A Guide to International Patent Protection

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ABSTRACT

When approaching the international production, marketing, distribution, and sales of a patented product or process, several key factors must be carefully identified and evaluated. These factors include business and legal issues. Business issues include market location, market size, presence (or absence) of competitors, emerging markets as opportunities, life cycle of the product, and taxes. Legal issues include the presence (or absence) of trade secrets in the patent application, the status of patent applications in foreign countries, the level of patent protection (both law and enforcement) in foreign countries, and statutes, such as novelty requirements, in prospective foreign markets. Having considered a full range of business and legal factors, options for international patent protection can then be evaluated and appropriately selected, according to the business goals and financial resources of the organization. Options include national, regional, and international patent applications, each having its own advantages and disadvantages. This overall strategy can be effectively employed to maximize either business or humanitarian objectives.

1. BASICS OF INTERNATIONAL FILING STRATEGIES

You have a researcher who has developed an exciting invention, and you have already decided to file a patent application in the United States. Now you need to decide if you should also file patent applications abroad, and if so, where. The cost of filing patent applications in every country in the world can add up quickly, as there are about 200 countries where some degree of patent rights are available. Therefore, you will need to be selective as to where you will file patent applications.

Many factors need to be considered when deciding where to file foreign patent applications. Some factors relate to the business development or marketing of the invention, and other factors relate to the legal status of the invention. For example, will the invention be considered "novel" in the countries where you want to file? Do the countries permit patenting the type of technology your inventor has developed? Some countries do not offer patent protection for computer software, for instance. Another factor to consider is whether you will be able to enforce your patent once you receive it. The degree of judicial respect that patents are given in different countries varies considerably. Some countries have laws that allow a party to obtain a patent but have almost no enforcement mechanisms. International treaties such as the North American Free Trade Agreement (NAFTA) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) should help to make enforcement easier and remedies for infringement more adequate.

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Specifically, here are some of the business and legal questions to consider when planning a foreign patent filing strategy:

- **How big is the market for your invention in a particular country?** If the market for the invention is a relatively small one, it may not be worth the expense of filing an application in that particular country. A benchmark that some companies use is US$5 million in revenue per year for the invention.
- **How big is the market for your invention in a particular region?** Many inventions are region-specific. For example, if your invention is a transgenic blueberry plant, you likely do not need to consider filing in the region of Equatorial Africa, since blueberry plants do not grow there. Also, it may be that a patented product has a major market in a handful of countries and only a minor amount of interest elsewhere. Further, covering the major markets may provide an advantage in economies of scale. If most of your potential customers are in countries where you have patent protection, you may have such strong manufacturing and cost advantages that you do not need to have patent coverage in less-important countries.
- **Where are the major manufacturing centers for you and for your competitors?** Certain regions of the world are centers of manufacturing for different industries. For example, the Far East economies of Singapore, Hong Kong, Korea, Indonesia, Thailand, the Republic of China, China (People's Republic of China), and Japan are important manufacturing countries for the computer and semiconductor industries.
- **Where are the emerging markets?** Developing countries may be strengthening their patent laws and therefore make patents more valuable in the near future. For example, China has recently revised its patent laws and should be considered for certain inventions. There are still many problems in enforcing patents in China, but in the long run, the size of the market could make up for the short-term difficulties. As another example, Vietnam's recent accession to the World Trade Organization (WTO) will necessitate tangible progress towards TRIPS provisions implementation.[1] An important aspect of this will be strengthening patent laws and their enforcement.
- **Would a defensive patent be valuable?** It can be worthwhile filing in a particular country, even if a market is small, if you know that a major competitor is doing business or has a manufacturing plant in that country. You can possibly get the competitor to license the new technology from you or at least prevent the competitor from commercializing your invention in that country.
- **Do you have limited time?** Some technologies only have a life span of a few years, and you can expect to get income from licensing fees only in the early years of a patent. Other technologies are in development for a long period of time and are only economically valuable in the last years of the patent. It can take ten years to get a Japanese patent application issued. Even though you might be able to successfully sue an infringer and get retroactive royalties back to your filing date, by then the competitor will already be in the market. Also, you often cannot get a restraining order to make the competitor stop infringing until after the patent has actually issued.
- **Do you have limited funds to spend on foreign patent protection?** It may be more worthwhile to carefully pick just a few countries and spend all your money on getting well-prosecuted, broad patents in those countries rather than getting narrow patents in a lot of countries. Another strategy would be to concentrate all your efforts on the key features of your technology that competitors will need in order to be competitive.
- **What is the status of a patent application in the foreign country of interest?** In some countries, such as Japan, published applications are respected almost as though they

were already-issued patents and can provide licensing opportunities. This local custom can make an unissued patent application valuable even if the national patent office has a reputation for letting patent applications pend for a long time.

