

Chapter 4

PATENT ACTIVITY AT THE FOUR OFFICES

This chapter presents trends in patent application filings and grants at the Four Offices. These statistics are generally available on a more up-to-date basis than those presented by Blocs in Chapter 3; so most information that appears here goes beyond 2009 to cover 2010. 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.

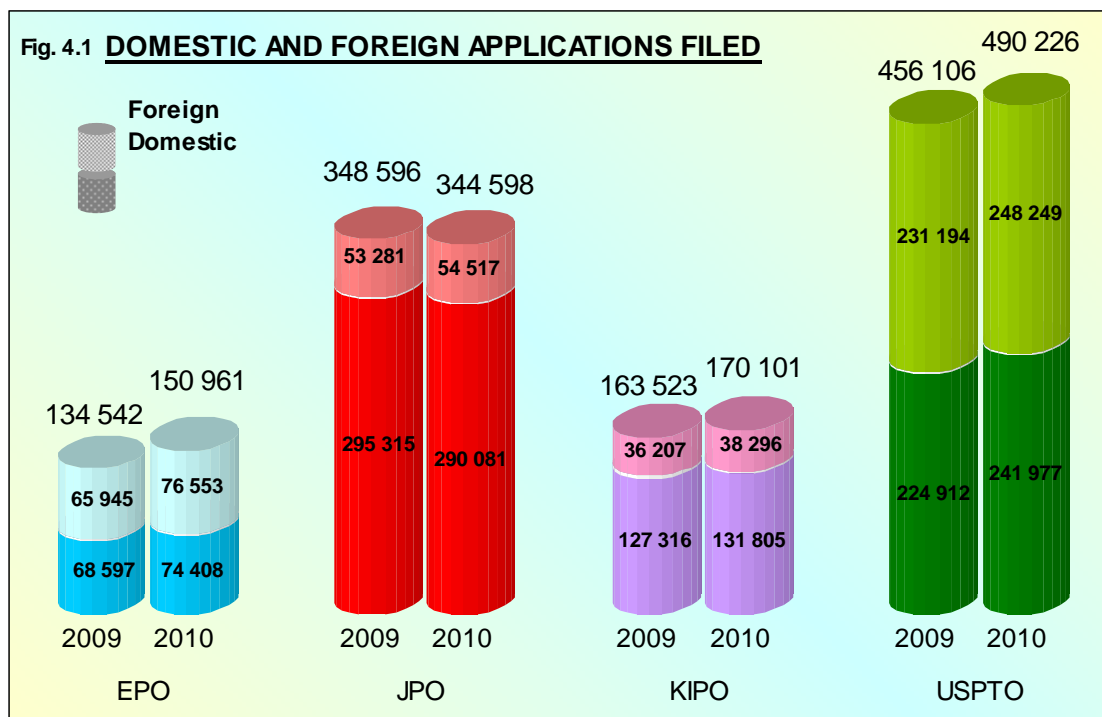
The statistics give insight into the work that is requested and carried out at the Four Offices. For patent applications the representations are analogous to those of the earlier Figures 3.5, 3.6 and 3.12.

The activities at the Four Offices are demonstrated by counts of the numbers of patent applications that were filed. These counts represent the total of direct national/regional applications filed and PCT applications entering the national/regional phase. In general there seem to have been drops or levellings of numbers of applications filed in 2009, presumably due to the recession, followed by some evidence of recovery in 2010.

For granted patents, the statistics combine information on direct (national or regional) and PCT applications by year of grant. The representations here are similar to Fig. 3.10, 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 Four Offices.

PATENT APPLICATIONS FILED

The numbers of domestic (residents of the country) and foreign (non-residents) patent applications filed with each of the Four Offices are shown in Fig. 4.1. To demonstrate effects caused by the recession, in this edition we show applications for the three years 2008, 2009 and 2010 rather than just for the two most recent years.



