

# Patent searches opinion: How to minimize the risk when reviewing patent applications



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## ABSTRACT

This paper is addressed towards minimizing the risk inherent in making patent search opinions and to increase reliability especially in clearance product analysis. Indeed, in recent years, it has become more and more complex to provide professional patent analysis due to the growth of the total number of patent documents, of which two-thirds are patent applications. Always more often, the pool of documents resulting from a patent search contains documents that have not ended their procedure, contain amended parts and/or are still waiting for future events that might radically change the fortune of the patent, misleading any earlier opinion about it. Thus, patent specialist cannot simply search for all relevant patents and interpret the first version offered by patent repositories. In order to avoid grossest errors, it is crucial to identify the most representative document from a patent family, gather information from all other patents of the same family, work always on the last updated files, fix the patent in the timeline procedure in order to measure future changes that can still happen. This paper analyses some of most frequent problems and errors faced in patent searches and offers a vade-mecum about most critical aspects to be taken into account, useful links and good practices, resulting from procedural and/or legal reasons.

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## 1. Introduction

The reasons for which lead a patent search can be very numerous; for simplicity they can be summarized in three main categories:

- The first collects all kinds of search dealing with patent intelligence that means transforming patent data into technical, business and legal knowledge as the monitoring and survey of a specific technology or product, the survey of competitors patents, technology transfer, identification of emerging technological and technological trends;
- In the second group there are searches related to the state of the art for evaluating the patentability of a new innovative idea, writing a new patent, avoiding potential infringements with other patents, preparing legal action in order to protect our business/patents, determining the residual life of a competitor protection;

- The last group deals with due diligence for investment or transfers/acquisitions.

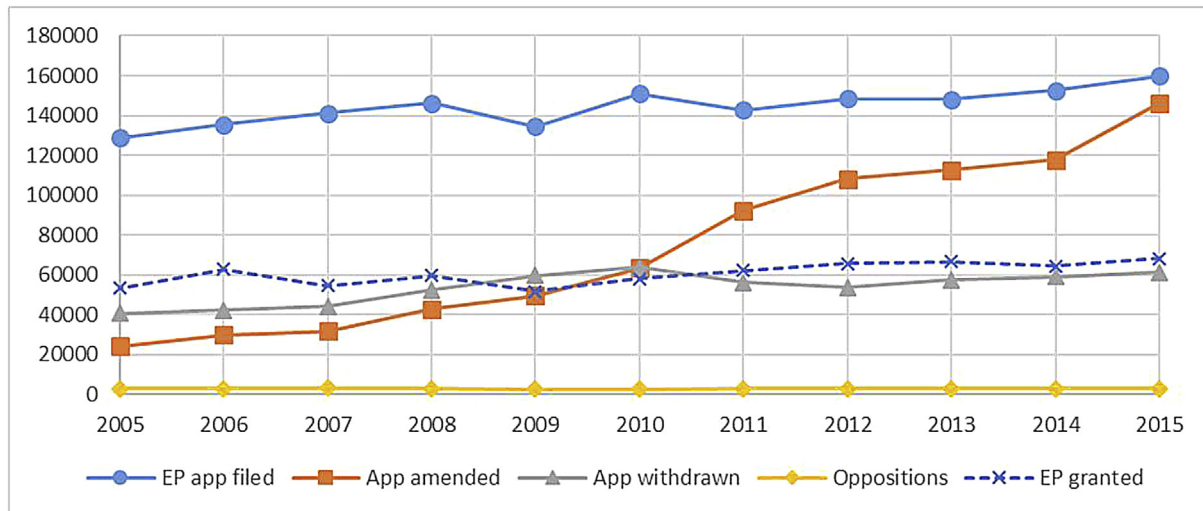
Each of these activities needs a specific patent search having its own peculiarity, with specific strategies, techniques and search tools. In this paper, we focused on activities of the second group that require to analyse patent applications and to state an opinion before the patent grant. Unfortunately, such a kind of searches includes most of the aforementioned activities in the second group. It is not trivial to navigate among these researches as they lack precise, unanimously shared definitions.