- **Would your invention be considered novel in your country of interest?** Most countries require that an invention be undisclosed, or *novel*, as of the effective filing date of the application. Novelty requirements vary considerably from country to country. Some countries require *absolute novelty* (which, in practical terms, means that a patent application must be filed before *any* public disclosure), while other countries give inventors or applicants grace periods, following disclosure, for filing patent applications.
- **Where are your competitors filing their patent applications?** Place of filing can be indicative of future business plans. You may want to file in the same countries your competitors are filing in, even if you do not initially plan to manufacture or sell your invention in those countries.
- **Are there trade secrets in your application?** Most foreign applications (and most U.S. patent applications filed on or after 29 November 2000) are published about 18 months after their priority date. The invention may be of more value when kept as a trade secret for a potentially unlimited time than when disclosed in a patent, which has a limited life span.
- **Can holders of patent rights realize tax advantages in foreign countries?** Patents can be bundled with a technology transfer license to transfer the situs of taxation, allowing expatriation of funds with less tax impact.

2. OPTIONS FOR FILING INTERNATIONAL PATENT APPLICATIONS

2.1 *Overview*

Once a decision has been made to file a patent application, there are three choices for filing in a foreign country: (1) file directly in the patent office of the country of interest, (2) file in a regional patent office, or (3) file using the procedures set forth in the Patent Cooperation Treaty (PCT).[2] These filing options are discussed below. Unlike in the United States, applications in most other countries are filed in the name of the assignee(s), not the inventor(s).

2.1.1 *National applications*

Prior to 1 June 1978, directly filing a patent application in a foreign country's patent office was the primary way to obtain foreign patent protection. Applicants often would rely on the rights granted under the Paris Union Convention (that is, for member nations of the Paris Convention) for a right of priority.[3] This right of priority allows a resident of a country that is a member of the Paris Convention to first file a patent application in any member country, and then, within 12 months of the original filing date, to file patent applications for the same invention in any of the other member countries. By treaty, the later applications receive effective filing dates that are the same as the original filing date. In other words, they would be treated as though they had been filed on the same day as the first application, so long as they were filed within the 12-month period.

Applicants who file a subsequent application in a country that is a member of the Paris Convention will not be given the priority of their original application. If possible, applicants should consider filing any applications in nonmember countries on the same day as their first Paris Convention application.

It should be noted that even though the Republic of China is not a member of the Paris Convention, patent applications filed in the United States may have priority over applications filed in the Republic of China because of a bilateral agreement between the two countries (effective 10 April 1996). The priority period is 12 months for inventions and new utility model applications; the period is six months for new design applications. Various requirements must be met in order for priority to be granted. For example, priority must be claimed on the filing date of the application filed in the Republic of China,

the applicant of that country's application must be the same as the applicant on the U.S. application, and the invention disclosed in the Republic of China application must be the same as that of the corresponding U.S. application.

A major disadvantage of filing directly in individual countries is that such a strategy can be very expensive, as applicants must pay the individual national government filing fees, patent attorney fees, foreign associate fees, and potential translation costs early in the patent program.

2.1.2 *Regional applications*

A potential alternative to filing directly in each country of interest is to file in a regional patent office. These patent offices have come into existence through international treaties. Examples of regional patent offices are the European Patent Office (EPO),[4] the African Regional Industrial Property Organization (ARIPO),[5] the African Intellectual Property Organization (OAPI),[6] and the Eurasian Patent Convention (EA).[7]

Often, the EPO is the most commercially important of the regional patent offices, so its procedures will be discussed in more detail. Use of the EPO allows for a uniform procedural system for filing a patent application in member European countries. The cost of filing a patent application in the EPO is about US$10,000. This figure includes the EPO filing fees, the U.S. attorney fees, and the fees charged by the EPO associate. The EPO does not allow U.S. patent attorneys to communicate directly with it, so a European patent attorney, or agent qualified to practice in the EPO, must be hired for certain aspects of the filing and prosecution process.