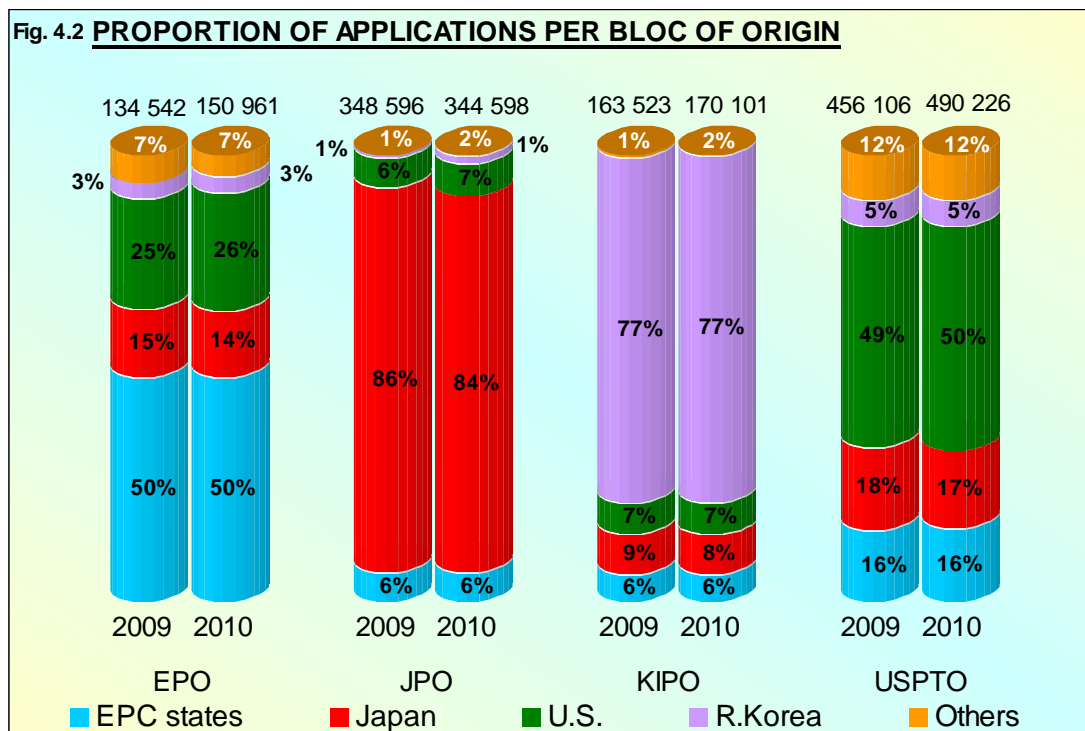
In 2010, about 1 156 000 patent applications have been filed at the Four Offices, almost as many as in 2008.

By the recent recession, the number of patent applications at the Four Offices in 2009 was decreased. However, the number of patent applications has been recovered in 2010 except JPO.

In Japan a recovery of sorts in 2010 is only marked by a lower drop by 1 percent than in the previous year, which should be interpreted positively in line with a longer term slow downward trend in filings (see Fig. 3.9). The increases in applications at EPO, KIPO and USPTO were 12 percent, 4 percent and 7 percent. Part of the large increase at EPO can be explained by the one-off effect of a rule adjustment that was mentioned in Chapter 2, that led to a number of additional divisional filings made in 2010.

At EPO, KIPO and USPTO, domestic and foreign applications increased in 2010. However at JPO, domestic applications continued to decline slightly while foreign applications increased. This figure also illustrates the predominance of domestic applications at JPO and KIPO.

Fig. 4.2 shows the respective shares of patent application filings by origin (residence of applicants or inventors) relative to total filings at each Office for 2009 and 2010.



Comparison of the numbers of applications at the Four Offices should only be made with caution. For example, the numbers of claims given in applications are significantly different among the Four Offices. On average, in 2010, an application filed at EPO contained 13.4 claims (13.9 in 2009), one filed at the JPO contained 9.6 claims (9.7 in 2009), one filed at KIPO contained 10.7 claims (10.3 in 2009), while one application at USPTO had 18.5 claims (18.6 in 2009).

