

What academic researchers need to know about patent literature and patent searches

If you as academic researcher are considering using patent literature as an information source – or have ever got confused by the topic – read this short article from Unitectra about when they are useful or relevant for academic researchers – and when not.

Are patent searches relevant for academic researchers?

Yes. But also no. For many academic researchers the patent literature yields little more relevant information than scientific or technical literature – with few exceptions. This article discusses the different use cases for patent searches for academics:

- (i) using the patent literature as additional information source;
- (ii) conducting a patentability search (to evaluate an invention);
- (iii) receiving a patent search during patent examination process; and
- (iv) conducting a freedom-to-operate analysis as (future) start-up founders.

Use Case 1 - Using patent literature as additional information source

To put it straight, using patent literature as an information source is usually neither required nor recommended. The scientific literature will be more complete, up to date (as patent applications are not published immediately, but 1.5 years after filing) and easier to understand.

There is only one scenario where patent literature provides additional results over the literature search, and this is for patents filed by companies that do not publish their research in scientific journals/conferences. For example, tech bloggers continue to speculate about future iPhone or Apple watch features by reading newly published patent applications by Apple Inc. Similarly, academic researchers may search patent literature in their field of interest for relevant new patents filed by start-ups and industry and retrieve so far unpublished new research results.

How do you do a patent search yourself? Several free patent-search databases are available. The one provided by google ([google patents](#)) is intuitive to use, an interesting alternative is the not-for-profit patent [lens](#). In addition, several patent offices like the European patent office ([Espacenet](#)) and the World Intellectual Property Organization WIPO ([Patentscope](#)) provide free patent search engines. Your university library may provide access to specialized databases that include patent literature. All of them are easy to use but keep in mind that conducting a patent search is different from searching literature and patent documents may be tricky to interpret¹.

Use Case 2: Reviewing a patentability search (to evaluate an invention)

Patentability is a key criterion in the evaluation of an invention (the other important element is a “market need”). For the assessment of patentability “prior art” literature needs to be identified. While researchers typically have a thorough understanding of the closest art in the scientific literature, there may be a need to conduct an additional patent search to check the patent literature for close patent prior art (patent documents disclosing the same or similar technologies).

To make things more complicated, we must review prior art against two patentability criteria:

¹ Kate E. Donald, K. M. Mohibul Kabir and William A. Donald; Tips for reading patents: a concise introduction for scientists; Expert Opinion on Therapeutic Patents, Volume 28, 2018, Issue 4; <https://doi.org/10.1080/13543776.2018.1438409>

- a) Novelty – no patent document or scientific article should disclose the same invention
- b) Inventive step/non-obviousness – the invention should not be obvious for the expert in the field by combining technologies published in two articles/patent applications

The good news is that Unitectra helps the researchers with the patent search part (we expect researchers to conduct the literature search). It is usually an assisted patent search the Swiss Patent Office (IGE): scientists are invited to join the session in which the patent searcher plans and conducts the search and there will be a live review (time effort between 4-6 hours). The patent searcher and Unitectra (and sometimes external patent attorneys) help with interpretation of search results, as sometimes it is difficult to decipher the legal language of patent claims.

The session sometimes ends with disappointment for the researcher (when the patent searcher finds relevant prior art) or disappointment for the patent searcher (where there is no relevant prior art found). In any case, the assisted patent search provides actionable data and so is time well invested.

Use Case 3: Receiving a patentability search during patent examination process

Once a patent application is filed, further patent and literature searching is going to happen. Within the first 18 months of a patent application, receiving a search report from a patent office is one of the first major events in the prosecution process.

The patent examiner will assess relevancy of the patent and non-patent literature identified and assign an “X” to literature which would be novelty destroying; and an “Y” to documents “*when taken in combination with (an)other “Y” document(s) deprive the claimed invention of an inventive step.*” To make things more complicated, there will be additional types of documents.²

As previously, this European Search Report (ESR) or later the similar International Search Report (ISR) issued during the Patent Cooperation Treaty (PCT) process may lead to happy inventors (if no or few X or Y documents are found) or unhappy inventors (if many x or y are found). What follows is a further review of patentability of invention with a patent attorney and it is also used as basis for decision making regarding further investments and patent prosecution strategy.

Use Case 4 Conducting a freedom-to-operate search (FTO) for start-ups

Investors, funding agencies and many more ask for the so-called freedom-to-operate search, the most complex patent search. The question behind an FTO is: “Would a product/technology launched in the market or used by a company infringe patents of third parties?”

Why are FTOs more complex? First, they are difficult to scope (the activity of the company must be defined: what product will be launched, which technology will be used), translate the relevant elements into potential patent areas that could be infringed, and then search these areas one after the other. Second, a patent attorney must review relevant patents and give a final recommendation regarding the potential infringement.

FTO is not something that we usually need to do at universities but FTOs are of critical importance later for start-up companies when taking investment decisions or negotiating with investors.

Summary

In the academic world, patent searches become relevant when your own research results are being considered for patent application or spin-off creating. Typically, a search will be organized by your tech transfer office, like Unitectra, to help assess patentability. During the patent examination processes, many patent offices conduct their own searches that is used as basis for their patent examination.

² Kris Loveniers, How to interpret EPO search reports, World Patent Information, Volume 54, Supplement, 2018, Pages S23-S28, <https://doi.org/10.1016/j.wpi.2017.03.008>.