The application is reviewed by an EPO examiner based on the investigation of the prior art in light of the claims. The examiner must consider a PCT Chapter II examination report, if applicable. (The PCT procedure is discussed in further detail below). The EPO issues an *official action* statement. The U.S. patent attorneys respond to the official action through their European associates. After successful examination, the application is granted as a European patent. It should be noted that interim protection can be available during pendency by filing a translation of claims in each designated country.

An applicant, however, does not gain any enforceable patent rights until the European patent is registered, or "validated," in each of the countries in which protection is sought. Registration can be expensive because in addition to government issue fees and translation fees, further fees for the European associate and local agents in each country will be incurred. Once the European patent is validated, annual maintenance fees, or *annuities*, will be due periodically in each of the countries. Maintenance fees vary considerably from country to country. For example, annuities in the United Kingdom and France can total about US$7,000, whereas in Germany they can total about US$18,000, over the life of the patent. Of course, these are estimates and are subject to change.

2.1.3 *PCT applications*

The Patent Cooperation Treaty (PCT) is an international agreement that provides a unified and simplified procedure for filing multiple foreign patent applications via a single initial application. Most industrialized countries are members of the PCT, including many countries that are also members of different regional patent offices. Please note that this list is constantly changing as new countries join the PCT. All PCT member countries are bound by the Paris Convention; however, not all Paris Convention member states are PCT member countries.[8] If you have questions as to whether certain countries are PCT member countries, you may check the most recent PCT newsletter, on the Web, or contact the PCT Help Desk.[9]

PCT Rule 4.10 enables applicants to claim priority of an earlier-filed application in, or for, a member country of the WTO[10] that is not party to the Paris Convention.

The procedures set forth in the PCT allow applicants to obtain and/or preserve the priority date of the first-filed application in any of the PCT member countries, including the United States. An applicant files a copy of the application in a PCT office and pays the PCT filing fee. This filing of the patent application may be the

first time it has been filed anywhere, or it can be an application that claims priority over an earlier-filed application, so long as it is filed within 12 months of the initial filing date.

Along with a copy of the application, the applicant files a *PCT request*. When the request is filed, the presumption is that the applicant would like to designate all available countries or regional offices, thereby reserving the right to, at a later time, file national (or regional) applications claiming priority to the first-filed application. In Box No. V of the PCT request form, it is stated that "*The filing of this request constitutes, under Rule 4.9(a), the* ***designation of all Contracting States*** [emphasis added] *bound by the PCT on the international filing date, for the grant of every kind of protection available, and, where applicable, for the grant of both regional and national patents.*" In other words, priority to the first-filed application is automatic and all-inclusive, with all possible designations. The PCT request form, however, provides for the "de-designation" of Germany, Korea, Russia, and Japan (for example, if applications have already been filed in these countries). It is critical to keep in mind that if patent protection is desired in a non-PCT country, an applicant must file directly in that country.

When filing an international application that relies on the Paris Convention one-year grace period for a priority date, the time period for filing the foreign application is calculated from the date of the *first-filed national application*. For most U.S. applicants, the first-filed national application is a regular nonprovisional U.S. application. It is important to note, however, that if a U.S. provisional application is filed as the first-filed application, the one-year grace period begins with the filing of this provisional application and not with the filing of the "conversion" regular nonprovisional U.S. application that claims priority over the provisional application. Thus, if a provisional application is filed, the conversion date for the nonprovisional U.S. application and the Paris Convention bar date for the filing of international applications fall *on the same day*. Therefore, the international application *and* the U.S. regular application need to be filed on the same date. The applicant does not get an additional year beyond the regular U.S. application in which to file its international applications.

Prosecution of a PCT application has two parts. Chapter I involves the initial processing of the application, a search of the prior art, and publication of the application and search results. Chapter II involves an optional international preliminary examination. (Figures 1 and 2)

Once an applicant decides to file a PCT application, the applicant enters Chapter I by filing a PCT *office request*, a copy of the application, and the PCT filing fee. Application in most countries is made in the name of the owner of the invention, not of the inventor, as in the United States. The PCT filing of the patent application may be the first filing, or a PCT application that claims priority to an earlier-filed application can be filed, so long as it is filed within 12 months of the priority date. Either the U.S. Patent and Trademark Office (PTO) or the International Bureau of the World Intellectual Property Organization (WIPO) can act as PCT receiving offices for applications on inventions by applicants who are either nationals or residents of the United States. Either the PTO or the European Patent Office can be designated as the searching authority.

