

Rembrandts or Rubbish in the Attic?

A good deal of business advice over the last decade has centred on getting value out of research and development through aggressive patenting strategies. And clearly patenting rates have increased significantly, in all manner of fields. But does a “patent everything” strategy really pay off?

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Over the last few decades patenting rates have increased substantially at government patent offices throughout developed economies. In Europe, the number of annual patent filings grew from 60,754 in 1990 to 140,725 in 2007, more than a two-fold increase. In the US, comparable increase can be seen, from 171,163 patents filed in 1990 to 456,154 in 2007.¹

The blossoming of patent application filings has been driven by a host of factors, one of which appears to be many companies' quest for the next “Rembrandt in the attic”. In other words, the perception that a patent, any patent, creates commercial value for its holder that can be exploited in the marketplace has led many firms to establish internal patent departments tasked with culling through all of the results emerging from the R&D department to identify what can be patented, which firms might be approached for licenses, and generally how to generate revenues from any intellectual property right (IPR) that is obtained.

At the other end of the spectrum are those who are worried about the harm such patent mining can generate. In particular, the popular view that firms are patenting every little invention they can has spurred considerable debate regarding the proliferation of “weak” or low quality patents – patents that should not or would not be granted if the patent office in charge had adequate resources to devote to application review and had personnel with the appropriate training to review the many highly technical applications now made. A host of theories based on this sense of “over” patenting has emerged. To name just a few:

- “Patent Blocking”, where the sequential and incremental nature of the patented inventions mean that disparate patent holders can block one another from developing products and services, creating grid lock in consumer markets;
- “Patent Thickets”, where manufacturers have to expend substantial resources to hack their way through the dense thicket of patent rights, licensing with numerous parties in order to get a product or service to market and thus raising costs and consumer prices as well; and
- “Patent Padding”, where cooperative industry standard setting efforts, especially those regarding high technology products and services, are bogged down by “too many” patents, few of which contribute anything of technical merit to the standard under

¹ 1990 patent data obtained from *World Patent Report: A Statistical Overview (2008)*, available at http://www.wipo.int/ipstats/en/statistics/patents/wipo_pub_931.html#a11. 2007 patent data obtained from *Trilateral Statistical Report 2007*, available at <http://www.trilateral.net/statistics/tsr/2007.html>.

development but instead act only to raise cumulative licensing fees for firms implementing the standard, and thus ultimately raise consumer prices.

Both of these extreme views likely miss the mark. Yes, a careful review of emergent research to identify commercial opportunities can be a valuable use of company resources, but no, not every single “invention” will be worth patenting. And, yes, “too much” patenting can be harmful to healthy competition in a marketplace, but no, markets do not appear to be grinding to a halt on a regular and widespread basis. Moreover, we must bear in mind the original motivation behind a patent system in the first place: to increase incentives to invest in risky innovation efforts and to provide a means for the exchange and dissemination of the resulting inventions. So instead of extremes, the truth most likely lies somewhere in the middle, meaning that rational decisions to patent or not and to license or not must involve a careful weighing of the costs and benefits.

The costs involved

First, consider the explicit costs involved in patenting. Ignore R&D expenditures, which can be extensive but which are driven by the traditional investment decision parameters involved in any expected return calculation. The patent-everything mindset typically starts with R&D as a given, claiming that untold riches can be extracted from the normal by-products of R&D without any increase in R&D expenditures. Perhaps – but first the costs of drafting the patent application must be factored in. These can be non-trivial, with the average cost of drafting a fully specified application reaching €3,000-4,000 in the EU and \$4,500-7,500 in the US.² Added to the drafting costs are the actual filing fees charged by government patent offices, which range from €100-180 at the EPO, \$82-850 at the USPTO, €50-60 at the German patent office, and €13-36 at the French patent office.³ While each individual fee is minimal, if coverage in multiple jurisdictions is needed, fees must be paid in each one. Then, assuming the patent is granted, which takes on average 3 – 4 years, there are the maintenance fees that all patent offices charge in order to hold a granted patent in good legal standing. When patent holders do not pay these fees, the patents are considered “abandoned” and hence unenforceable. Maintenance fees can be sizeable as well. In Germany, for instance, the patent office charges €70 in maintenance fees starting in the 3rd year and increasing to €1940 in the 20th year, although maintenance fees are reduced by 50% if the patent holder is willing to license.⁴ At the

² Estimated patent application drafting fees in the EU available at <http://www.lventre.com/pctcostepo.pdf>; estimated patent application drafting fees in the US available at <http://www.patentpending.com/patapp.html>. Other sources place application drafting fees in the US as ranging between \$3,000 – 20,000 (<http://www.bitlaw.com/patent/provisional.html>).

