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Thomas G. Field Jr.

Professor Emeritus, University of New Hampshire School of Law

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This series began by Professor Field in the 1970s in print booklets continued as web pages and were last updated in 2015.

Recommended Citation

IP Basics: Seeking Cost-Effective Patents, IP BASICS (UNH Law, Franklin Pierce Ctr. For Intellectual Prop., Concord, NH), Jan. 1, 2015.

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IP Basics: Seeking Cost-Effective Patents

By Thomas G. Field, Jr., Professor Emeritus, University of New Hampshire School of Law Franklin Pierce Center for Intellectual Property

Last updated 2015

Introduction

As real estate title may cover a square inch of Arctic tundra or a square mile of Manhattan, intellectual property protection may be broad or narrow, cover various kinds of products or processes, and have widely varying value. Yet, some misconstrue Emerson's dictum and believe that patenting an invention will cause the world to beat a path to their door. Others, who appreciate that it is often easier to patent than to sell an invention, believe that patents increasingly cost more than they're worth. This discussion shows how both views are wrong. Patents do not guarantee market success, but they and other forms of intellectual property can easily be worth the cost.

Costs are more important to some inventors than others. Employed inventors usually need not be concerned; their inventions belong to their employers. Firms large enough to hire professional inventors should have personnel and procedures to weigh intellectual property options and select among alternatives (but it's remarkable how many don't). Inventors not so employed have the same need, and this discussion offers basic advice on how to meet it.

Exclusive rights to make and sell new products may help secure business loans or obtain royalty income. In most cases, the value of those rights derives from their capacity to stop free riders -- and the need for such capacity varies widely.

- First, consider a firm that faces no serious competition and makes a product in sufficient volume that R&D costs account for less than 1% of its selling price. Such a firm could choose to ignore potential intellectual property benefits, trademarks aside, without serious risk.
- Now, compare a firm whose R&D expense is a major part of its selling price. It would be foolish for it to ignore intellectual property options. Even if it has no competitors, a successful product may attract them. Being able to avoid R&D cost, others can make heftier profits or, worse, undercut the innovator's price.

Small firms should also appreciate the advantages of scale. R&D aside, small-volume firms must also appreciate that large competitors, on the basis of size alone, may be able to beat their prices and make higher profits. If so, IP rights can be the key to survival!

IP protection locks the door to specific product markets, but one does not lock up things unlikely to be stolen, much less buy expensive locks. The first step in seeking cost-effective protection is to evaluate the invention's market.

Most factors critically affecting the market potential of new products should occur to any thoughtful person -- or at least one unencumbered by fantasies of riches and glory. We are all consumers. Innovators would do well to think about how they behave as purchases.

Marketing Basics

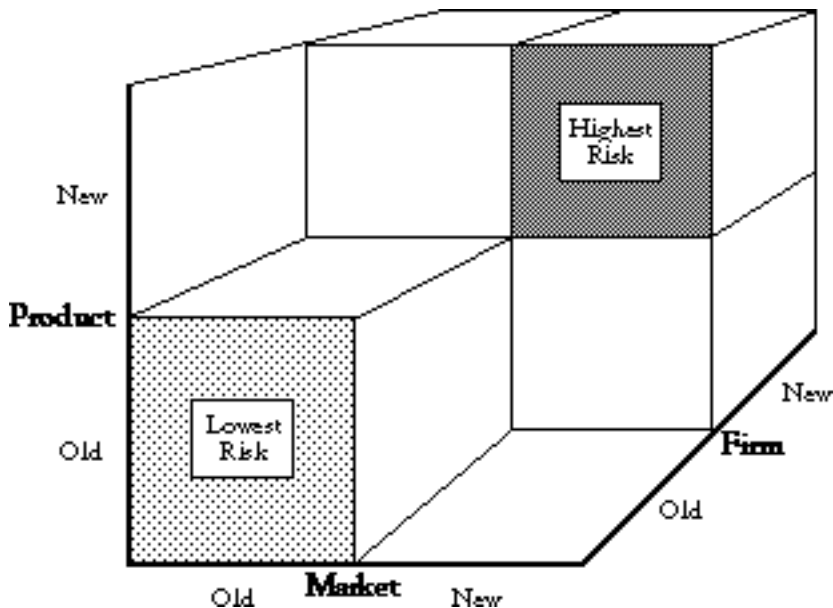
Many sellers of products and services seem to ignore the basics:

- What are consumers looking for?
- Does the product meet their needs?
- Is the price reasonable in light of needs that are met?
- Are these things true for many or only a few people?

For example, computer users often encounter shareware that has marginal value at best. Prices requested from users are sometimes incredible unless one considers how easily programmers can focus on the amount of time spent rather than the program's objective utility.

Purchasers are unconcerned about an innovator's sweat. Mousetraps that cost twice as much as ones already available but have only 50% more consumer value will not sell. This is true even though, in some way(s), new products might be regarded as many times better than anything on the market.

Three factors affecting likely market success



The figure shows five cells in a 2x2x2 matrix, with the lowest risk being an old product, introduced by an established firm, into an old market. Yet, Ford's Edsel in the 1950's and more recent experience with "new" Coke show that such a scenario is not free of risk. Imagine how much higher the risks are for new products brought by new firms to new markets! Innovators should consider such matters in attempting to decide, for example, whether to try to go into business themselves or to license others.

Potential Competition

Another set of important factors hinge on potential competitors. Unless one is selling a truly new product to meet a totally new need (a risky proposition), competition is likely.