The application is then reviewed by an authorized examiner, and a prior art search is performed. The examiner reviews patents and publications from around the world and lists those that are determined to be relevant prior art, with respect to the claims of the application. Within 16 months of the priority date, a *preliminary search report* is issued. The applicant then has an opportunity to amend the claims in the application. After 18 months from the priority date, the application is published.

Under previous PCT procedure, within 19 months of the priority date, applicants were required to choose to enter PCT Chapter II, enter the national stage (that is, file the application in at least some of the countries or regional offices designated), or abandon the application. If the applicant decided to enter PCT Chapter II, the filing of a *demand* for a preliminary examination was required and a Chapter II filing fee would be assessed. However, the Article 22(1) *time limit* for filing national-stage applications *without the*

need to file a demand has been changed from 20 or 21 months to 30 or 31 months. This change went into force on 1 April 2002. Applicants should recognize, however, that some PCT member countries maintain reservations regarding this new timing rule and should remain cautious.[11]

Applicants may file a preliminary amendment with the demand. When that has been done, the PCT examiner prepares a written opinion that should be received by the applicant within 22 months of the priority date. The applicant has an opportunity to amend the claims and respond to the examiner's opinion during the period between 22 and 28 months following the priority date. A final PCT international preliminary examination report is published approximately 28 months from the priority date. PCT Chapter II is closed at 30 or 31 months from the priority date.

Normally, just before the 30- or 31-month mark, the applicant again must decide whether to file applications in at least some of the designated countries, or regional offices, or to abandon the application. The applicant can choose to file the application in some or all of the countries originally designated. The applicant, however, cannot add to the list of countries originally designated. Because the PCT application does not, in itself, result in the granting of any national patent rights, the applicant must initiate the national stage in each of the national offices where patent protection is desired. At this point, the applicant, via a local attorney or agent, files a copy of the international application, a translation of the application (if necessary), the national fee, and any other documentation required by the national office. The remainder of the prosecution is similar to that discussed above, when an application is filed directly in a national office. The national offices, however, do give deference to the PCT international preliminary examination report and may not conduct a further search.

It should be noted that it is possible at any time during the PCT process to file one or more national-stage applications. It is not necessary to wait until the end of Chapter I or Chapter II to file a national or a regional application.

For U.S. applicants using the PCT procedure and wanting to select the EPO to perform the prior art search, the EPO has limited the categories it will search and/or examine. The EPO will not search *or* examine applications in the areas of business methods and related inventions. "*[T]he EPO is no longer a competent [International Preliminary Examining Authority], within the meaning of PCT Article 32(3), for international applications filed by U.S. residents or nationals in the* [U.S. Patent and Trademark Office] *or [International Bureau] as a Receiving Office where the corresponding demand is filed with the EPO on or after 01 March 2002, and where the application contains one or more claims directed to the fields of business methods.*"[12]

In the 1990s, the EPO had indicated that it would search inventions in the area of telecommunications, but would not examine these applications. This meant that U.S. applicants needed to have all telecommunications inventions examined by the U.S. Patent Office, even if the EPO had performed the search. The EPO, however, resumed its competence as an international preliminary examining authority, effective 1 July 2004, for demands filed by U.S. residents or nationals on or after 1 July 2004, for international applications filed by nationals or residents of the United States, where the application contains one or more claims relating to the field of telecommunications.[13]

Similarly, in the field of biotechnology, although the EPO had earlier announced that it would neither search nor examine applications in that area, and that such applications were required to designate the U.S. Patent Office as the searching and examining authority, the EPO resumed its competence as an international searching authority and international preliminary examining authority, effective 1 January 2004, for international applications filed by nationals or residents of the United States, where the application contains one or more claims relating to the field of biotechnology.[14]

2.2 *Advantages and disadvantages of different application strategies*

2.2.1 *Direct national filings*

If an applicant has only a small number of countries where she or he wants to file and chooses to

actively pursue prosecution in only those countries, the applicant can avoid the costs associated with the intermediate steps of filing in the PCT or regional patent office prior to filing nationally. Some countries conduct no, or limited, examination.

Disadvantages to direct national filing are that (1) each application will be independently examined (no deference given to a prior favorable review in a different country), and (2) government filing fees and translation costs will be due early in the patenting process.

