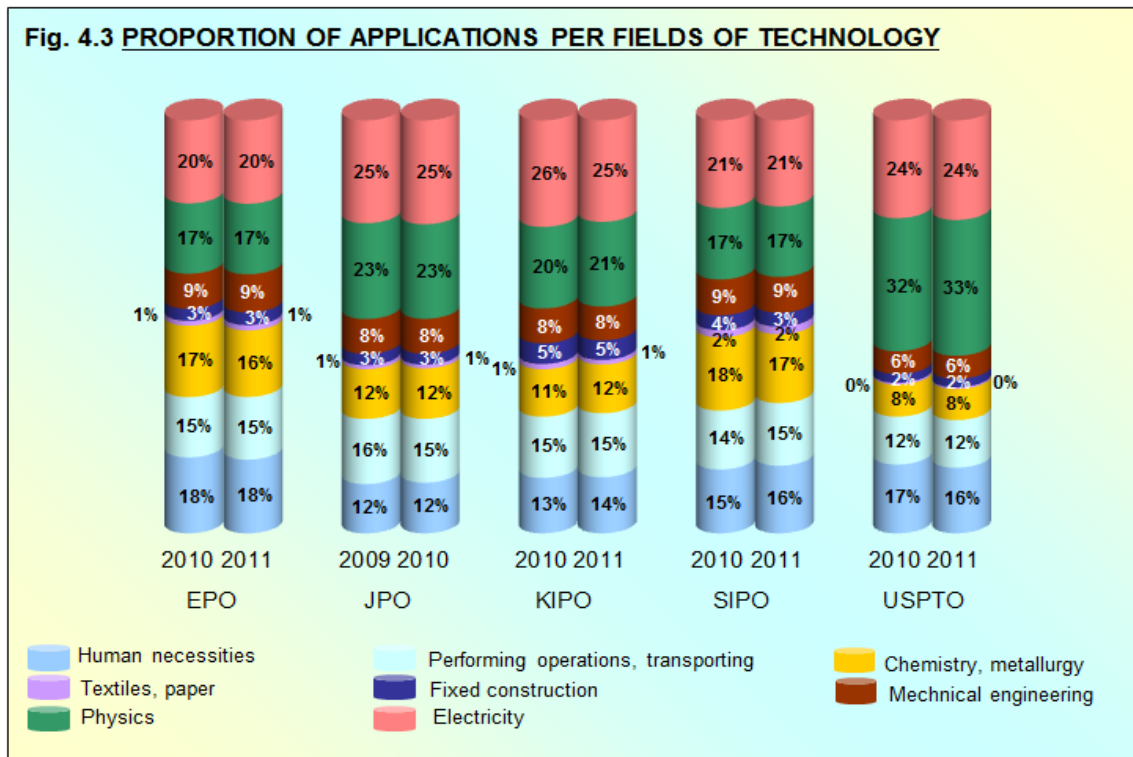
⁴¹ EPC states applications are applications made by residents from within the EPC bloc as a whole. See the EPO section of Chapter 2 for a listing of EPC states. For EPC states, only the EPO is considered as the granting authority in this chapter.

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. Fig. 4.3 shows the distribution of applications according to the main sections of the IPC.⁴²

The classification takes place at a different stage of the procedure in the Offices. Data are shown for the EPO, the KIPO, the SIPO, and the USPTO for the filing years 2010 and 2011⁴³, while for the JPO the breakdown is given for the filing years 2009 and 2010⁴⁴.

Fig. 4.3 indicates the share of applications by fields of technology at each Office. The shares are determined for all applications for which a classification is available.



More than half of the filings at the USPTO were concentrated in physics and electricity technologies. These same technologies also were important at the other offices where they generally show a more balanced technology distribution. The proportions of technologies filed at each office have been fairly consistent over time.

