

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 in Chapter 3; so most information that appears here goes beyond 2007 to cover 2008. 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 carried out at the Four Offices, rather than on numbers of individual patent rights. The representations are analogous to those of figures 3.5, 3.6 and 3.12.

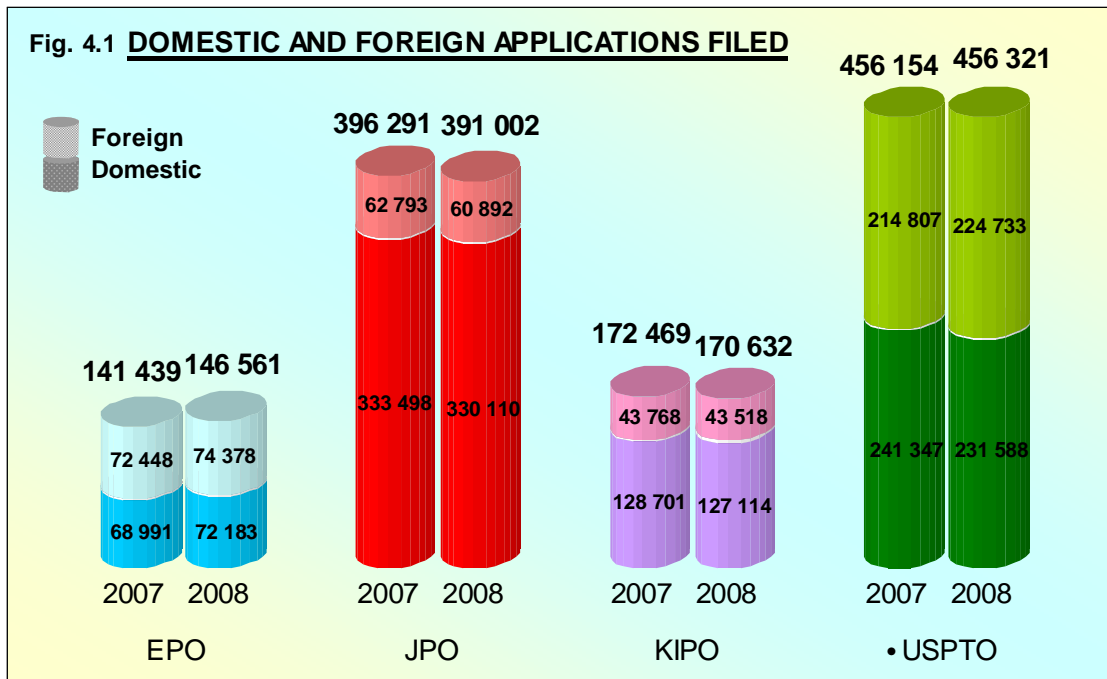
Demand at the Four Offices is demonstrated by counts of the numbers of patent applications that were filed. These counts represent the total of direct national/regional applications filed and PCT applications entering the national/regional phase.

For granted patents, the statistics involve direct, 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.

In previous editions of TSRs, as a bloc of origin Others included R. Korea. Therefore, there has been some adjustment in counts for the "Others" in this report compared with those in the previously issued TSRs.

PATENT APPLICATIONS FILED

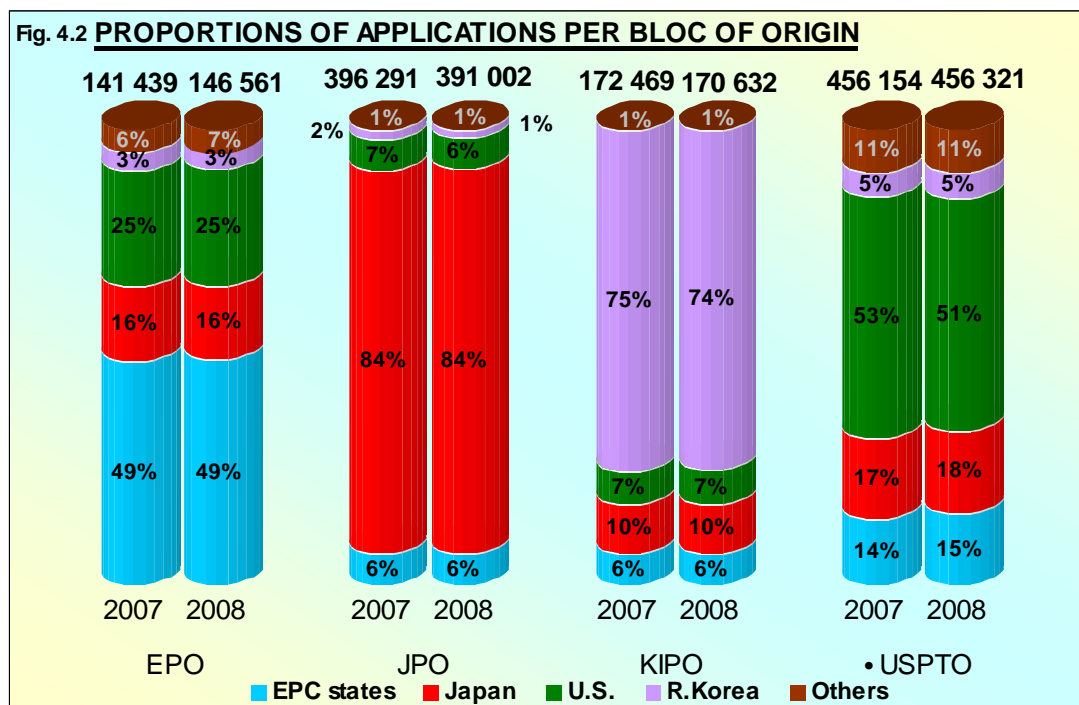
The numbers of domestic (residents of the country) and foreign (non-residents) patent applications filed with each of the Four Offices for the years 2007 and 2008 are shown in Fig. 4.1.