2.2.2 *Direct regional filings*

With direct regional filings, applicants may be able to avoid some translation costs (for example, the Eurasian Patent Convention requires applications to be filed in Russian, but no translations into different languages will be required by the various countries after grant of a Eurasian patent). Another advantage to direct filings is that substantive examination of the regional patent in each of the designated countries is no longer necessary. This makes direct regional filing especially cost-effective if protection is desired in a number of member countries, since the single regional examination replaces national examinations performed by each member country.

If obtaining protection in only a few member countries is desired, it may be less expensive to file applications in each country individually, thus avoiding costs associated with the intermediate steps of first filing in the regional patent office.

2.2.3 *PCT filings*

PCT filings preserve future foreign patent rights and permit an applicant to delay national entry into PCT member countries for up to 30 or 31 months from the priority date. This delay period may provide opportunities for further market analysis, obtaining a licensee or business partner for the invention, and obtaining a preliminary examination report regarding the issues of novelty, inventive step, and industrial applicability of the claimed invention.

Ultimately, the same costs for national filing or registration (and possible further national prosecution), patent attorney fees, local associate fees, and translation costs, if appropriate, will be incurred just as they would if the national stage was entered directly. Also, the additional intermediate costs associated with the filing and prosecution of the PCT application will be incurred. Further, the countries of interest must be members of the PCT.

3. POSSIBLE INTERNATIONAL FILING PLANS

The selected international filing strategy will depend on the potential importance of the invention and other business and legal considerations. The following are examples of filing strategies in a variety of circumstances.

3.1 *Invention has immediate international market potential*

1. File application in the United States; expedite obtaining a foreign filing license from the U.S. Patent Office.
2. After receipt of a foreign filing license, file in countries of interest that are not members of the Paris Convention.
3. File a PCT application designating all PCT countries within three months after the U.S. filing.
4. Within 12 months after the U.S. filing date, pay designation fees for desired countries, and proceed with the PCT prosecution.
5. Within 12 months after the U.S. filing date, file national applications in non-PCT countries that are Paris Convention countries.

3.2 *Invention has international, but not global, market potential*

1. If it is known ahead of time which countries have market potential, one could:
   a. File a PCT application designating countries of interest, including the United States. If filing in any Paris Convention nonmember countries is desired, obtain a foreign filing license, and file applications upon receipt of the foreign filing license.
   b. Within 12 months after the PCT filing date, pay designation fees, and proceed with the PCT prosecution.

c. Within 12 months after the PCT filing date, file national applications in non-PCT countries that are Paris Convention countries.

2. If it is not known which countries may be of interest at the initial filing date, one could:
   a. File a U.S. application (and obtain a foreign filing license if interested in any countries that are not members of the Paris Convention).
   b. Within 12 months after the U.S. filing date, file a PCT application designating EPO, Japan, Canada, and any other PCT countries of possible interest.
   c. Within 12 months after the U.S. filing date, file national applications in non-PCT countries that are Paris Convention countries.

3.3 *Applicant is interested only in NAFTA countries*

1. File a U.S. application.
2. Within a one-year grace period, file an application in Canada and Mexico. (File in Canada within one year from any disclosure by the inventor.)

3.4 *Bars to patentability in foreign countries*

Most countries require that an invention be "new or novel" in order for the inventor or applicant to obtain a patent for the invention. The definition of *novelty* varies considerably among the different countries of the world. Some countries have a requirement of absolute novelty, that is, the invention cannot have been described orally or in writing, anywhere in the world, or have been sold, used, and so forth, prior to the filing or priority date. Other countries have a requirement of relative novelty. For example, relative novelty can mean that the invention must not be known in the particular country or described in a written document anywhere in the world (but foreign oral disclosures may not destroy novelty). Also, a country might give inventors or applicants a grace period in which to file their patent application after they, or a third party, disclose the invention.

Under Chapter II of the PCT, a claim not disclosed by prior art is considered to be novel. The relevant prior art is anything made available to the public, anywhere in the world, by means of a written disclosure, drawings, or other illustrations, prior to the relevant date (filing date of the first-filed patent application or the filing date of the PCT application).

