

## Importance of patent search in pharma industry

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Patent is a statutory right granted by government to the inventor of a novel, non-obvious and industrially useful invention. Patents work differently in different industries and they have always played a vital role in pharmaceutical industry worldwide and in India especially after compliance with TRIPs obligations and implementation of product patent regime. Protection of patent for pharmaceutical products is more important compared to other industries because the actual manufacturing process is often easy to replicate and can be copied even though the actual cost of research and clinical testing is huge.

High cost of research, lengthy gap between discovery and approval of new drug certainly needs attention in pharmaceutical industry to make sure that research is carried in right direction and is not mere duplication of work done by others. Effective patent search before planning of research can not only save huge amount of time and resources but also can ensure quality output from research.

### Patent search

The word "patent search" or "prior-art" means any information that relates to the knowledge, existing prior to the invention/idea in the form of patent, scientific literature, knowledge or publication. The prior-art search is often performed by a person who is expert in domain and patent law and is performed at various levels and the purpose of doing it may vary depending upon the requirements. Various patent and non-patent databases are used to conduct the search. The main reasons for which prior-art search is done are:

- Before planning R&D in order to assess the work already done by others, plan research and prevent duplication of work.
- Before filing patent to identify closely related literature. It is highly recommended to perform patent search to prevent filing patent application on existing knowledge resulting in waste of time and money.
- During opposition if one wants to oppose or revoke a patent/patent application on the ground of "lack of novelty", or "obviousness" or other statutory grounds.
- Before product launch in specific market, it is essential to perform prior-art search or "freedom to operate analysis" to make sure that launching the product does not infringe any third party's patent rights.

### Types of patent search

There are different types of prior-art searches for different purposes but broadly patent search can be classified into five main categories namely:

- Patentability or novelty search (PAS)
- Freedom to operate (FTO)
- Validity or invalidity search
- State-of-the-art search
- Technology landscape analysis

### Patentability search

"Patentability search", also known as "Novelty search" is the most common type of search on patent/non-patent literature to assess patentability of the invention. While patentability search can be performed much earlier during the development of an invention, it is more commonly performed prior to submitting a patent application.

### Freedom to operate

FTO search, also known as "clearance search" or "right to use searches" is conducted prior to launching a new product to check the patents that are in force in a country to ensure that upon launching the product, the company is not infringing any patent(s) of third party. FTO search is limited to patents that are 'in-force' and it requires in-depth analysis of the claims and legal status of patents identified. FTO is usually done jurisdiction wise because patent rights are specific to jurisdiction. and FTO analysis should

analysis of the claims and legal status of patents relevant to its activity, some jurisdictions may require patenting to be done in the countries where the products relate to particular countries or regions where a company wants to operate. If the company wants to launch products in US, FTO is required to be done in US alone but if the products have to be exported to four other countries, FTO shall be done in other four countries as well.

**Validity/invalidity search**

The purpose of validity/invalidity search is to determine whether a patent issued on an invention is valid or not in view of prior-art. The main reason to performing this search is to either validate or invalidate one or more claims of a patent. In other words, when a search is conducted to validate the claims of a given patent, it is called Patent Validity Search and when it determined to invalidate the claims of a given patent then it is called Patent Invalidity Search.

**State-of-the-art search**

The state-of-the-art search is the broadest and the most general of all types of patent searches. It is essentially a market survey that ideally finds out what technologies already exist. State-of-the-art search results are valuable in many situations especially when a company is contemplating entry into a particular field of art. The state-of-the-art search results may provide concrete evidence of the advisability of such a decision. To a company that is currently active in a particular field of art, the state-of-the-art search results may lay out the path that must be followed to design around the current art.

**Technology landscape**

Technology landscape is an in-depth analysis of patents to understand the technology evolution, major players, current and upcoming competitors and changes in the timeline trend. The main purpose of technology landscape is to identify the white space or gap in the technology and it provides a comprehensive scope to plan the future R&D, leading to innovative projects to bring out new products/process in an industry. The main purpose of technology landscapes study is to understand the technology trends, strength of competitors, to learn latest technology advancement and analyse the patent activity related to technology of interest. Based on the technology landscape analysis, appropriate IP strategy, complaint with business strategy is devised for the companies because a good IP strategy is a critical part of business plan and growth at any stage.

**Conclusion**

As pharmaceutical industry is heavily based on the patents, appropriate patent search can be extremely useful in devising patent strategy, planning research in right direction, having opinion of patentability of the invention and getting complete technology landscape. Patent search is an effective tool that not only gives quality and visibility to the research output but also minimises patent infringement risks before product launch.

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