There were a total of 146 561 patent applications filed with the EPO in 2008, which is a growth of 4 percent. The number of patent application filings at the JPO decreased by 1 percent to 391 002. The number of patent application filings at the KIPO decreased by 1 percent to 170 632. USPTO recorded 456 321 patent application filings in 2008, almost the same level as in 2007.

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 relative to total filings at each Office for 2007 and 2008.



Due to the differences in behaviour of the applicants from different countries, 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 2008, an application filed at EPO contained 15.6 claims (18.0 in 2007), one filed at the JPO contained 9.8 claims (10.1 in 2007), one filed at KIPO contained 10.9 claims (11.2 in 2007), while one application at USPTO had 19.3 claims (20.0 in 2007). The relatively large change in the figure for EPO since 2007 is probably due to a change in fee structure for multiple claims introduced on April 1, 2008.

The shares of patent application filings by each bloc of origin are quite consistent for 2007 and 2008. The numbers of domestic filings are approximately equivalent to the numbers of first filings, except at EPO where domestic filings for the EPC states area are mostly subsequent filings that follow earlier first filings at EPC states national offices. At JPO, KIPO and USPTO more than 90 percent of the domestic applications are first filings, while only 30 percent of the domestic applications at the EPO are first filings.

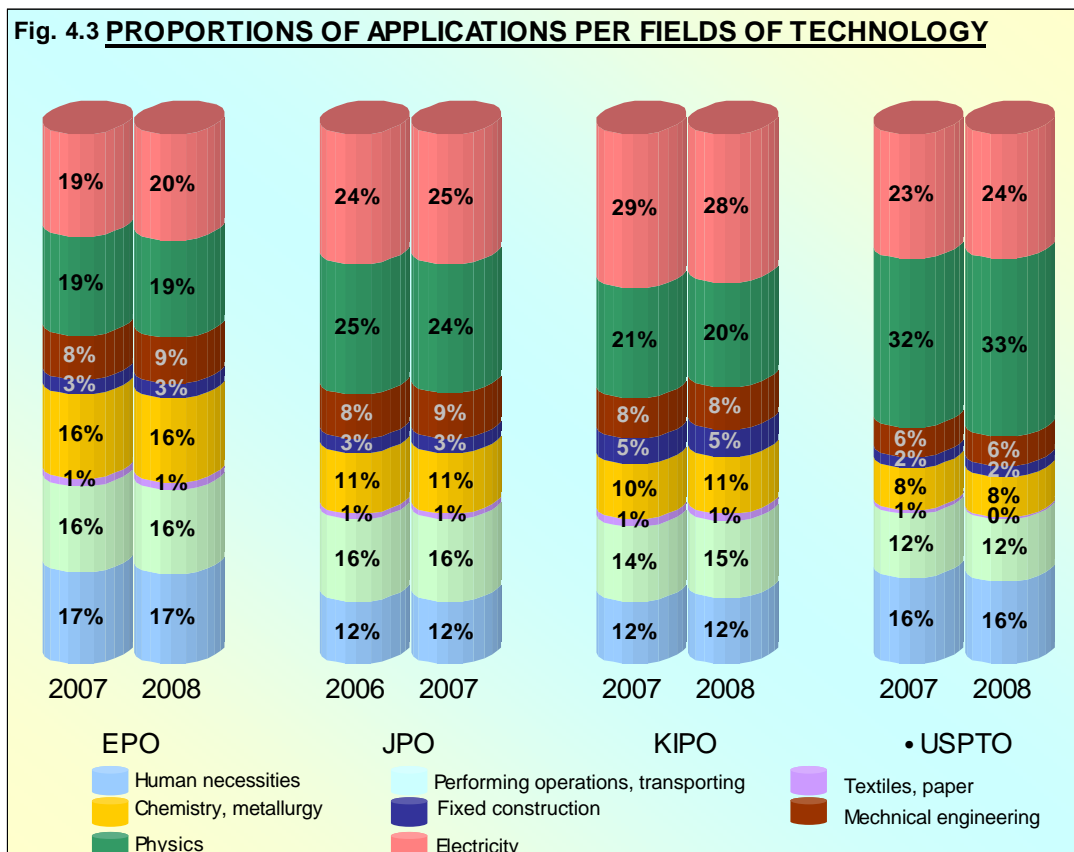
FIELDS OF TECHNOLOGY

Patents are classified by the Four 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.

