A Prior-Art Search Before Filing the Application

This Patent Stuff and My Semiconductor Business – Part 17

Welcome to this post about patents and chips. Not a lot has been written about this combination, but there is a lot to know, especially for the innovators and entrepreneurs themselves. In this three-weekly series, I talk about various aspects, from my dual points of view of a patent agent and a semiconductor entrepreneur. If you like the article and read it on LinkedIn, give it a thumbs up, and/or click on Follow. If you like to work with us for your next patent, "contact us" info is on www.icswpatent.com. You can also subscribe/unsubscribe for short email alerts when the next post is available.

This time an interesting, and even a bit hairy, subject. Sometimes a customer asks me if we should do a "patent search", and sometimes a customer assumes a "patent search" is standard included in the work leading up to filing a patent application. Actually, some patent firms do and others don't include it by default. Why am I writing "patent search" in quotes? Ah, because a patent search would be too limited. If you search, you'd better include all prior art. So it should be a prior-art search. Prior art, in an un-legal definition, is all that came before your invention, and that some way or another was made public. Whether it was in hieroglyphs on a temple wall, in a holy book, in a university thesis or dissertation that sits on a library shelf somewhere in Guadalajara or 苏州, in an IEEE standard, a textbook, or in a patent or patent publication. If your invention was described or suggested in the prior art, you can't get a patent on it. You can't even get it if one half of your invention was in one piece of prior art, and the other half in another piece. The stakes can be high.

Figure 1 – Even This Treatise on Medical Instruments Constitutes Prior Art

So, do you need to do a prior-art search? Why should you, or why should you not? The opinions vary.

If you work in a large Silicon Valley chip company, you may get a directive from your legal department not to study patents from others when you're developing something. You actually respect the lawyers there, because in your direct contacts with them you noticed they're all not just very smart, but honest people too. However, when you do some Googling around, you find that there are plenty of lawyers who find prior-art searches not just useful, but even indispensable. What's going on?

Well, in the chip world (and probably also in software) there is probably a lot of unintended patent infringement going on. It's not necessarily easy for your competitors to find out what you are doing inside your chip or software, and find

out if you're infringing on their rights. They can of course reverse engineer your product, but in the West most companies don't want to spend the time or money to do so. So the only ways to know are either from your documentation, publications, advertisements, or disgruntled former employees. Not easy, but infringements do get noticed from time to time. And then, of course, a lawsuit follows. What's next? Well, judgment will be much harsher if a judge finds that your infringement was intentional. So if your designer knew about somebody's invention, and decided to use it anyway and hide it inside the chip or the software, you could be double toast! That's why some lawyers prefer ignorance.

If you decide to protect your technology with one or more patents, you're not planning to hide it in your chip. Maybe you've decided to keep some inventions as trade secret, but not the ones you're going to patent—because those will be published in a way that eventually takes them into the public domain. As a thank-you, you get a 20 or 21-year privilege. Your inventions also need to be described well because otherwise they wouldn't be defendable against infringers.

Some patent firms really want to include a prior art search. If you read the www.ipwatchdog.com blog, you will notice that Gene Quinn (a patent lawyer whom I highly regard) is unequivocal about it. Yet, plenty of other very well-respected firms don't push you for one. So what would be some reasons not to have one:

- A prior-art search is never complete. It won't give you 100% certainty.
- It costs money. And you're already going to pay the patent office to do a search, so you're paying twice.
- It takes time, too, even though it may only be one or two weeks.
- You are legally obliged to inform the patent office of everything you learned that could impact patentability. So it means extra work not just for the patent application's preparation, but also for the examiner, and then in turn this could spill into office actions (responses from the patent office), which might theoretically give your practitioner more work for getting the patent allowed.