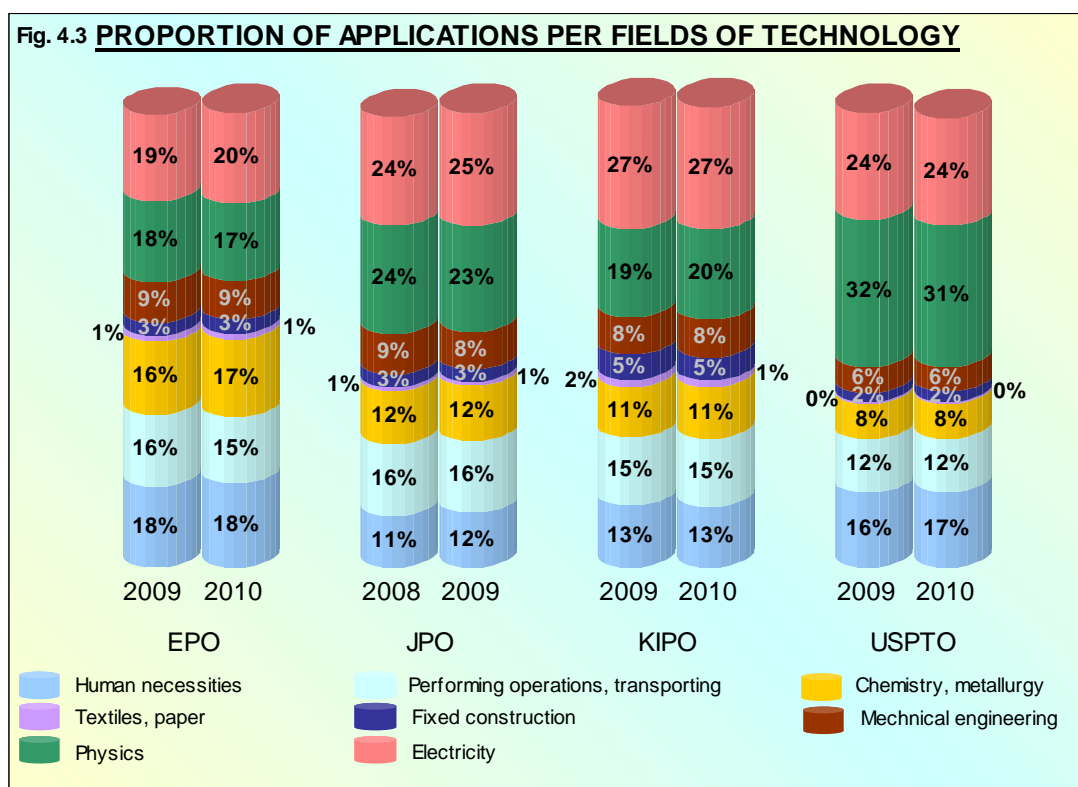
The shares of patent application filings by each bloc of origin are quite consistent for 2009 and 2010.

FIELDS OF TECHNOLOGY

Patents are classified by the Four Offices according to the International Patent Classification (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.

The classification takes place at a different stage of the procedure in the Offices. Data are shown for the EPO, KIPO, and the USPTO for the filing years 2009 and 2010²⁷, while for the JPO the breakdown is given for the filing years 2008 and 2009²⁸.

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.



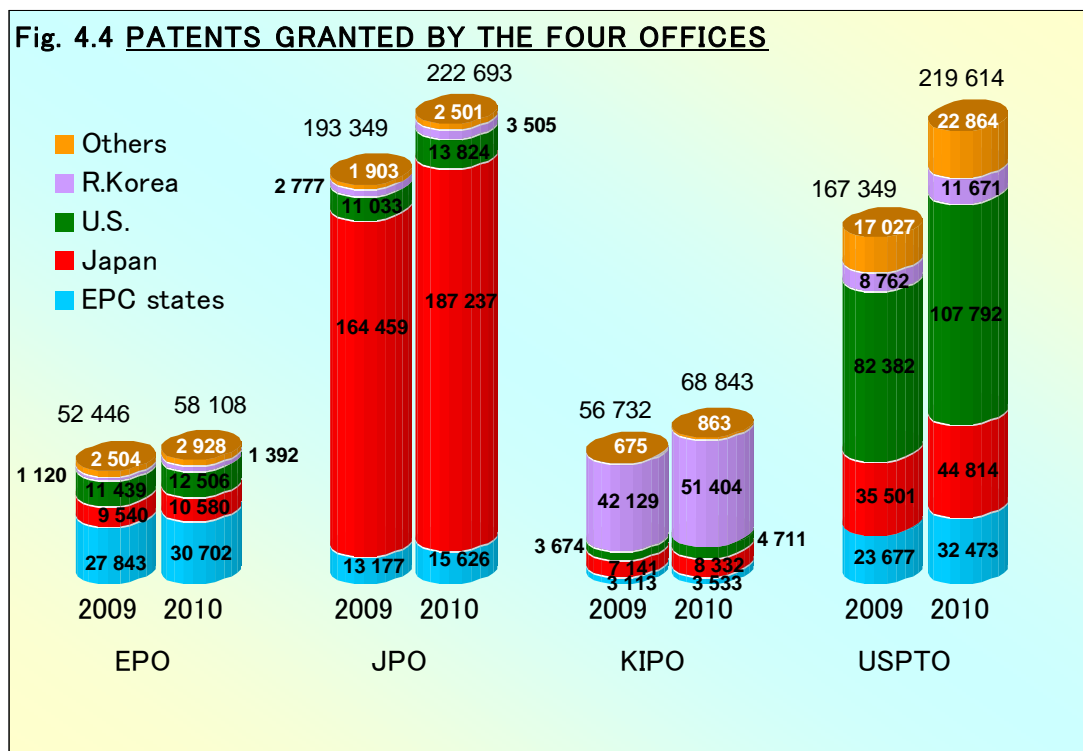
More than half of the applications filed at USPTO were related to the fields of Physics or Electricity. These fields are also important at the other Offices, although less so at EPO where there is a more balanced distribution between the fields. No major changes of proportions can be seen between the pairs of years that are compared for each Office.