The classification takes place at a different stage of the procedure in each Office. Data are shown for the EPO, KIPO, and the USPTO for the filing years 2007 and 2008, while for the JPO the breakdown is given for the filing years 2006 and 2007. JPO data for 2007 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).

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. Therefore the technical scope of the USPTO with respect to the IPC may differ from the scope presented by EPO, JPO and KIPO.

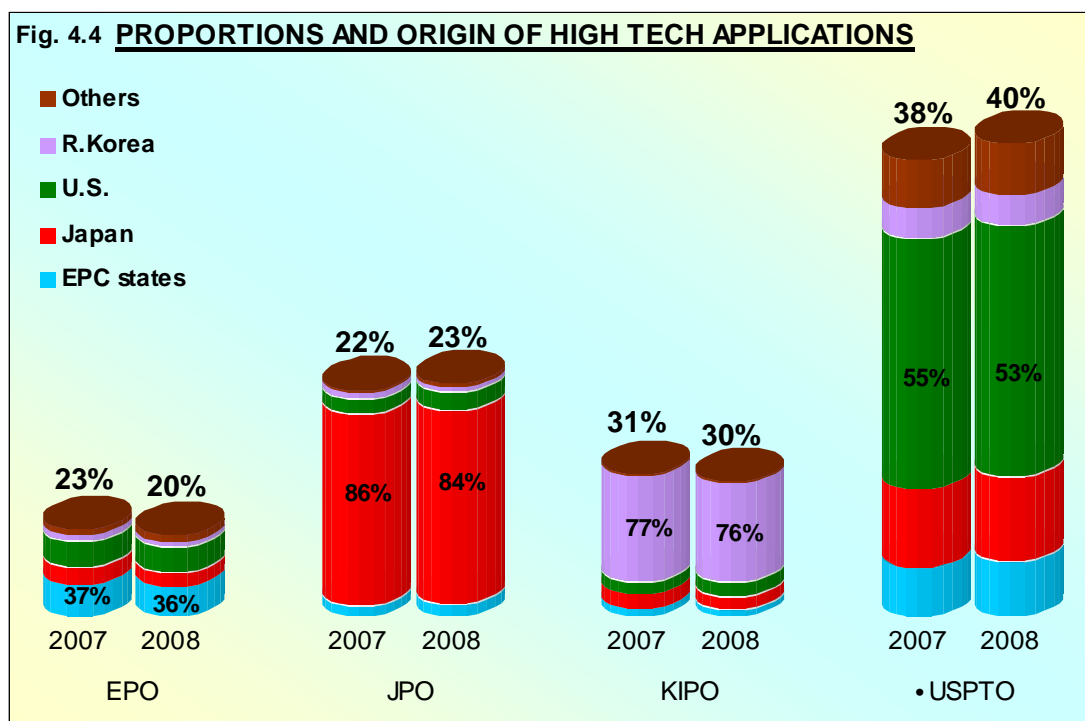
Fig. 4.3 indicates the share of applications by fields of technology at each office. The shares are determined for all applications for which a classification is available.



The IPC does not itself define high technology fields. The Four Offices, however, consider the following as high technology fields:

- Computer and automated business equipment,
- Micro-organism and genetic engineering,
- Aviation,
- Communications technology,
- Semi-conductors, and
- Lasers.

In Fig. 4.4, the proportions of applications in high technology areas are given for each Office in 2007 and 2008, together with the subsidiary breakdowns by origins (with subsidiary percentages given for the domestic region in each case). The height of each bar gives an indication of the number of high technology applications at that office.