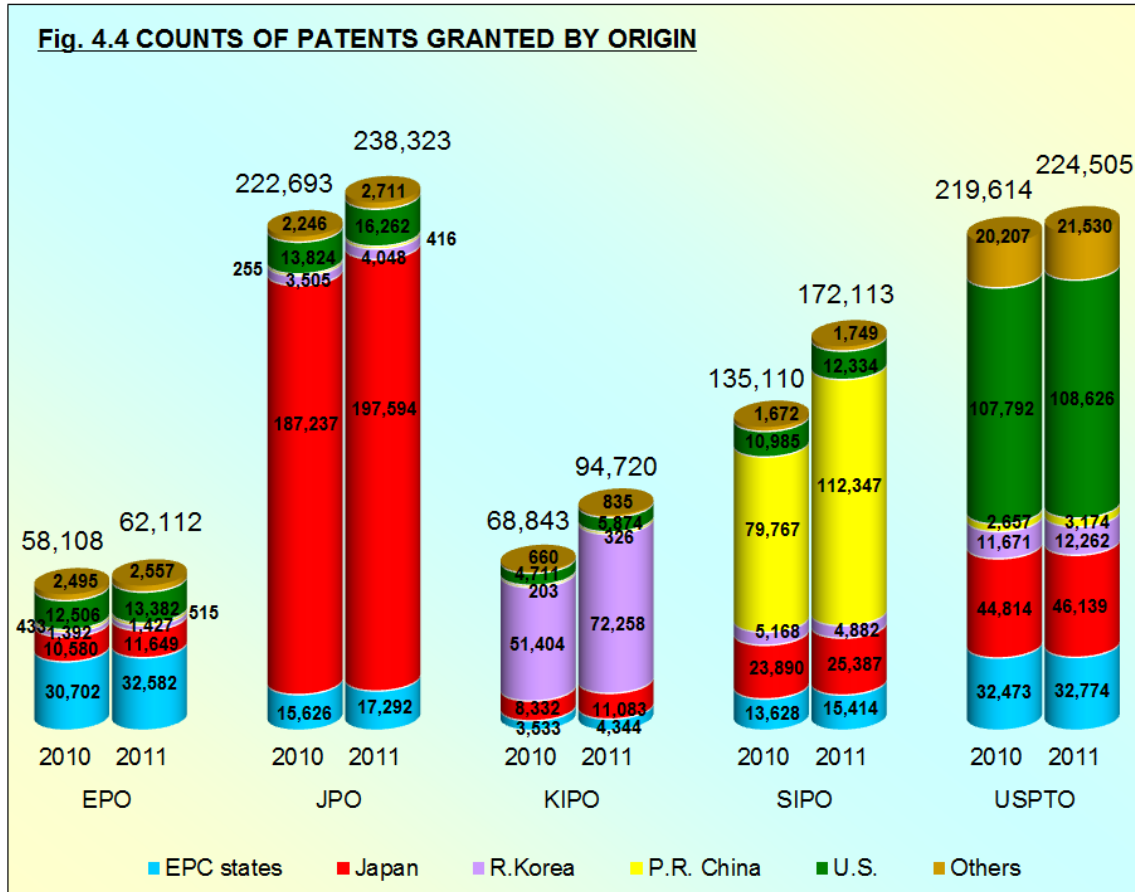
⁴² <http://www.int/classifications/ipc/en/>

⁴³ USPTO applications are classified according to the U.S. Patent Classification system. The breakdown according to the IPC has been determined by means of a general concordance between both classifications. The connection between the two systems is not one-to-one in all cases. Therefore, there may be some technical differences between the nature of the USPTO's IPC data and that from the EPO, the JPO, the KIPO and the SIPO.

⁴⁴ JPO data for 2010 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).

PATENT GRANTS

Fig. 4.4 shows the numbers of patents granted by the IP5 Offices, according to the bloc of origin (residence of first-named owners, applicants or inventors)⁴⁵.