²⁷ USPTO applications are classified according to 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 USPTO's IPC data and that from EPO, JPO and KIPO.

²⁸ JPO data for 2009 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

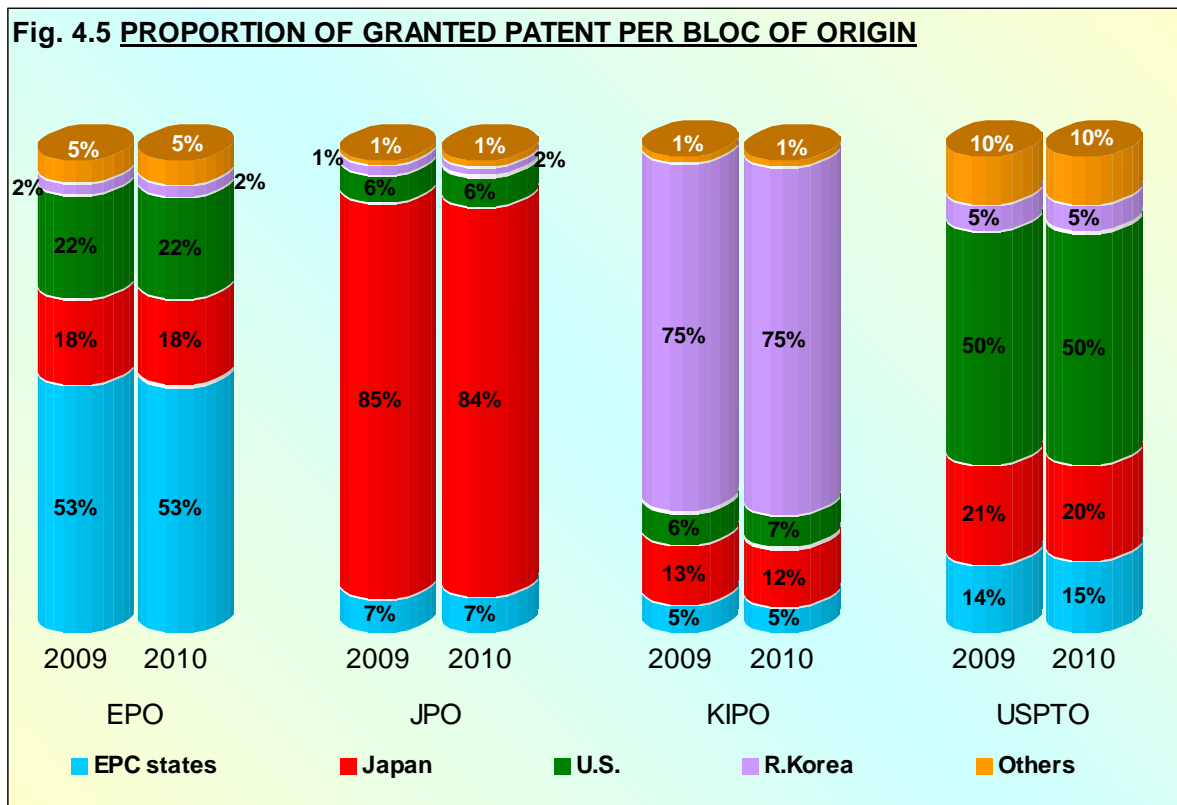
Fig. 4.4 shows the numbers of patents granted by the Four Offices, according to the bloc of origin.



Together the Four Offices granted 569 258 patents in 2010, which were 99 382 more than in 2009. This is an overall growth of 21.2 percent.