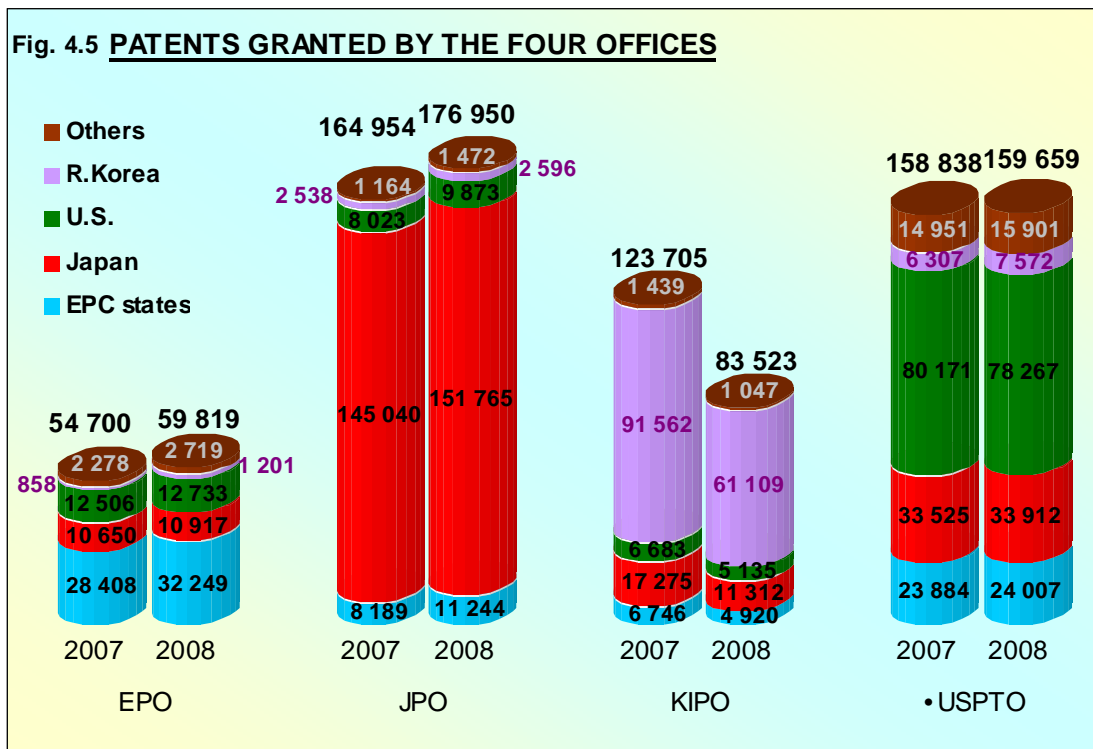


On average 30 percent of the Four Offices applications are filed in high technology areas. The proportions are markedly different between the Four Offices. The high technology areas share is twice as high at the USPTO as at EPO or JPO. The share for KIPO is intermediate and close to the overall average.

While at the other offices, the subsidiary share of domestic applications within the high technology areas is comparable to that in all applications, the domestic subsidiary share is noticeably lower at the EPO.

PATENTS GRANTED

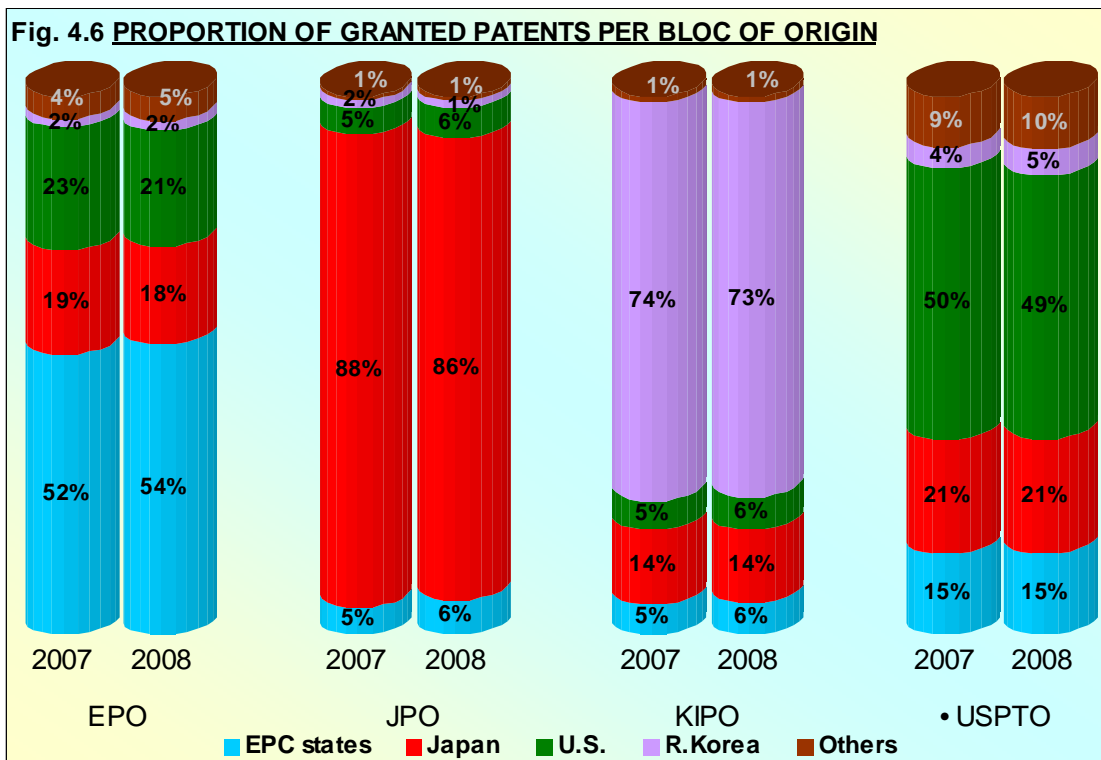
Fig. 4.5 shows the numbers of patents granted by the Four Offices.