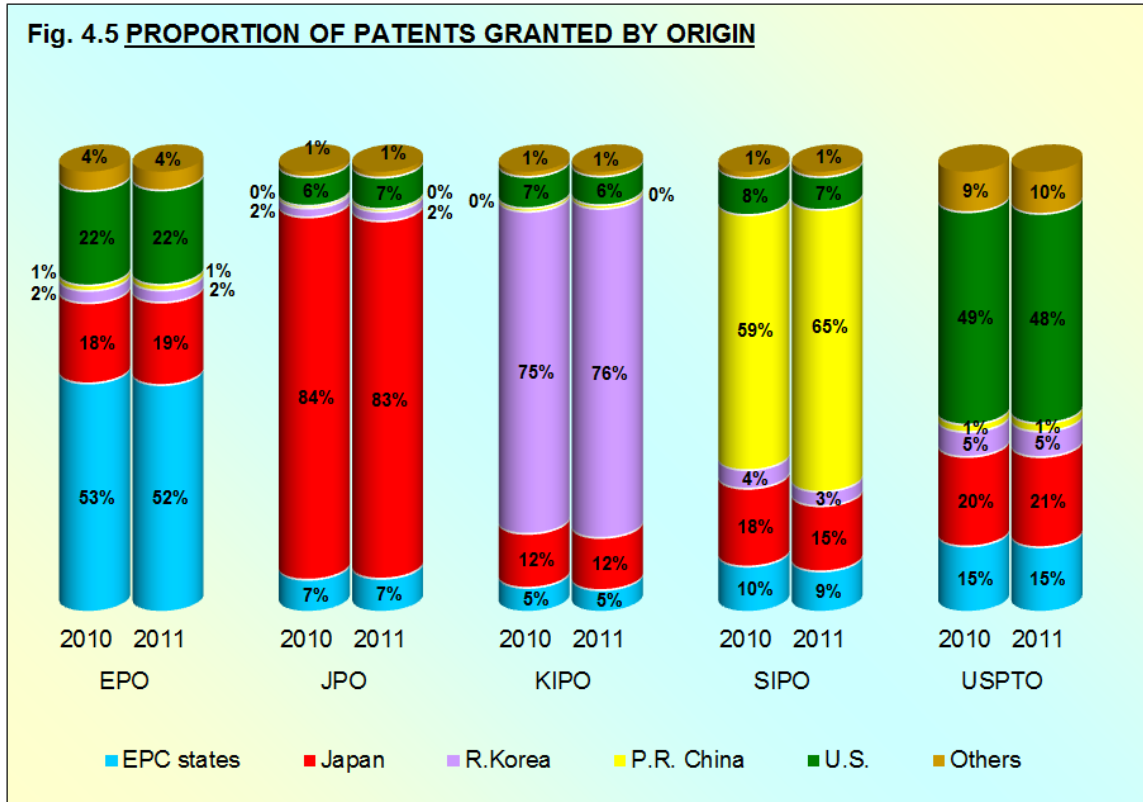


Together the IP5 Offices granted a total of 791,773 patents in 2011, which were 87,405 more than in 2010. This is an overall year-to-year growth rate of 12 percent.

The number of patents granted by each of the IP5 Offices increased in 2011, at the KIPO and the SIPO by as much as 38 percent and 27 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").

⁴⁵ EPC states grants are grants with first-named owners residing within the EPC bloc as a whole. See the EPO section of Chapter 2 for a listing of EPC states. For EPC states, only the EPO is considered as the granting authority in this chapter.

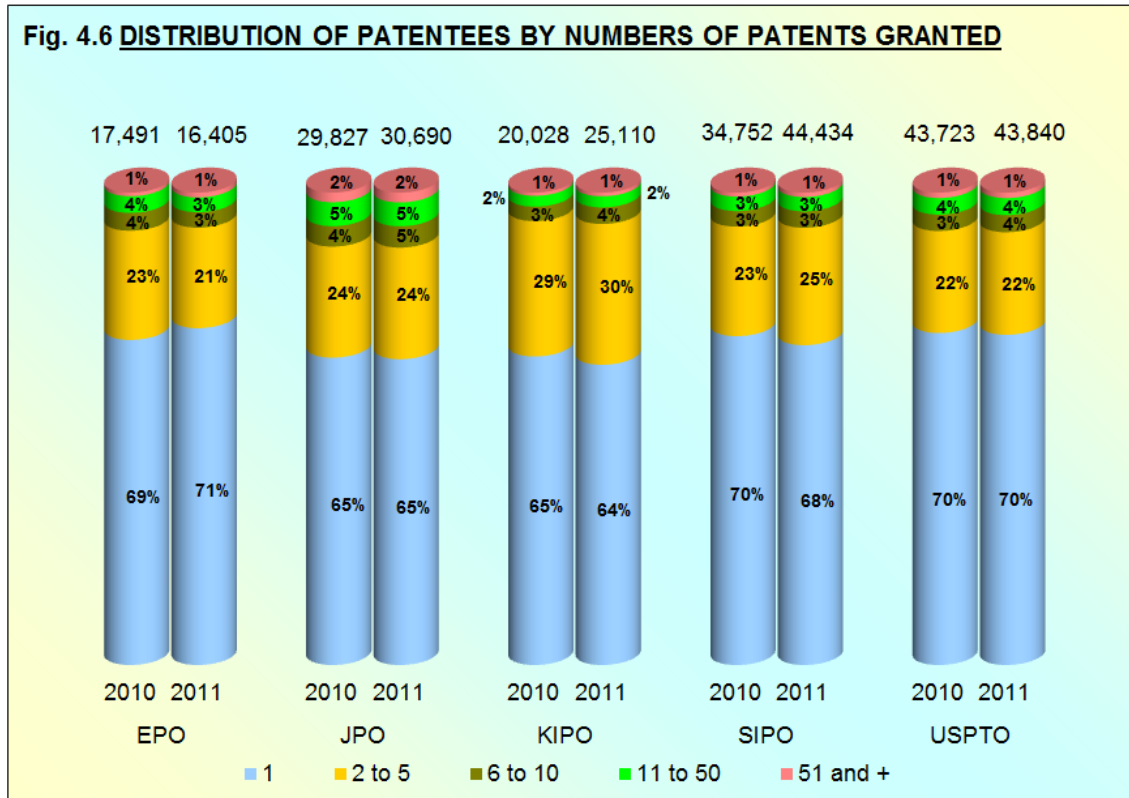
Fig. 4.5 presents the percentage shares of total patents granted by bloc of origin (residence of first-named owners, applicants or inventors).⁴⁶



