



International Patent Protection in Nanotechnology: Costs, Trends and Considerations

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- I. Brief Introduction to Foreign Patent Prosecution and Patent Cooperation Treaty (PCT) Applications**
- II. Foreign Prosecution Cost Estimates**
- III. Foreign Filing Trends in Nanotechnology**
- IV. Foreign Filing Considerations**

Foreign Filing Options

File U.S. Patent Application, within 1 Year:

(1) File directly with national patent offices.

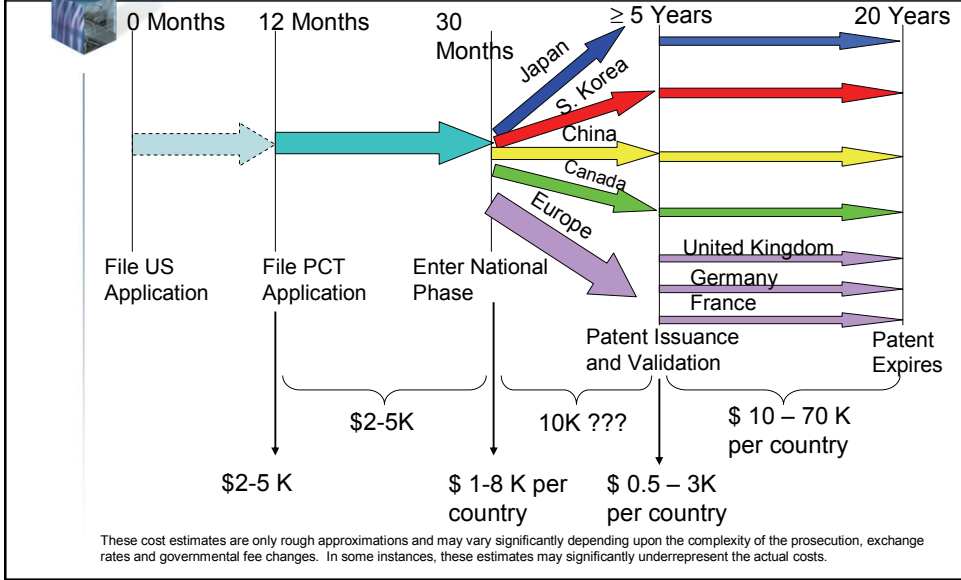
OR

(2) File an international (PCT) application and enter the national patent offices through the PCT.

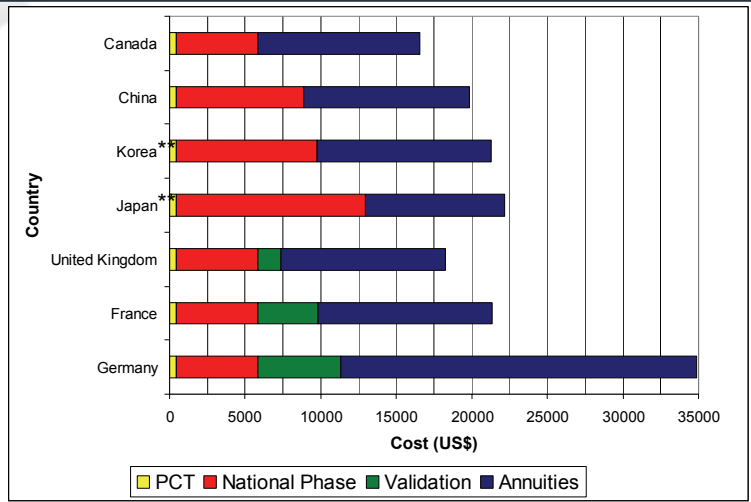
PATENT COOPERATION TREATY (PCT)

- The PCT system is a patent “filing” system, not a patent “granting” system.
- The PCT system:
 - Provides international searching and publication;
 - Delays national/regional filing fees;
 - Provides time to assess the value of the invention;
 - Requires less up front preparation (e.g., translations)
- Not all countries are members – e.g., Taiwan

COSTS: Typical Foreign Filing Timeline and Cost Estimates

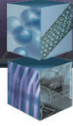


COSTS: Sample Prosecution Costs by Country*



* Assumes straight-forward prosecution.
 ** Assumes that the number of claims has been greatly reduced upon national stage entry in order to control costs.

TRENDS: Foreign Filings – All Technologies

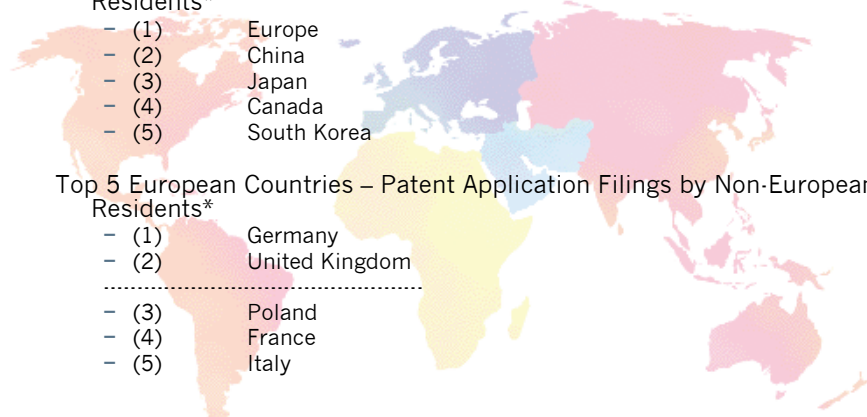


Top 5 Foreign Countries/Regions – Patent Application Filings by Non-Residents*

- (1) Europe
- (2) China
- (3) Japan
- (4) Canada
- (5) South Korea

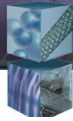
Top 5 European Countries – Patent Application Filings by Non-European Residents*