Together the Four Offices granted 479 951 patents in 2008, 22 246 less than in 2007. This is an overall decline of 4.4 percent.

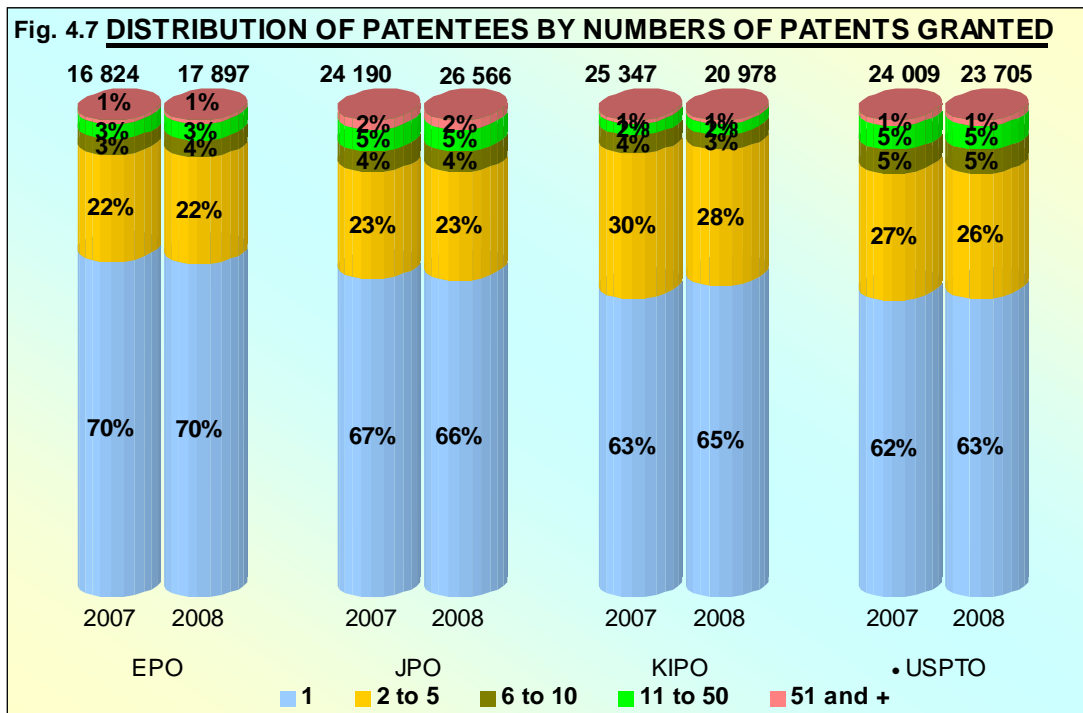
The number of patents granted by EPO, JPO and USPTO increased in 2008, by 9 percent at EPO, 7 percent at JPO and 0.5 percent at USPTO. The number of patents granted by KIPO decreased by 32 percent in 2008. The differences between the Four Offices regarding the absolute numbers of patents granted can 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, which themselves reflect differences in the procedures (see section below on "Four Offices Patent Procedures").

Fig. 4.6 presents the percentage shares of total patents granted by origin.



The shares from the different filing blocs are not far away from those observed for the filings in each Office as presented in Fig. 4.2. However, comparison of the figures shows that the shares by domestic origin within the numbers of patent grants at EPO and JPO are slightly higher than the comparable shares within the numbers of applications filed. Actually, the shares of Japanese origin granted patents are higher than the corresponding shares in applications at all Four Offices.

The breakdown of numbers of patentees by numbers of patents granted is shown in Fig. 4.7.



This diagram shows that the distributions by numbers of grants are highly asymmetric but rather similar for the Four Offices. On average, in 2008 a patentee received 3.3 granted patents at the EPO compared to 6.7 at the JPO, 4.0 at the KIPO and 6.7 at the USPTO.

At the Four Offices, most of the patentees received not more than five granted patents. The proportion of patentees receiving one grant in 2008 is higher at EPO (70 percent) than at JPO (66 percent), KIPO (65 percent) or USPTO (63 percent). The proportion of patentees receiving two to five grants is larger at the KIPO than in the other three Offices. The proportion of patentees receiving six or more grants is lower at EPO (8 percent) and KIPO (6 percent) than at JPO (11 percent) and USPTO (11 percent). In 2008, the maximum number of patents granted to a single applicant was 941 at EPO, 4 739 at JPO, 4 737 at KIPO and 4 169 at USPTO.