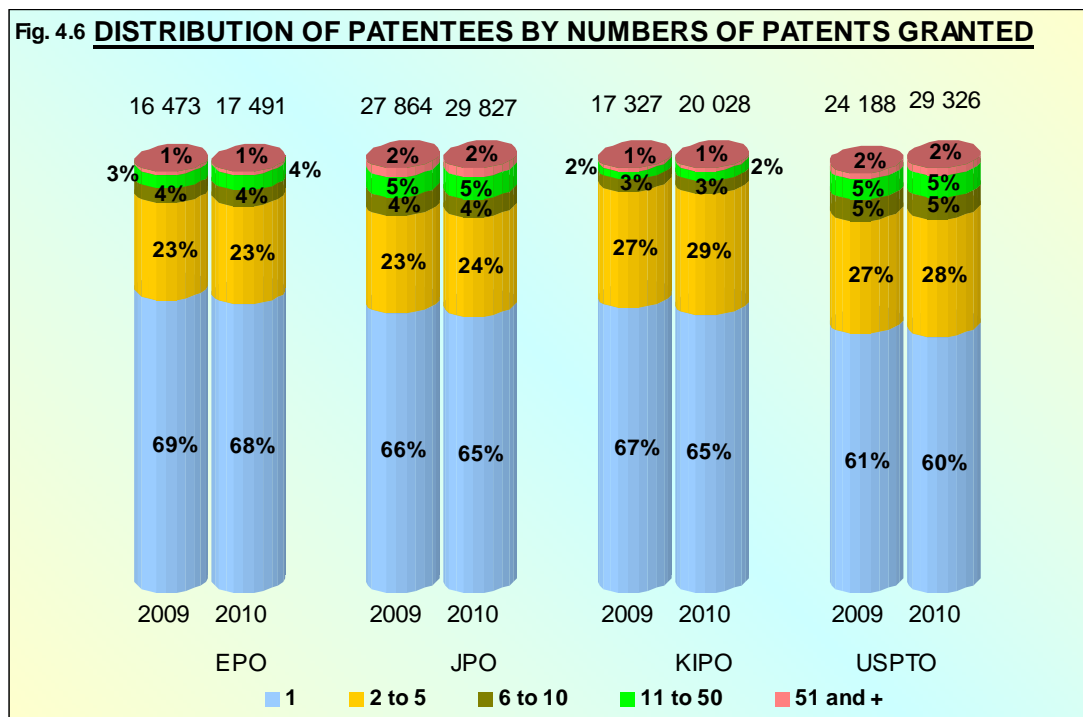
The number of patents granted by each of the Four Offices increased in 2010, especially at KIPO and USPTO where the increases were 21 percent and 31 percent, respectively. The differences between the Four Offices regarding the absolute numbers of patents granted can only be partly explained by differences in the number of corresponding applications. These numbers are also affected by differing grant rates and durations to process applications by the Four Offices (see section below on "Patent Procedures").

Fig. 4.5 presents the percentage shares of total patents granted by bloc of origin.



The shares from the different blocs of origin are not far away from those observed for the filings in each Office as presented in Fig. 4.2, although at the EPO the shares of the EPC states and Japan are somewhat higher than their shares in applications filed.

The breakdown of numbers of patentees by numbers of patents granted is shown in Fig. 4.6.



This diagram shows that the distribution of grants to patentees is similar at each Office and is highly skewed at all of them.

At the Four Offices, the proportion of patentees that received one grant only in a year was between 61 percent for USPTO in 2010 and 69 percent for EPO in 2009. The proportion of patentees that received less than 6 patents was between 88 percent for USPTO and 94 percent for KIPO. In 2010, the proportion of patentees receiving 2 to 5 grants is larger at KIPO (29 percent in 2010) and at USPTO (28 percent in 2010) than at EPO (23 percent) and at JPO (24 percent).

In 2010, the average patentee received 3.3 patents at EPO, 7.5 at JPO, 3.4 at KIPO and 7.5 at USPTO. The greatest number of patents granted to a single applicant was 754 at EPO, 5 957 at JPO, 13 081 at KIPO, and 5 866 at USPTO.