On the other hand, reasons why a prior-art search can be helpful or even critical:

- A search can find prior art that is essentially the same invention. You could call off the patent application and even the whole product development, or refocus your resources. I had once inherited prosecution of a patent application for a really cool RF invention. I didn't like how it had been described (way too narrow because the practitioner didn't understand the invention), but I absolute loved the thing. The office action that I had to respond to came up with prior art the examiner had found. One of them was the exact same invention, filed nine years earlier, and described much better. Ow‼‼
- A search will find prior art that is close to the invention. No need to call off anything, but it can definitely impact the focus of the patent application, impact the drawings, the description, and the claims. The application document may get to look very different based on good knowledge of the prior art. It will make defending the application easier and can make it quicker. It may save you money, perhaps more than the cost of the search.
- The upside of the extra work for preparation, examination, and prosecution of the patent is that you will end up with a stronger patent. If some patent troll would ever attack it, it's not going to fall apart. Aggressive competitors may also be less likely to attack it.

What do I do?

I let it depend on the invention. If I believe it is an area where there is great market competition and great R&D competition, then I recommend doing a search to reduce the risks. In those cases, I really don't like to go in blindly. If it is an area that is a little bit quieter, or if I know that the customer has a pretty unique technology, and the current invention is part of that unique technology, then I don't recommend a search, but I won't recommend against it either.

Can you do your own search?

Many startups need to preserve cash and are not eager to spend early cash above what is absolutely necessary. But for some of my larger customers I have prepared market reviews that included the IP landscape, and thus prior art or patent searches. Those can be rather useful for strategic direction. Could you do something yourself?

Yes, you can. And many inventors do. I mostly see no harm. Just realize that, even when you're searching quite well and don't finding anything, the patent office may still find something that you couldn't. Searches my customers have done themselves have significantly impacted how I wrote the application. Professional searches have done so, too. Some of the resources you can use are:

Google	https://patents.google.com
USPTO	http://patft.uspto.gov/netahtml/PTO/search-bool.html
Lens	https://www.lens.org
Free Patents Online	https://www.freepatentsonline.com
WIPO	https://patentscope.wipo.int/search/en/search.jsf
Espacenet (European Patent Office)	https://worldwide.espacenet.com
J-PlatPat (Japan)	https://www.j-platpat.inpit.go.jp/s0100

Having these powerful sites at your disposal, you can find a lot. But also consider the following, told to me by Joachim Pistorius PhD of 2pi Patent Consulting in Germany. He reminded me of a colleague he once knew who thought his own work was straightforward, he was making the obvious choices, and there wasn't anything particularly out of the ordinary there. His company pushed him to consider at least some of his work his potential innovations, and pursue patents. The colleague ended up with about 20 patents. Having a preconceived notion about how innovative your own work is can seriously skew your patenting expectations. It can also skew what you find in a search. Sometimes it is just better to have things done professionally.

How are searches done professionally?

Good searches can take a lot of work. Fully reading (and understanding) 20 patents can seriously keep you off the street. Of course, everything really well done takes effort. Law firms are often too expensive to do searches, so they are typically subcontracted to specialized firms. There are firms in the US (near USPTO) that are good, and a lot more cost effective.

Searches may cost several thousand dollars. There are also firms abroad. Not all of those are equally well trusted, but companies in India have carved out a decent niche in this market. Their command of English is excellent, and their prices are quite affordable. But of course, to get good results you need to give them good input information. And once you have the results, you (or your patent practitioner) still need to read and understand the material that was found and, if necessary, take corrective actions on parts of the application that were already written.

An increasing number of software companies focus on IP professionals. They offer IP dashboards that are enhanced with artificial intelligence, and that have access to databases with many millions of patents. Those products should make it possible for law firms to do their own fast and low-cost prior art searches. I'm currently looking into the value of those products and comparing results with outsourced searches. One advantage is definitely a shorter wait time. But in the end, I want to know if the search results are at least of comparable quality.

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21. Why China Is Important for My Chip Patent

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15. How Do I Know If My Invention Is Patentable?
16. How Do I Screen My Employee's Invention Before Deciding on a Patent?
17. A Prior Art Search Before Filing the Application

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