- (1) Germany
- (2) United Kingdom
-
- (3) Poland
- (4) France
- (5) Italy

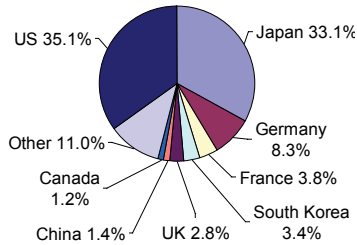


Source: *WIPO Patent Report, 2006

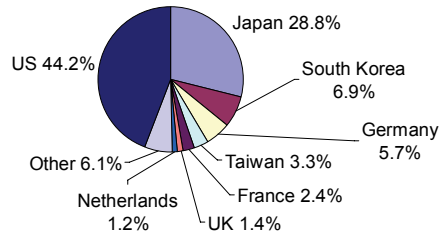
TRENDS: Nanotechnology Filings by Country



Materials

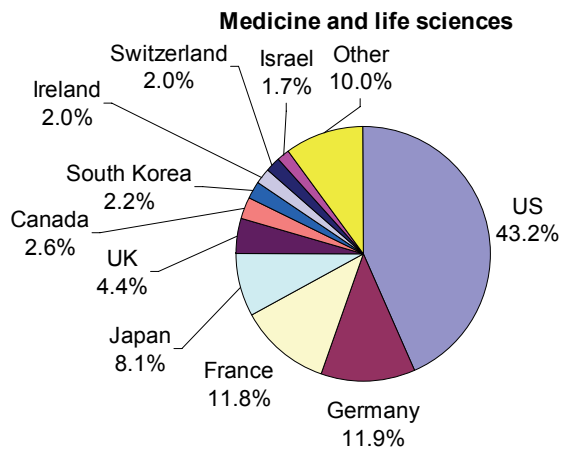


Electronic Devices



Source: Kanama, D., Science & Technology Trends, Quarterly Review, October 2006.

TRENDS: Nanotechnology Filings by Country



Source: Kanama, D., Science & Technology Trends, Quarterly Review, October 2006.

CONSIDERATIONS: Where is Patent Protection Available?

Generally Speaking ... In Any Country with an Operating Patent Office, unless:

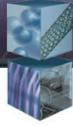
(1) There has been a prior public disclosure:

- U.S. Provides a 1 year grace period.
- Few other countries provide a grace period and only under limited circumstances.
- An offer for sale may be considered a public disclosure.

(2) The claimed subject matter is classified as "unpatentable."

- Varies from country to country.
- Examples of commonly restriction subject matter:
 - Methods of medical treatment;
 - Use of human embryos;
 - Software and business methods.

CONSIDERATIONS: What Does a Patent Protect?

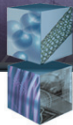


A patent provides the right to exclude others from **making**, **selling** and **using** the patented subject matter. A patent also excludes others from **importing** a product made using a patented process. Thus, the relevant question is ...

Where will the patented products, processes, or products made by patented processes be **made**, **sold**, **used** or **imported**?

- By the Patent Owner and Competitors
- Consider the location and size of present and future markets. (20 year patent term)

CONSIDERATIONS: Is International Protection Worth the Cost?



- How imperative is exclusivity?
- Is the subject matter to be patented “core technology?”
- How easy would it be for a competitor to “design around” the claimed subject matter?
- Could a competitor easily copy the subject matter? (i.e., Is a patent an important/necessary barrier to entry into the market?)
- How easy would it be to detect infringement of the claims? (Method claims?)
- Realities of enforcing Intellectual Property Rights. (China – now and in the future?)

The Importance of Strategy – An Example

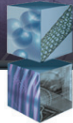


The Parties:

- Company A – assay manufacturer with U.S. patents on manufacture and use of assays.
- Company B (competitor) – start-up manufacturer of assays.

■ The Strategy:

- Legal “Loophole” – Importing a product (physically manufactured good) made with a U.S. patented process is infringement. Importing data/information generated by the U.S. patented process is not. (*Bayer AG v. Housey*, 340 F.3d 1367, (Fed.Cir. 2003))
- Solution – Company B opens a subsidiary in a foreign country with the workforce and infrastructure to manufacture and use the assays. Company B does not manufacture or use the assays in the U.S. Instead, Company B offers the service to U.S. researcher – assays run outside the U.S. and the data is sent back to the U.S.



THANK YOU!

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