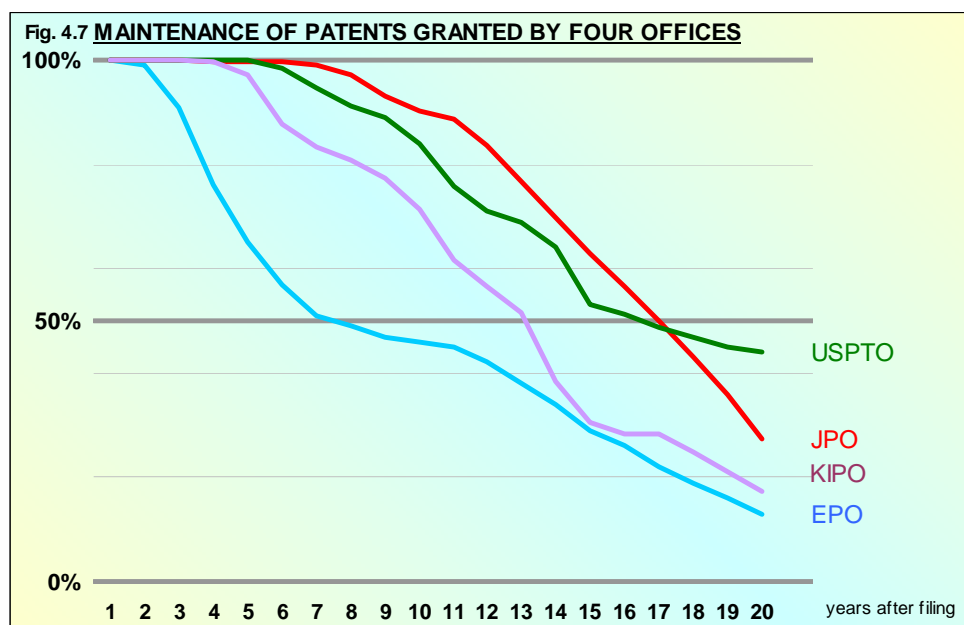
A patent is enforceable for a fixed term, and depends on actions taken by owner. In all Four Offices the fixed term is usually a twenty year term from the date of filing the application. In order to maintain protection during this period, the applicant has to pay what are variously known as renewal, 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 Four Offices, protection expires if a renewal fee is not paid in due time.

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

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

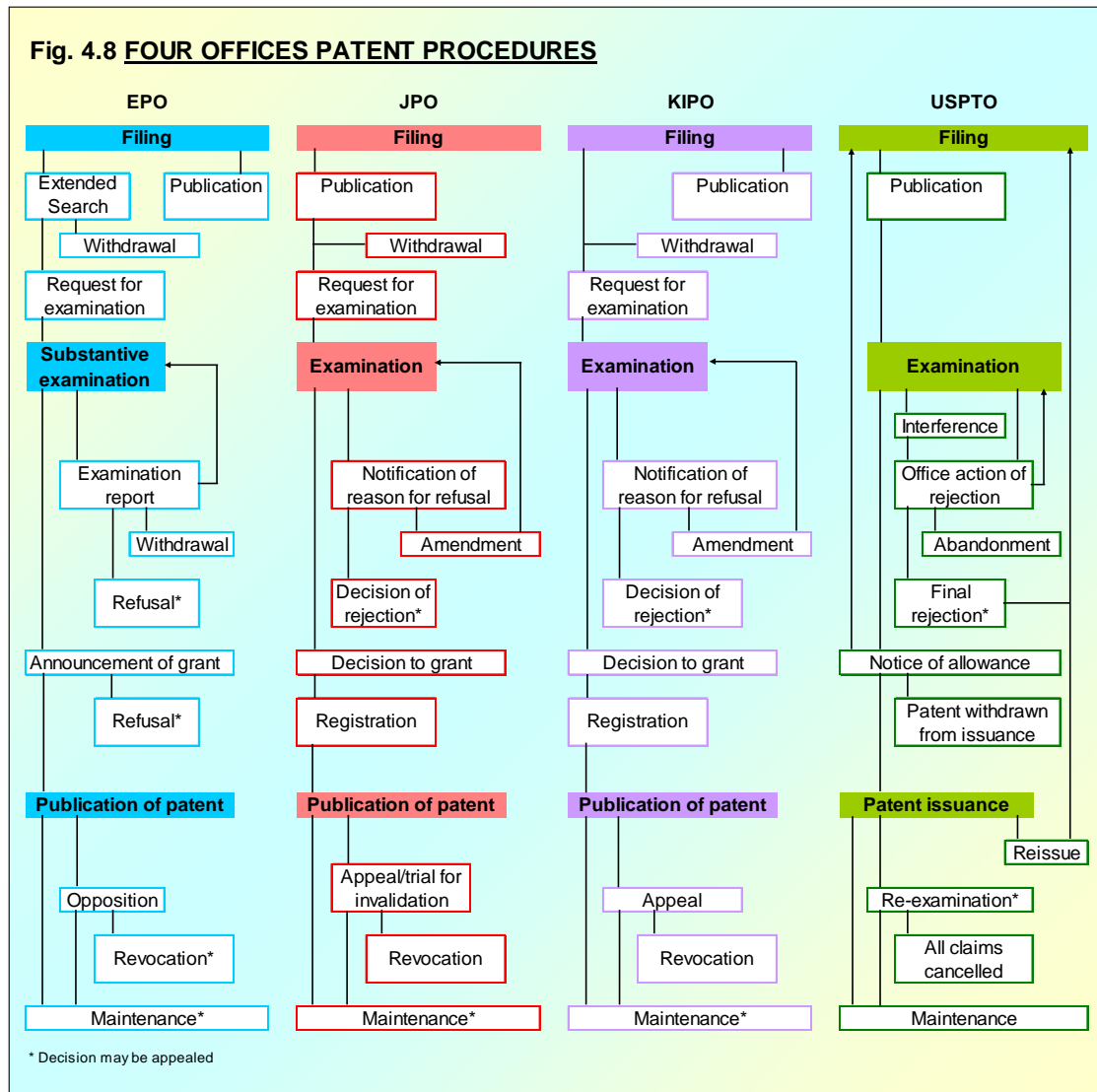
Fig. 4.7 shows the proportions of patents granted by each Office that are maintained for differing lengths of time. It compares the rate of granted patent registrations existing and in force each patent year starting with the year of application. The EPO proportions represent an average ratio of maintenance in the 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 collecting the fees (by year after patent grant).