The European Patent Convention (EPC) has a more-restrictive view of what is new. Under the EPC, an invention is considered to be new if it does not form a part of the *state of the art*. The state of the art includes everything made available to the public by means of written or oral description, by use, or in any other way, before the effective date of filing of the European patent application or a patent application from which the European application claims priority. Additionally, the content of European patent applications that were filed prior to the priority application, but published after the priority date, are also part of the prior art for novelty purposes.

There are many variations as to what constitutes novelty in a particular country, and these national definitions can change. Therefore, it is highly advisable to inquire of a local patent attorney or agent as to the current novelty requirements for a given country.

4. CONCLUSIONS

When properly managed, international patent protection can afford many strategic and economic advantages for an organization, as it seeks to optimize value in its inventions. However, implementation of such a patent-portfolio-management strategy requires careful planning, coherent organization, and a thorough knowledge of an invention's potential. For example, critical considerations include market potential (both in terms of monetary and geographical factors), the presence or absence of competitors, and the overall patent protection regime (in terms of laws and enforcement) in the various nations or regions where the invention might be used, sold, produced, or marketed. Having carefully weighed these considerations, options for patent protection can then be evaluated. For example, patent

applications can be filed within national (for example the U.S. Patent Office), regional (for example, the EPO), or international systems (for example the PCT), each with advantages and disadvantages, depending on the objectives and resources of the organization. Whatever course is taken, coherent planning is essential, and a thorough knowledge of all relevant parameters is fundamental. Finally, it is important to remember that such an overall strategy can be effectively employed to maximize either business or humanitarian objectives. ■

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1 Vietnam became the WTO's 150th member following a decision by the General Council, on 7 November 2006, to approve the southeast Asian country's membership agreement. More information is available at www.wto.org/english/thewto_e/acc_e/a1_vietnam_e.htm.

2 www.uspto.gov/web/offices/pac/dapp/pctstate.html. See, also in this *Handbook*, chapter 10.7 by AM Schneiderman.

3 Listings of states party to the PCT and the Paris Convention and Members of the World Trade Organization can be found at www.wipo.int/pct/en/texts/pdf/pct_paris_wto.pdf.

4 A listing of European Patent Organisation (EPO) member states can be found at www.european-patent-office.org/epo/members.htm.

5 A listing of members of the African Regional Intellectual Property Organization (ARIPO) can be found at www.aripo.org/articles.php?lng=en&pg=14.

6 A listing of members of the African organization of the Intellectual Property (OAPI) can be found at www.oapi.wipo.net/en/OAPI/historique.htm.

7 Web site of the Eurasian Patent Organization Office (EAPO): www.eapo.org/index_eng.htm.

8 See *supra* note 3.

9 The newsletter is available at www.wipo.int/patentscope; to reach the help desk, call +1-703-305 3257 (United States) or +41-22-338 8338 (Switzerland).

10 See *supra* note 3.

11 Time Limits for Entering National/Regional Phase under PCT Chapters I and II can be found at www.wipo.int/pct/en/texts/pdf/time_limits.pdf.

12 Patent Cooperation Treaty (PCT) Information. European Patent Office as Searching and Examining Authority. www.uspto.gov/web/offices/com/sol/og/patpcti.htm.