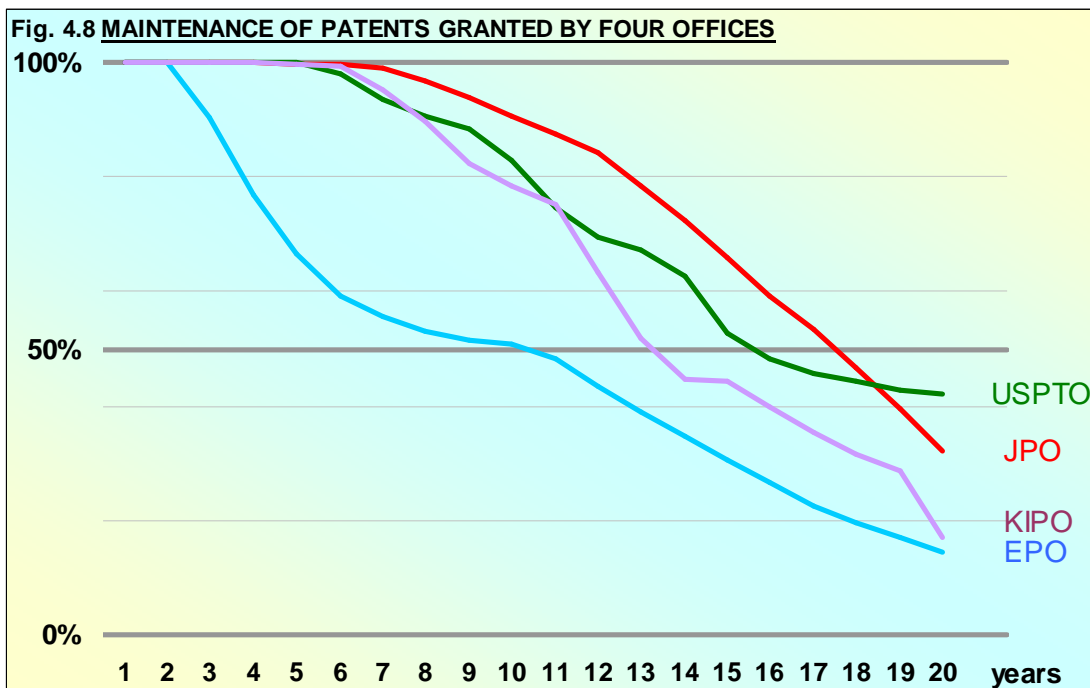
A patent granted by an Office has a maximum term fixed by law. In all Four Offices this is usually a twenty year term from the date of filing the application. In order to maintain the protection right during this period, the applicant has to pay renewal fees, annual fees or maintenance fees in the countries to which the protection pertains. Maintenance systems differ from country to country. At each of the Four Offices, if a renewal fee, an annual fee or maintenance fee is not paid in due time, the protection right expires.

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 paid to the national office of each designated EPC contracting state in which the patent has been registered. The resulting national patents are not necessarily maintained for the same period in each of the 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. Thus, the USPTO data shown below are interpolations between these data points.