In Japan, over 50 percent of the patents granted are maintained for at least 17 years from filing, compared 13 years for the R. Korea patents, 16 years for the U.S. patents and 8 years for EPO granted rights.

PATENT PROCEDURES

The major phases of the grant procedures at the Four Offices are shown in Fig. 4.8, which 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).



Examination: search and substantive examination

Each of the Four Offices examines a filed patent application based upon novelty, inventive step, and industrial applicability. At EPO, this examination is done in two phases: a search to establish the state of the art with respect to the invention and a substantive examination to evaluate the inventive step and industrial applicability. For the second phase, a separate request has to be filed no later than six months after publication of the search report.

In the national procedures before JPO, KIPO or USPTO, the search and substantive examination are undertaken in one phase.

Filing of a national application with USPTO is taken to imply an immediate request for examination. At both JPO and KIPO, where deferred examination systems exist, filing of a national application does not imply a request for examination; and this may be filed up to three and five years, respectively, after the date of filing.

The international searches and international preliminary examinations carried out by the Four Offices as PCT authorities are not included in the flow chart.

Publication

In the Four Offices, the application is to be published no later than 18 months after the date of filing or the earliest priority date (date of first filing). The application can be published earlier at the applicant's request. In USPTO, an application that has not and will not be the subject of an application filed in foreign countries does not need to be published if an applicant so requests.

Grant, refusal / rejection, withdrawal

When an examiner intends to grant a patent, this information is communicated to the applicant - Announcement of grant (EPO); Decision to grant (JPO); Decision to grant (KIPO); Notice of allowance (USPTO). If a patent cannot be granted in the form as filed before the Office, the intention to reject the application is communicated to the applicant: (unfavourable) Examination Report (EPO); Notification of reason for refusal (JPO); Notification of reason for refusal (KIPO); Office action of rejection (USPTO). The applicant may then make amendments to the application, generally in the claims, after which examination is resumed. This procedural step is iterated as long as the applicant continues to make appropriate amendments. Then, either the patent is granted or the application is finally rejected - Intention to refuse (EPO); Decision of rejection (JPO); Decision of rejection (KIPO); Final rejection (USPTO) - or withdrawn by the applicant - Withdrawal (EPO); Withdrawal or Abandonment (JPO); Withdrawal or Abandonment (KIPO); Abandonment (USPTO). In addition, if no request for examination for an application is filed to EPO, JPO or KIPO within a prescribed period (six months after publication of the search, three years from the date of filing, and five years from the date of filing, respectively), the application will be deemed to have been withdrawn. In all four procedures, an applicant may withdraw or abandon the application at any time before the application is granted or finally refused.

After the decision to grant the patent, the patent specifications are published if certain administrative conditions are fulfilled, known as Publication of patent (EPO, JPO, and KIPO) or Patent issuance (USPTO).