13 Ibid.

14 Ibid.

Figure 1: Overview of International Patent-Protection Procedures

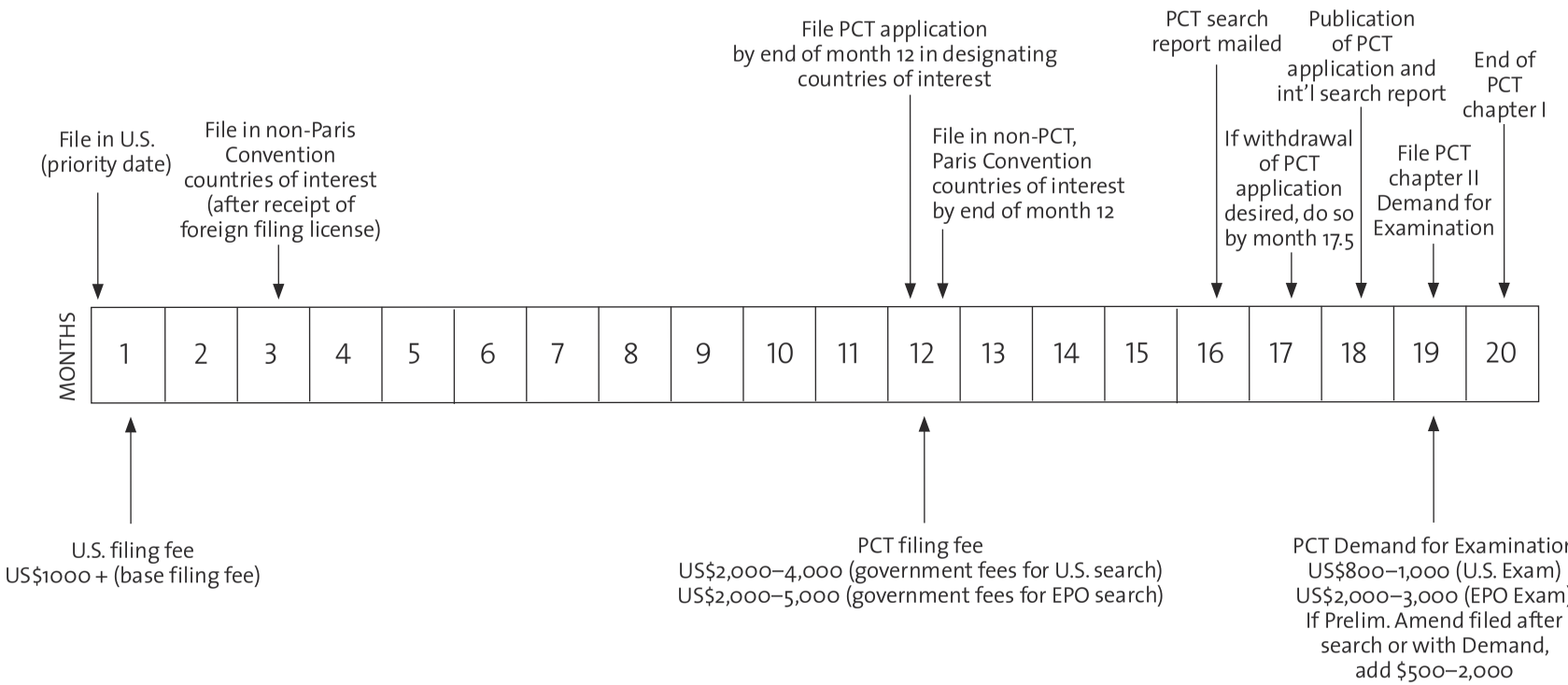


Figure 1 (continued)

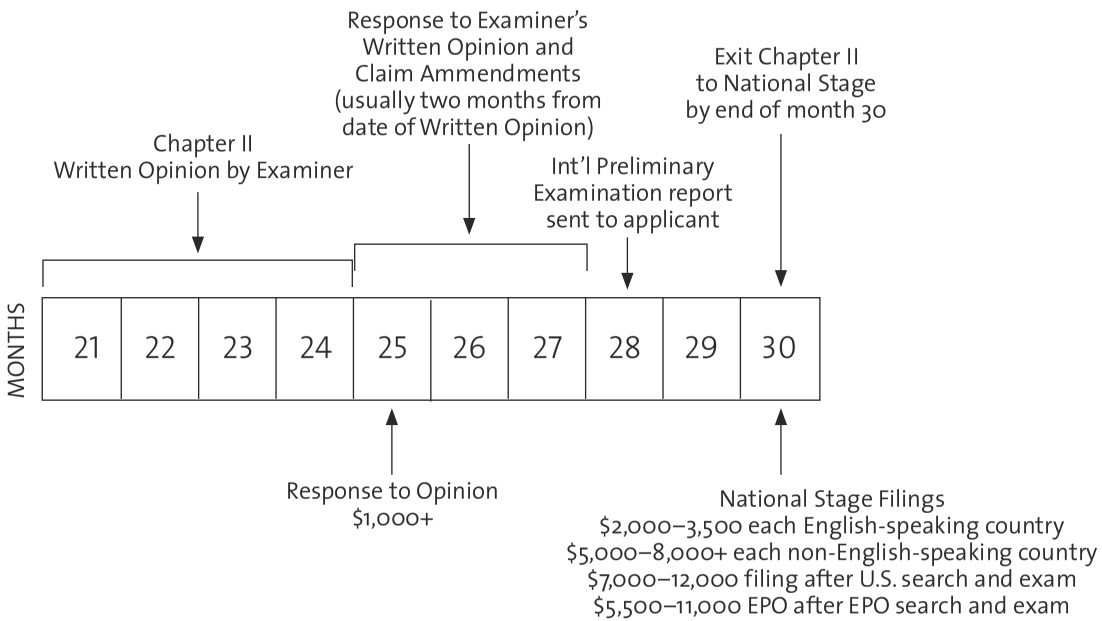


FIGURE 1 (CONTINUED)