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.

⁴⁶ EPC states grants are grants with first-named owners residing within the EPC bloc as a whole. See the EPO section of Chapter 2 for a listing of EPC states. For EPC states, only the EPO is considered as the granting authority.

Fig. 4.6 shows the breakdown of patentees by numbers of patents granted.⁴⁷



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 2010 and 2011 for each office.

In 2011, the proportion of patentees that received only one grant in a year 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 89 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 2011, the average patentee received 3.8 patents at the EPO, 7.8 at the JPO, 3.8 at the KIPO, 3.9 at the SIPO, and 5.1 at the USPTO. The greatest number of patents granted to a single applicant was 837 at the EPO, 6,620 at the JPO, 15,959 at the KIPO, 3,178 at the SIPO, and 6,148 at the USPTO.

⁴⁷ USPTO counts include patents assigned to organizations and patents owned by individuals. In prior reports, USPTO counts were limited to patents assigned to organizations.

MAINTENANCE

A patent is enforceable for a fixed term, and depends on actions taken by owner. In the five 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.

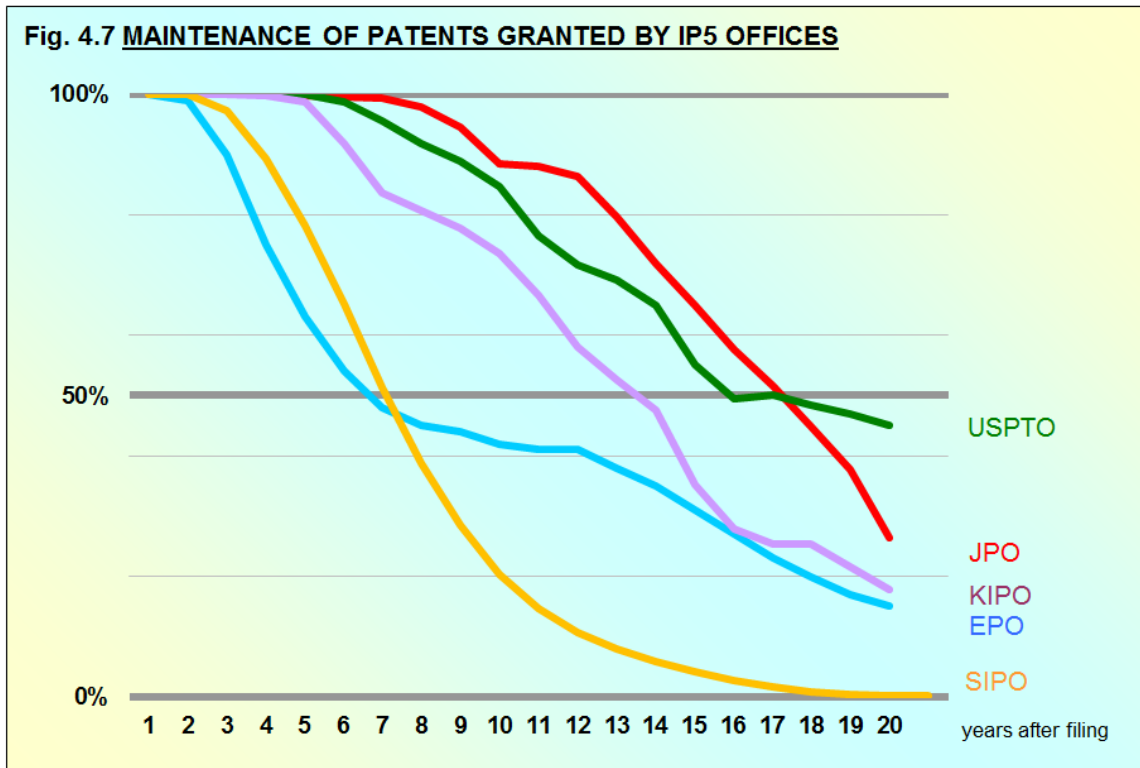
At the EPO, renewal fees are payable from the third year after filing in order to maintain the application. After the patent has been granted, annual renewal fees are then paid to the national Office of each designated EPC contracting state in which the patent has been registered. These national patents can be maintained for different periods in each contracting state.