Opposition

The opposition procedures allow third parties to challenge a patent granted before the granting Office.

There is no opposition system at JPO and KIPO.

At EPO, the period for filing opposition(s) begins after granting of the patents and lasts nine months. If successful, the opposition can lead to a revocation of the patent or to its maintenance in amended form. Furthermore, the patentee may request a limitation or a revocation of his own patents.

In the procedure before USPTO, there are two features that may lead to the cancellation of a granted patent: interference proceedings and re-examination. The numbers are not reported because these features are not comparable to the opposition procedure at EPO. In USPTO, the first feature is a priority contest between applicants/patentees seeking to protect the same invention and the second feature may be requested by third parties or by the patentee during the lifetime of a granted patent.

Appeal

An appeal can be filed by any of the parties concerned against a decision taken by the Four Offices. In practice, applicants can appeal decisions to reject an application or revoke a patent, while opponents can appeal decisions to maintain a patent. The procedure is in principle similar for the Four Offices. The examining department first studies the argument brought forward by the appellant and decides whether the decision should be revised²⁹. If not, the case is forwarded to a Board of Appeal, which may take the final decision or refer the case back to the examining department.

²⁹ In JPO, in the case that amendment of the description, claims or drawings has been made at the same time of the submission of an appeal a decision to reject the application, the examiner first re-examines the amendment brought forward by the appellant in order to decide whether the decision can be overturned. If not, the case will be forwarded to the appeal examiners for the final decision.

STATISTICS ON PROCEDURES

Table 4 shows various statistics as average rates and numbers where applicable for 2009 and 2010. Definitions of the various terms are given in Annex 2.

Rates

The examination rate in USPTO is 100 percent, since filing implies a request for examination, whereas in EPO, JPO and KIPO a specific request for examination has to be made. At 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 JPO and KIPO because applicants have substantially more time to evaluate whether to proceed further with the application or not.

The grant rates at KIPO and USPTO increased from 2009 to 2010 and the grant rate is higher at KIPO than at the other Offices. At EPO and JPO the grant rates were similar in 2009 and 2010.

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 Four 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 3.4 million applications were pending in the Four Offices at the end of 2010, in terms of either awaiting request for examination or awaiting, final action in examination.

Table 4: STATISTICS ON PROCEDURES

Progress in the procedure Rates in percentage		Year	EPO	JPO	KIPO	USPTO
Examination		2009	92.1	63.2	79.4	100.0
		2010	92.6	63.2	79.3	100.0
Grant ³⁰		2009	42.1	50.2	60.4	42.0
		2010	42.5	50.2	63.9	45.6
Opposition		2009	4.7	-	-	-
		2010	5.2	-	-	-
Maintenance after opposition		2009	66.8	-	-	-
		2010	67.2	-	-	-
Appeal ³¹	On examination	2009	25.5	24 589	-	6.1
		2009	26.8	28 300	-	5.7
	on opposition	2009	42.7	-	-	-
		2010	46.2	-	-	-
Pendency in the procedure						
Search	Number of pending applications	2009	134 849	-	-	-
		2010	140 946	-	-	-
	Pendency times in search (months)	2009	16.5	-	-	-
		2010	17.0	-	-	-
Examination	Number of applications awaiting request for examination ³²	2009	20 328	870 424	309 586	-
		2010	20 488	816 024	235 004	-
	Number of pending examinations ³³	2009	347 861	716 812	470 245	731 399
		2010	346 449	573 279	517 437	721 831
	Pendency time to first office action (months)	2009	20.2	29.1	15.4	25.9
		2010	21.8	28.7	18.5	24.6
	Pendency time in examination ³⁴ (months)	2009	41.7	35.3	22.2	34.8
		2010	39.1	35.3	24.6	34.9
Opposition	Number of pending applications	2009	5 659	-	-	-
		2010	5 398	-	-	-
	Pendency time in opposition ³⁵ (months)	2009	22.6	-	-	-
		2010	21.4	-	-	-

- = not applicable

³⁰ The USPTO reports on allowance rate.

³¹ For JPO, only numbers are available.

³² For JPO, numbers include the number of abandoned/withdrawn applications.

³³ For JPO, the applications for which the applicants wished to make deferred payment of examination request fee (see Chapter 2) and have been still deferring the payment are not counted in the number of pending examinations for the year 2009.

³⁴ For EPO, the counts relate to pendency until dispatch of the decisions.

³⁵ For EPO, these counts also now relate to pendency until dispatch of the decision.