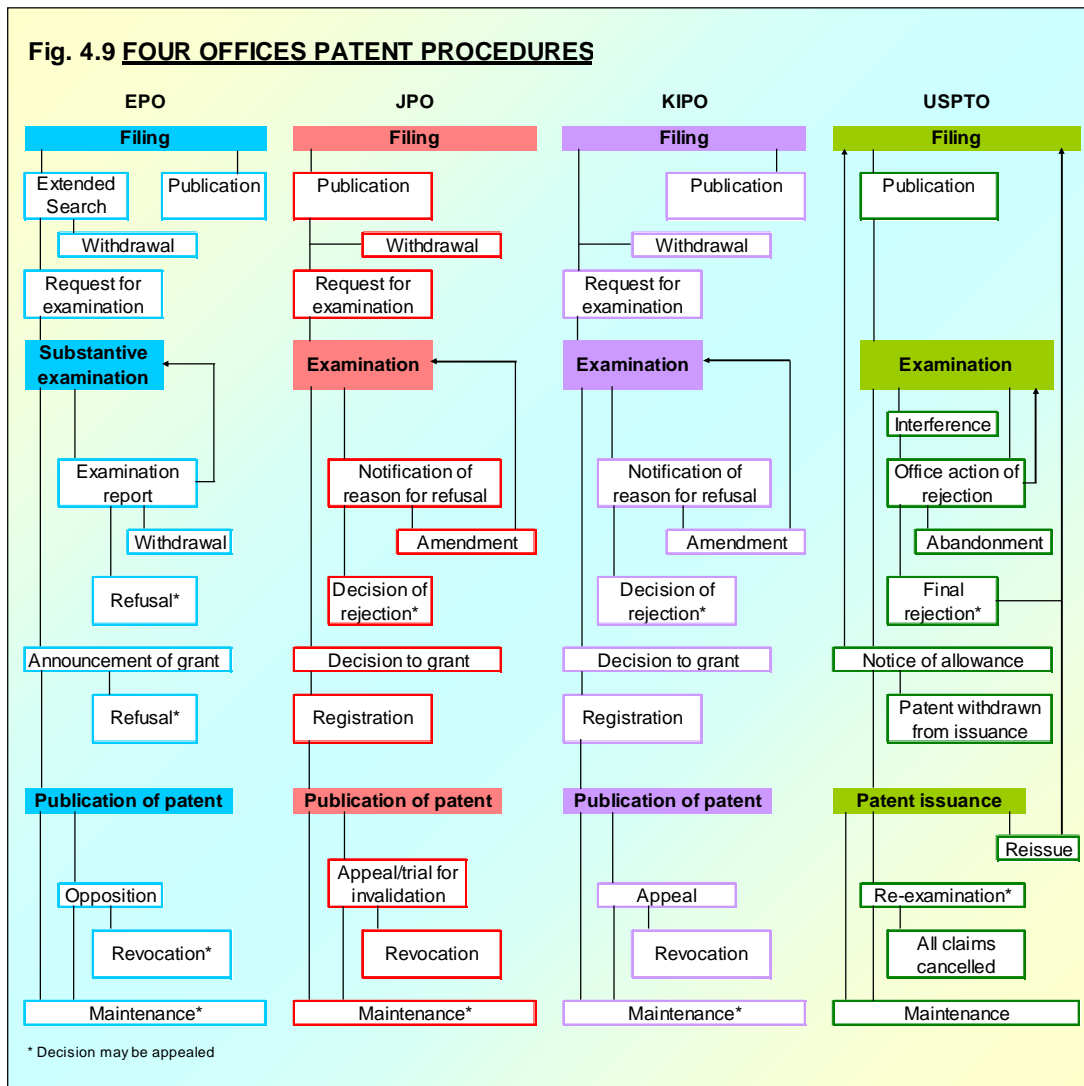
Fig. 4.8 shows the proportions of patents granted by each Office that are maintained for differing lengths of time. It compares the rate of granted patent registrations existing and maintained each patent year starting with the year of application. The EPO proportions represent an average ratio of maintenance in the EPC states.



In Japan, over 50 percent of the patents granted are maintained for at least 17 years compared to at least 10 years for the European patents, 13 years for the R. Korean patents and at least 15 years for the U.S. patents.

PATENT PROCEDURES

The major phases of the grant procedures at the Four Offices are shown in Fig. 4.9, which concentrates on the similarities between offices to motivate comparative statistics to be presented in the remainder of this chapter. 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. Firstly, a search is done in order to establish the state of the art with respect to the invention. The applicant receives a search report accompanied by an initial opinion on patentability. In a second phase, the inventive step and industrial applicability are examined in the substantive examination. In the national procedures before JPO, KIPO or USPTO, the search and substantive examination are undertaken in one phase. The international searches and international preliminary examinations carried out by the Four Offices as PCT authorities are not included in the flow chart.

Filing of a national application with USPTO is taken to imply an immediate request for examination. Filing of a European application with EPO is taken to imply a request for search, but not yet a request for substantive examination. For the latter, a separate request has to be filed no later than six months after publication of the search report. At both JPO and KIPO, where deferred examination systems exist, filing of a national application does not imply a request for examination; this may be filed up to three and five years after the date of filing, respectively.

At KIPO, an applicant can apply for a customer-deferred examination up to six months after the date of the examination request and indicate the preferred date of the deferred examination. An examiner will complete the examination within three months of the preferred date of the deferred examination. The preferred date of the deferred examination should be a date that occurs not less than 18 months after the filing date and not more than five years after the filing date. The first constraint is based on the date on which an application is laid open and the second constraint is based on the deadline for requesting an examination.

Publication

In the Four Offices, the application is to be published, at the latest, 18 months after the date of filing or the earliest priority date. 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 (EPO: Announcement of grant; JPO: Decision to grant; KIPO: Decision to grant; USPTO: Notice of allowance). 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 (EPO: Examination Report; JPO: Notification of reason for refusal; KIPO: Notification of reason for refusal; USPTO: Office action of rejection). 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 (EPO: Intention to refuse; JPO: Decision of rejection; KIPO: Decision of rejection; USPTO: Final rejection) or withdrawn by the applicant (EPO: Withdrawal; JPO: Withdrawal or Abandonment; KIPO: Withdrawal or Abandonment; USPTO: Abandonment). In addition, if no request for examination for an application is filed to the EPO, the JPO or the KIPO within the prescribed period (EPO: six months after publication of the search; JPO: three years from the date of filing; KIPO: five years from the date of filing), 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 (EPO: Publication of patent; JPO: Publication of patent; KIPO: Publication of patent; USPTO: Patent issuance).