For example, both WIPO in its guidelines edited by *Trippe* [1] and *Alberts* [2] consider clearance, freedom-to-operate, infringement and right-to-use, as synonyms, whereas *Hunt* [3] discriminate between infringement and clearance, while not distinguish right-to-use and freedom-to-operate from clearance. We also found many IP specialists that introduce specific definitions for clearance and for freedom to operate exchanging their meanings [4,5].

One of the most important search addressed by this work is the clearance search. To avoid doubts, with clearance search we intend a search where “the objective is to learn what exist in the public domain and, therefore, is free to use”, whereas as infringement

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**Fig. 1. Patent documents behaviours per year at EPO- elaborated from PASTSTAT.** It shows the absolute number of: applications for patent filed with the EPO, both directly and from PCT; EP applications amended; EP applications withdrawn; EP patents granted; EP granted patents opposed.

search it means a search “directed to the claims of all inforce patent and patent applications” [3]. This kind of search puts particular attention on the claims of a patent in order to define which is the matter bound by it and what is free from restriction.

Although little interest has been given to the topic by the literature, its importance is increased due to the great growth of patent applications in the last years, as shown by the main Patent Offices reports: EPO ([www.epo.org/about-us/annual-reports-statistics/annual-report.html](http://www.epo.org/about-us/annual-reports-statistics/annual-report.html)), WIPO ([www.wipo.int/ipstats/en](http://www.wipo.int/ipstats/en)), USPTO ([www.uspto.gov/web/offices/ac/ido/oeip/taf/reports.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/reports.htm)).

The complexity of patent searches is not exclusively related to the number of patent applications, but there are other three main factors that worsen the effort, and the risk taken on, in writing a patent opinion:

- The content of the document, that is not definitive and may change during the procedure;
- The legal status of the applications and granted patent, that may be not updated;
- The patent family, that may mislead the patent specialist in the selection of the most interesting member.

To estimate how much these factors affects the patent search results, we considered some related indexes that measure, year by year, their influence in new patent literature published.

The first one is the ratio between the number of filed applications and the sum of filed applications and granted patents. According to European Patent Application summary of the EPO annual report, the application cover around 70% of new documents annually published. Moreover, the applications filed often and often undergo to amendments during the procedure. As shown in Fig. 1, the amendments on applications have achieved the great increment of 500%, going from 24.387 cases in 2005 to 146.320 in 2015 and from the 20% of the all application filed to more than 90%.

Actually, the patent text may also change after that the patent application has been granted, but fortunately, the impact of the number of oppositions on the number of granted patents is very low and almost constant.

The second index refers to the legal status of documents. From PATSTAT we collect the data about the number of EP applications withdrawn and compared it with the number of EP applications

filed. This index shows that in the last years the applications that change their legal status are almost the 40% of the filed European ones.

The third index relates to the patent families. Their analysis is useful in order to understand which patent are more representative than others for the search opinion. The family parameters are useful also to learn latent characteristics of patents of a third party [6], estimate whether a granted patent will be opposed [7], esteem a patent value [6–8], also using particular methods [9,10]. Fig. 2 shows the behaviour of the number of members of a family along time.

Although the mean size of patent families<sup>1</sup> is decreasing over time since the first years of 2000s due to the growth of single patents, there is an increase of the number of families that has almost reached 300.000 per year. Especially there is a great increasing in families having between 2 and 6 members, while the larger ones are decreasing. The larger family set includes more than 100 members, 6 of which with more than 300 members, up to 472 (US7309763B2).

This paper collects what is now available to lead a patent analysis based on patent applications. We are sure that a consistent and well-structured representation of known intrinsic problems can help specialist and high experienced people to better conduct their patent analysis.

Chapter 2 lists the main software available to lead a patent search, citing their most important characteristics related to the aim of the paper. Chapter 3, 4 and 5 offer a survey about the text, legal status and family issues respectively, which are the most common sources of risk, and where the patent specialist can collect information about it in order to limit their negative influence.

## 2. Search tools

Current patent searching tools allow you to obtain some useful information in order to reduce the risk associated with the above three factors. In particular, you can access to the procedural documents of many countries, to the legal status of patent documents in most jurisdictions in the world and get the list of the members of a

<sup>1</sup> We considered the DOCDB patent family definition.

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