

## Patent Searching

### Types of Search

Patent searches can be commissioned for a number of reasons:

- To establish the patentability of an innovation, i.e. whether it has sufficiently novelty over the existing prior-art to be patentable. (This is clearly necessary to minimise the filing of applications that are subsequently abandoned in the face of examiner identified prior-art. However, an accurate picture of the prior-art is also required to help shape a patent's claims and hence reduce the chances of it being invalidated later).
- To check the validity of an existing patent, i.e. whether there is sufficient contemporaneous prior-art to challenge its validity or to oppose the grant of a European patent.
- As part of a freedom-for-use review, i.e. to check for unexpired third party patents that could prevent, or hinder, the deployment of a given technology.
- As part of routine intelligence gathering - here a search can be commissioned to examine a technology's development, which may involve the identification of fundamental discoveries as opposed to mere improvements.
- To identify potential licensees by searching for organisations that may be infringing, or could gain benefit from a license to, your technology/IPRs.

A patent search may therefore be one-off exercises, or a review that will be repeated and updated as a technology/market matures; it may also be part of a wider review involving non-patent material.

### Scoping a Search

A patent search will involve the interrogation of a suitable patents database, with the object of identifying all key patents, without having to review an unmanageable number of less relevant patents. Patent searches will normally involve a mixture of text searches, a citation analysis and the use of classification codes.

The generation of such a search strategy tends to be an iterative process with preliminary searches likely to identify new key words, or generate lists of patents that are too long to be reviewed and therefore require the narrowing of the search strategy.

**Text searches** : It is necessary to identify the innovation's key technical features which will form the basis of a search query. These will typically be generated by looking at two areas:

- What problem is the invention addressing?
- What is the invention?
  - What is its function?
  - What is its structure/way of working?

The process of searching will identify key inventors, companies, etc. that will need to be added to the search query.

A search query is constructed by combining key words with Boolean algebra, perhaps

with proximity operators (i.e. how close words need to be in the text) and truncation operators (i.e. required to include words with "s", "es" or "ies" at the end), e.g.

((term1 OR term2) WITH (term3\*2 AND term4\*3))

**Classification codes** : Every published patent is given a classification code to identify its technology area. Most search strategies involve the use of these classification codes. Different codes are used by different countries. The International Patent Classification (IPC) divides technology into eight sections with approximately 70,000 subdivisions. There is also the related European Patent Classification (ECLA) which has 129,200 subdivisions, the US Patent Classification System and the Japanese FI/F-term.

The correct classification codes to use in a search query can be identified by:

- ~ Using the catalogue or index provided by each classification system.
- ~ Using key words to search these catalogues for the correct codes.
- ~ Looking at the classification codes that have been used in key patents.
- ~ Asking an examiner working in the field of interest.

**Citation analysis** : Examining/tracking prior art identified by patent examiners or the patent applicant will not only identify relevant patents, but can also be useful in gaining an understanding how a given technology has evolved.

**Search Tools** (i.e. choice of databases and search engines)

The US and EP authorities and Google provide free searchable patent databases. In addition there are value-added subscription, or pay-as-you go, based services which have more complete data (e.g. translations) or better search capabilities. The Derwent World Patent Index (DWPI) provides a 200-500 word English abstracts for patents, while INPD gives the legal status of patents, both of these are used by a variety of search tools. Search tool providers include Thomson Delphion, Questel-Orbit, PatAnalyst, Minesoft PatBase, Dialog and IP.com. Some of these contain non-patent information.

Which tools are best will depend on the nature of the search.

**Filtering** (i.e. identifying relevant patents)

In assessing the relevance of a patent a searcher will typically start with the title, then move to the abstract → specification → drawing → claims; all the time assessing the patent's relevance and discarding those judged to be irrelevant. However, the approach taken will depend on the purpose of the exercise; in the case of a freedom-for-use review the patent's claims are critical, while with a patentability review the patent specification will be more important.

Experienced searchers will initially scan the patent to see if it is broadly relevant to the field(s) of interest, and if so, a more detailed study will be undertaken to see if it contains any of the specific sub-fields of interest, i.e. the searcher will be following a written or mental decision-tree to assess the patent's relevance. Less experienced searchers may find it useful to capture this decision making process; it may also be worthwhile to keep of record of those patents that contain specific sub-fields.

**Record Keeping**

A patent analysis will generate a vast amount of data - and it may be useful to use a spread sheet to list the patents identified and the conclusion of any review. This is especially important in the case of freedom-for-use reviews where the output may have to be revisited as the product/market matures.