Opposition

There is no opposition system at JPO and KIPO.

At EPO, the period for filing opposition(s) begins after granting of the patent rights and lasts nine months. If successful, the opposition can lead to a revocation of the patent or to its maintenance in amended form.

In the procedure before USPTO, there are two features that may lead to the cancellation of a granted patent: interference proceedings and re-examination. 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 revised. 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.

In JPO and KIPO, generally appeal examiners examine the supplementary reasons brought forward by the appellant and decide whether the decision can be overturned. However, in the case that amendments of the description of the claims or the drawings have been made within 30 days from the filing date of an appeal against a decision to refuse 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

The 2007 and 2008 values of the basic procedural statistics at the Four Offices are shown in Table 4 (below). Definitions and further explanations of the statistics are given in Annex 2.

Definitions differ for the Four Offices. This should always be born in mind when seeking to make comparisons between the Four Offices based on the information provided.

Rates

The examination rate in USPTO is 100 percent, since filing implies a request for examination in the USPTO procedure, whereas in EPO, JPO and KIPO a specific request for examination has to be made. At EPO the growing proportion of PCT applications in the granting procedure led to an increase of the examination rate, as almost all of them proceed to examination. The examination rate is lower at JPO and KIPO because applicants have substantially more time to evaluate whether to maintain the application or not.

The grant rate is higher at KIPO than at the other offices.

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. 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, for instance a request for examination, or a response to actions communicated by the office.

From 2007 to 2008, the total number of pending applications (at whichever stage) increased at the EPO, KIPO and USPTO. Altogether more than 4.4 million applications were pending in the Four Offices at the end of 2008 (-0.3 percent compared to 2007).

Table 4: STATISTICS ON PROCEDURES

| Progress in the procedure | | Year | EPO | JPO | KIPO | USPTO |
|--|---|------|---------|-----------|---------|---------|
| Rates in percentage | | | | | | |
| Examination | | 2007 | 94.5 | 66.2 | 83.9 | 100 |
| | | 2008 | 93.5 | 65.6 | 83.4 | 100 |
| Grant ¹ | | 2007 | 50.4 | 48.9 | 73.6 | 48.7 |
| | | 2008 | 49.5 | 50.2 | 67.6 | 44.0 |
| Opposition | | 2007 | 5.2 | - | - | - |
| | | 2008 | 5.2 | - | - | - |
| Maintenance after opposition | | 2007 | 70.4 | n.a. | - | - |
| | | 2008 | 67.9 | n.a. | - | - |
| Appeal ² | On examination | 2007 | 32.9 | 33 077 | 20.6 | 2.2 |
| | | 2008 | 29.7 | 31 483 | 32.5 | 3.8 |
| | on opposition | 2007 | 42.3 | - | - | - |
| | | 2008 | 28.7 | - | - | - |
| Pendency in the procedure | | | | | | |
| Search | Number of pending applications | 2007 | 124 000 | - | - | - |
| | | 2008 | 136 021 | - | - | - |
| | Pendency times in search (months) | 2007 | 17.6 | - | - | - |
| | | 2008 | 18.9 | - | - | - |
| Examination | Number of applications awaiting request for examination | 2007 | 19 517 | 1 639 081 | 244 332 | - |
| | | 2008 | 18 051 | 1 500 879 | 289 835 | - |
| | Number of pending applications | 2007 | 318 298 | 888 198 | 446 295 | 763 493 |
| | | 2008 | 339 043 | 868 025 | 470 245 | 809 070 |
| | Pendency time to first office action (months) | 2007 | 22.8 | 26.7 | 9.9 | 24.9 |
| | | 2008 | 19.0 | 28.5 | 12.1 | 25.7 |
| Pendency time in examination ³ (months) | 2007 | 42.8 | 32.4 | 15.8 | 32.0 | |
| | 2008 | 46.9 | 33.9 | 17.4 | 33.5 | |
| Opposition | Number of pending applications | 2007 | 5 822 | - | - | - |
| | | 2008 | 5 885 | - | - | - |
| | Pendency time in opposition ⁴ (months) | 2007 | 26.4 | - | - | - |
| | | 2008 | 23.9 | - | - | - |

n.a." not available

- = not applicable

¹ The USPTO reports on allowance rate.² For JPO, only numbers are available.³ For EPO, the counts now relate to pendency until dispatch of the decisions, instead of pendency up to the examiner's decision as previously.⁴ For EPO, these counts also now relate to pendency until dispatch.