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.

Fig. 4.7 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.



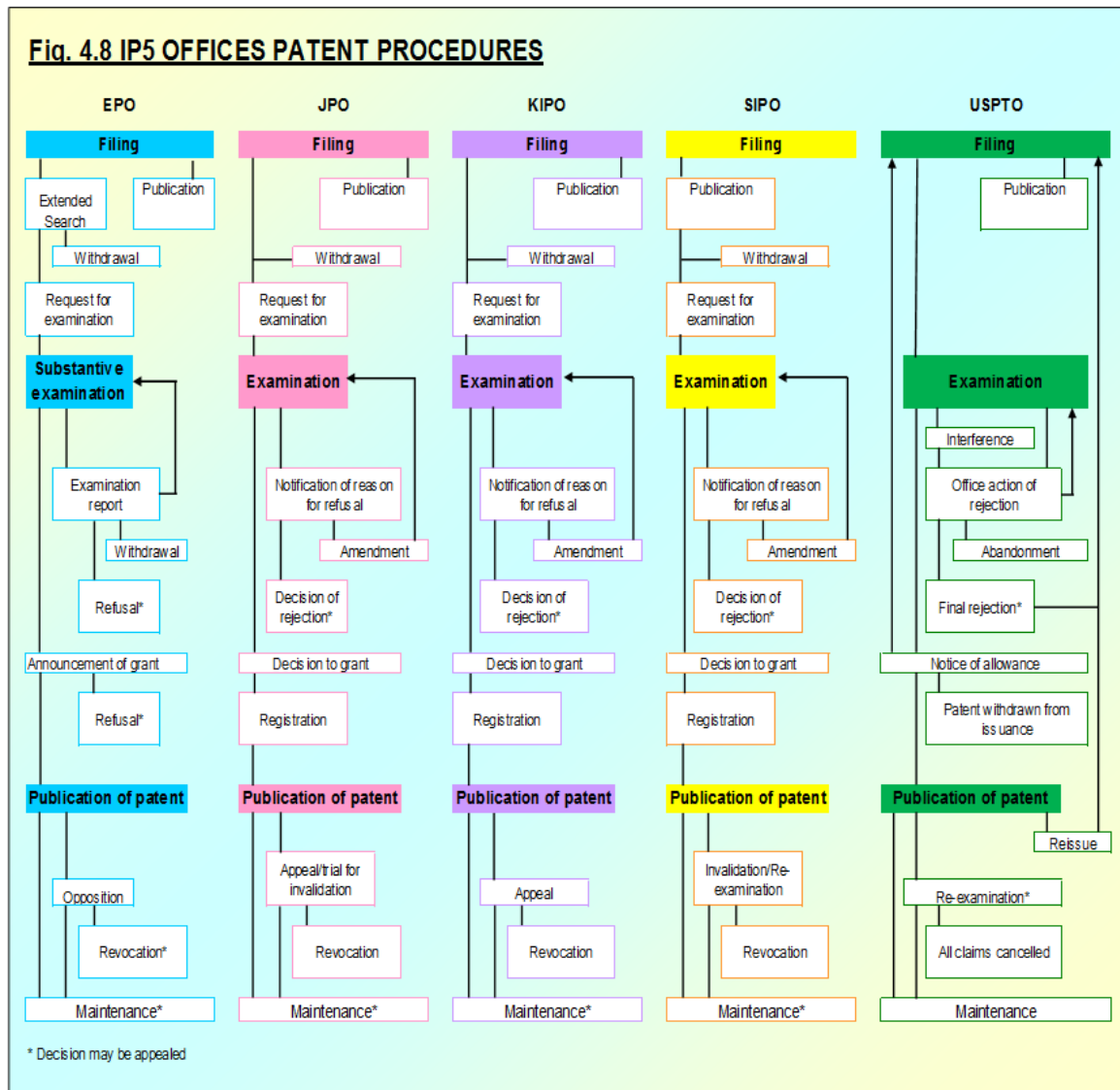
Over 50 percent of the patents granted by the JPO and the USPTO are maintained for at least 17 years from filing, compared to 13 years for the KIPO, and 7 years for patents granted by the EPO and by the SIPO.

