

# Steering Engineering Efforts Through the Patent Maze

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Don't spend your R&D budget reinventing the wheel, or worse yet, on engineering designs that are already patented by a competitor. Learn the state of the art of your technologies and the direction of engineering and design efforts of others before starting your next engineering project.

Patents are teaching documents; the specification is required to teach one skilled in the art to make and use the claimed invention. Therefore, there is a wealth of information available if you know how to steer through the patent maze. Often, clients have a patentability search and opinion performed prior to filing an application for a patent. Clients are typically surprised at the technology disclosed in the patent documents, published patent applications and issued patents, and they may want to incorporate some of these designs into their own design or find an opportunity to improve upon or design around disclosures in the patent documents.

This is what has motivated me to write this article. I urge you to at least perform a cursory patent search prior to calling your patent attorney. The wealth of technology published in the patent documents will most likely surprise you and may provide you with technology that may advance your own engineering designs.

## Don't Reinvent the Wheel

Before you commit to a new engineering design effort, look at the patent documents to determine if your design or objective is already taught. There is a wealth of technology disclosed in patent documents and much of it is in the public domain. Don't expend your engineering efforts reinventing the wheel. Just because you don't see the anticipated results of your proposed engineering project disclosed in the technical journals or available for sale does not mean that it hasn't been disclosed in the patent

documents. Many companies disclose their engineering designs only through patenting activities, and many of these disclosures never make it to market. Therefore, patent documents may be the only disclosure of your contemplated engineering project.

The first task in steering your engineering efforts is to define the patent maze. Start by searching patent documents for relevant disclosures. However, over 7.7 million utility patents have been issued in the U.S. and many more have been published. The job of sorting through millions of patent documents to find the ones relevant to your engineering efforts

can be daunting. For tips on searching patent documents, see "Tips on Patent Searches," *PE*, June 2008, p. 22.

In short, you will want to determine the U.S. Patent and Trademark Office's classes and subclasses of your technology and assemble a list of your competitors. One may first perform a title search and take a quick look at the abstracts for relevant patent documents. The title page of these patent documents will have the USPTO's classes and subclasses and most likely your competitors as the assignees. Search these classes and subclasses as well as your competitors for patent documents that teach or disclose your desired technology. Another option is to have a state-of-the-art search performed by a patent searcher. To have such a search performed, one needs to have only a general description of the technology or problem to be solved.

Your search may result in tens or hundreds of published patent documents. The next step is to organize the patent documents into a matrix so that they can be

easily sorted or located. One way to do this is to construct a claim chart. There are many software programs to help with this task, or you can use a spreadsheet or database. The claims define the property boundaries of the patent and the specification and figures needed to enable one skilled in the art to make and use the claimed invention.

Therefore, locating and organizing patent documents that have claims directed toward elements of your proposed engineering designs should teach you much about the current state of the art, the direction of your competitors' engineering efforts, gaps in patent protection, and the

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general direction of engineering activities for your technology. This information may be extremely valuable in steering your engineering efforts.

## Bargain With the Government

If you find one or more aspects of your proposed engineering design disclosed in a patent document, you may have advanced your engineering efforts. Just because aspects of your proposed engineering design are disclosed in patent literature does not mean that you cannot incorporate the disclosure into your design. Quite the contrary, a patent is a bargain with the government wherein exchange for public disclosure of how to make and use the claimed invention, the patent owner is granted the right to exclude others from making and using the same. The whole objective of the patenting system is to get new technologies into the market place ASAP. Don't reinvent the wheel. Read the disclosures to advance your engineering designs.



Steer your engineering efforts clear of infringing issued patents. Both issued patents and published patent applications are teaching documents that may help you to advance your engineering designs. One cannot enforce a patent application until it issues into a patent. Therefore, one should not be too concerned about infringing a published patent application that has yet to issue. Many published patent applications never issue into a patent and those that do may have claims very different than the claims originally published. However, if you see published claims directed toward aspects of your engineering design, then it may be advantageous for you to look at the prosecution of that patent application.

The prosecution history or file wrapper of the published patent applications can be found in the Patent Application Information Retrieval section of the USPTO's Web site. One may see amendments to the claims and arguments made that may narrow the scope of the claims in the originally published application. If the prosecution history does not alleviate your infringement concerns, then follow the prosecution.

If you find aspects of your invention disclosed in an issued patent, this does not necessarily mean that the technology disclosed in the specification or figures isn't free to use. Much of the disclosure in an issued patent may not be claimed and is, therefore, in the public domain. Also, a patent may remain in force for 20 years from the date of application, as long as the maintenance fees are paid, and more than half of issued patents expire for failure to pay maintenance fees. Additionally, an analysis of the patent claims in a patent of concern may show that your engineering efforts may be better spent in designing around the claimed invention rather than starting from scratch.

## Stay Ahead of the Pack

In addition to avoiding reinventing the wheel and infringing patents, patent documents may be used to keep your engineering efforts ahead of the pack. Your matrix of relevant patent documents should show you the direction of the state of the art improvements and your competitors'

engineering efforts. You will most likely see families of patents claiming different aspects of an invention or claiming improvements on prior engineering designs. These families may provide insight into your competitors' engineering direction and what you may expect to see next. Putting your engineering design efforts ahead of this trend not only puts you on the cutting edge of technology but also may provide you an opportunity to be first to the punch with a blocking patent. A blocking patent may force your competitor to license your patented improvement, which may position you to negotiate a cross-licensing arrangement, allowing you to make and use your competitor's patented designs.

Whether you patent nothing, everything, or selectively patent engineering designs, it may serve you well to keep abreast of the engineering designs being published in patent documents. Keep your patent matrix up to date. Patents issue weekly, and patent applications are continually being published. Depending on the pace of advancement of your particular art or technology, you should have a regular time interval, such as weekly, monthly, or quarterly, for updating your patent matrix. This may be accomplished by periodically searching the patent and publication databases for patent applications that have issued or published since your last search.

Patents are a bargain with the public. In exchange for public disclosure of how to make and use the invention, the owner is granted the right to exclude others from making, using, and selling the claimed invention. Therefore, take advantage of your end of the bargain by using the disclosures in the patent documents to advance your engineering designs.

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