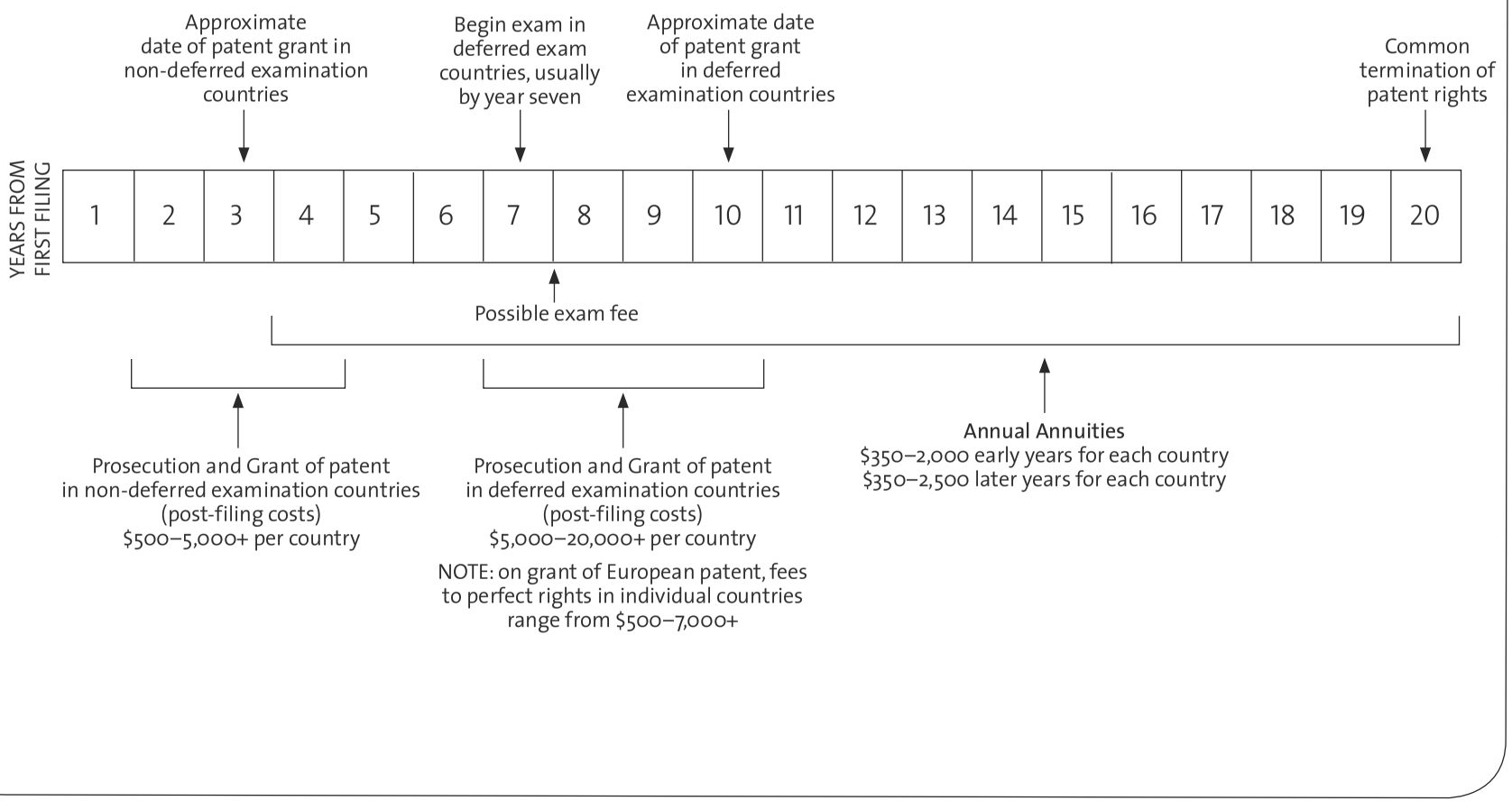


FIGURE 2: PCT INTERNATIONAL PATENT OVERVIEW