The EPO proportions represent an average ratio of maintenance in the EPC states. The figures are strongly impacted by the large proportion of patents granted for many states that joined the EPO within the recent years. Considering the shape of the curve for the EPO in Fig. 4.7, 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 more long 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 the fees (by year after patent grant).

PATENT PROCEDURES

Fig. 4.8 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 always bear in mind when interpreting such statistics that details of the procedures differ between Offices, sometimes to a large degree (e.g. in time lags between stages of the procedures).



See Annex 2 for some further details about the procedures.

STATISTICS ON PROCEDURES

Table 4 shows various statistics as average rates and numbers where applicable for 2010 and 2011. 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 applicants have substantially more time to evaluate whether to proceed further with the application or not.

The grant rates at the EPO, the JPO, the KIPO, and the USPTO increased from 2010 to 2011. 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. However this is not a particularly good indicator for the backlog in handling applications within the Offices, since 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.

As shown in Table 4, altogether more than 3.2 million applications were pending in the EPO, the JPO, the KIPO, and the USPTO at the end of 2011, a decrease from the total pending at the end of 2010 (3.4 million). The SIPO does not report this information.

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Table 4: STATISTICS ON PROCEDURES⁴⁸

Progress in the procedure Rates in percentage		Year	EPO	JPO	KIPO	SIPO	USPTO
Examination ⁴⁹		2010	92.6	63.7	79.2	284,967	100.0
		2011	92.9	65.8	72.4	327,188	100.0
Grant ⁵⁰		2010	42.5	54.9	62.7	135,110	61.2
		2011	47.4	60.5	64.5	172,113	63.3
Opposition		2010	5.2	-	-	-	-
		2011	5.0	-	-	-	-
Maintenance after opposition		2010	67.4	-	-	-	-
		2011	68.6	-	-	-	-
Appeal ⁵¹	On examination	2010	26.7	28,300	-	-	5.9
		2011	28.0	27,112	-	-	5.7
	On opposition	2010	46.5	-	-	-	-
		2011	46.7	-	-	-	-
Pendency in the procedure							
Search	Number of pending applications	2010	140,946	-	-	-	-
		2011	123,326	-	-	-	-
	Pendency times in search (months)	2010	7.5	-	-	-	-
		2011	7.7	-	-	-	-
Examination	Number of applications awaiting request for examination	2010	20,474	816,024	235,019	n.a.	-
		2011	22,205	770,994	241,855	n.a.	-
	Number of pending examinations	2010	346,449	573,279	520,864	n.a.	721,801
		2011	355,803	448,123	528,756	n.a.	662,457
	Pendency ⁵² time to first office action (months)	2010	21.8	28.7	18.5	11.6	24.4
		2011	25.1	25.9	16.8	11.4	23.6
Pendency ⁵³ time in examination (months)	2010	39.1	35.3	24.6	24.2	34.9	
	2011	40.5	34.0	22.8	22.9	33.8	
Opposition	Number of pending applications	2010	5,398	-	-	-	-
		2011	5,204	-	-	-	-
	Pendency time in opposition (months)	2010	21.4	-	-	-	-
		2011	20.4	-	-	-	-
Invalidation	Pendency time in invalidation (months)	2010	-	-	-	7.6	-
		2011	-	-	-	7.5	-

- = not applicable n.a. = not available

⁴⁸ Definitions for the terminology used in Table 4 are available in Annex 2. Also, please see the explanatory text preceding this table.

⁴⁹ For the SIPO, only numbers are available.

⁵⁰ For the SIPO, only numbers are available.

⁵¹ For the JPO, only numbers are available.

⁵² For the EPO, the first office action is in fact the search with written opinion on patentability.

⁵³ For the EPO, the pendency time in examination is calculated from the date of the filing.