³ EPO fee structure available at [http://documents.epo.org/projects/babylon/eponet.nsf/0/A4982CD10EDB8AA0C1257599003A59D4/\\$File/schedule_of_fees_02_09.pdf](http://documents.epo.org/projects/babylon/eponet.nsf/0/A4982CD10EDB8AA0C1257599003A59D4/$File/schedule_of_fees_02_09.pdf); USPTO fee structure available at http://www.uspto.gov/web/offices/ac/qs/ope/fee2009january01_2009may01.htm; fee structure for the German patent office available at http://www.dpma.de/docs/service/formulare_eng/allgemein_eng/a9510_1.pdf; fee structure for the French patent office available at http://www.inpi.fr/fileadmin/mediatheque/pdf/INPI_Tarifs_procedures.pdf.

⁴ Detailed fee structure for the German patent office available at http://www.dpma.de/docs/service/formulare_eng/allgemein_eng/a9510_1.pdf.

EPO, maintenance fees start at €400 in the 3rd year and increase to €1,350 in the 10th year and beyond.⁵

In addition to the above costs, all of which can be known ahead of any decision to file for a patent, are the potential costs that come with the grant of a patent. Namely, a patent is only valuable if potential licensees believe that it will be enforced. If the patent holder is viewed as having insufficient funds or willpower to pursue a patent infringement challenge, that holder will have little bargaining power at the licensing negotiation table. This is, in fact, one of the difficulties that start-up firms face when broaching licensing with larger entities. The patent holder may also need to withstand validity challenges in response to licensing demands. And if the target licensees hold substantial patent portfolios of their own, a licence demand may be met with a credible counter demand, the end result of which is often a cross license. Of course, cross licences can be valuable, but they are payment in kind and do not generate revenue per se, especially if the patent holder has not altered its products or services as a result but has merely taken on a licence to continue with its existing products or services. As the list of possibilities above make clear, patents come with risks along with their potential to generate additional revenue.

Only with the full schedule of costs in mind can a company make a reasoned decision to pursue a patent for a particular invention and then to pursue a license if and when the patent is granted. That means estimating whether the expected benefits have a reasonable probability of exceeding the known drafting, filing, and maintenance costs, as well as the potential infringement and invalidity challenge costs. The decisions to file and license a patent, then, bear a close resemblance to decisions for any other type of investment.

The potential rewards

What, then, are the potential benefits of getting and licensing a patent? To answer that question, the firm considering a patent filing should investigate the marketplace in which the patent would be relevant. Are a lot of granted patents in this space already? Do most firms in the relevant market(s) license in patents? Do firms use their patents defensively, to stave off infringement or validity challenges, or do they actively seek licenses with positive royalty rates? Do firms tend to cross license their patent portfolios with other patent holders? Are patents typically licensed individually or bundled into groups or portfolios? Answering these questions will help to define the revenue potential as well as the level of infringement/invalidity risk.

Clearly, the most important factor in determining the revenue potential for a patent is the royalty rate (and/or upfront fees) that the patent holder anticipates being able to charge. While a patent provides its holder with a limited monopoly of sorts, some important constraints are nonetheless relevant. Patent holders are not free to charge licensees whatever they please; rates are most often set through bilateral negotiation. As a result, if the patent represents a minor component of a larger product, the patent holder must recognize that what other complementary IPR holders charge will restrict the rates it can

⁵ Detailed fee structure for the EPO available at http://www.european-patent-office.org/epo/pubs/oj009/02_09/02_sup9.pdf.

charge. In other words, licensees view licence fees in the aggregate. Second, licensee profit margins must be kept in mind too as they define maximum willingness to pay. A licensee will not pay more for the full set of needed IPR than the sales of the product justify and the licensee must also be able to earn a reasonable return. Third, the patent holder must consider its long term status in the industry. If it intends to be a repeat player, it must work to offer terms and conditions that are viewed as reasonable, otherwise it opens itself to retaliatory measures by licensees. On this last point, recent empirical research suggests that firms exiting an industry (in particular, semiconductor firms closing their doors) are particularly responsible for “excessive” royalty rate demands as they have lost the repeat-play constraint. On the opposite end of firm life cycle, new entrants may have incentives to offer especially attractive licensing rates and terms as a means of gaining share and support within the industry. This would be the patent version of introductory pricing.

The bottom line, then, is that patenting decisions are no different than other business decisions. They too require careful cost-benefit analysis. Despite what much of the hype may suggest, patents do not always represent untapped gold mines. Just because a firm *can* get a patent on something does not mean that it always *should*.