The light bulb epitomizes the great invention. Yet, firms promoting electricity had to face large, well-established utilities and attract enormous resources to displace gas for illumination. Innovators must consider the full range of advantages enjoyed by present and potential competitors, including goodwill, skilled personnel, well-established distribution channels, access to raw materials and economies of scale.

Discussed at length elsewhere, such matters do not need detailed treatment here. For example, the booklet, "Guide to Invention and Innovation Evaluation," provides an excellent discussion. Published by Gerald

Udell and colleagues at the University of Oregon in 1977, it discusses 33 factors to be considered. That booklet also contains a questionnaire for considering each factor with regard to particular products or services. Confirming what is urged here, the very last question is: "Can the inventor legally exclude others?"

Still, inventors must keep in mind that offering an invention for sale or publicly disclosing it without having first filed a patent application forfeits all rights to a patent in the U.S. after a year -- immediately in many foreign countries. Test marketing before at least considering possible patent protection is most unwise!

Basic Intellectual Property Options -- Benefits and Costs

Some people believe that marketing experts are adept at explaining successes and failures but incapable of predicting either. This is too unkind, but even the staunchest defenders are unlikely to claim that marketing is a science. Thus, even sophisticated firms usually decide what to spend for IP protection in the face of great uncertainty. Because patents may be the most expensive form of IP, other options should be considered. For example, trademarks are relatively inexpensive and very useful for protecting goodwill after a product is marketed. Trade secrets and copyrights should also be considered.

Benefits

Rights in trade secrets protect commercially important information from being used in breach of confidence and from being obtained, for example, by bribing another's employees. However, trade secret law is not effective against another's obtaining the information by reverse engineering (copying a product found in the marketplace) or independent discovery.

For most inventions, copyright offers little potential because most inventions fall outside the scope of its subject matter. Copyrights are nevertheless valuable for software. Unlike trade secrets, copyrights can be used to stop others from copying products acquired in the market. Still, they suffer serious limitations. First, copyrights cannot stop others from selling very similar works that are independently created. (However, the more widely a work is available, the more difficult it is for later sellers to establish independent origin.)

A more serious limitation for copyrights is that, although they can be used to prevent others from copying or closely imitating software, they cannot be used to prevent competitors from writing a different program to execute the same functions or get the same result. Finally, copyrights are of little value in preventing other from copying and using data no matter how expensive it may have been to collect.

Utility patents. (Utility patents are what most people intend when they refer to patents. Other possibilities such as design and plant patents are not considered.) Patents are better than copyrights in most ways. Although of no use for protecting data, patents can protect a much wider range of inventions and can be used to prevent sale of works independently invented. Nevertheless, for inventions such as industrial processes, patents may be difficult to impossible to enforce. For example, if others can learn to practice an invention from reading a patent, but the patentee cannot determine that the invention is being used, the patent will not be worth much. In such circumstances, trade secrets may be preferred.

Costs

Among various types of IP, trade secret rights also cost virtually nothing to obtain. Maintenance, however, is a different story. Maintenance may require special personnel; employee training; restricted access to plant, equipment and documents; the need to get agreements from and to educate people with unavoidable access; and the need to monitor disclosures through publications, conferences and trade shows. The costs of

such precautionary measures can be high. Also, university faculty whose reputations are tied to publication in professional journals are apt to find anything that interferes, i.e. secrecy, unacceptable.

Copyrights are the least expensive. They arise automatically upon creation of proper subject matter. For works created in the U.S., registration is necessary only if one needs to bring suit; it is usually unnecessary elsewhere even for that purpose. Yet, for all copyright owners, early registration confers important remedial advantages. The registration fees are modest, and registration rarely warrants legal assistance.

Finally, patent protection is expensive to obtain, maintain and enforce. Government fees alone run into thousands of dollars and have increased dramatically over recent years.

Unlike the situation with copyrights, patents must be obtained in each country where protection is desired. Costs abroad are usually higher than here -- particularly if translations are required. This means that few inventions would warrant patent protection in more than a small fraction of possible countries. Still, that IP-sophisticated U.S. firms do file abroad indicates that foreign patents are sometimes worth the expense.

Controlling Patent Costs in the Face of Market Uncertainty

Besides potentially unenforceable patents, consider, for example, the invention's possible lifespan. Patents issue slowly and confer no benefits until they do. Markets may change quickly because of technology or sometimes fleeting consumer interest. In such circumstances, filing patent applications can represent a waste of money.

If patents are not rejected for such reasons, inventors almost always face the daunting challenge of trying to evaluate their possible advantages when the profit potential of inventions is very much in doubt. Unfortunately, free riders later face far less uncertainty: They weigh options after market demand has been shown!

Otherwise well informed people often fail to appreciate that patents vary enormously in their ability to forestall competition. Generally, patentees get what they choose or, more likely, can afford to pay for. Patent protection that covers too little technological territory, or is in the wrong geographic or market location, is probably not worth the cost. For example, those without patents there cannot stop others from sharing or even taking over European markets if their inventions prove to have great consumer demand. Yet, patents covering empty markets represent wasted resources.

Because inventors often lack important information when cost-critical choices have to be made, it may be useful also to think of intellectual property as insurance. How can one purchase adequate insurance at least cost? Where can corners be cut, at what risk? One way independent inventors can cope is to do as much as possible themselves.

Prior Art Searches

The first step in determining whether an invention is patentable is a prior art search. If it is old or obvious to those familiar with the technology, an invention cannot be patented. Also, prior art searches may reveal unexpired patents that could block sale of improvements. A patent does not permit one to sell -- only to prevent others from selling an invention. Thus, inventors must consider, for example, the time left for any blocking patents and whether licenses are available.

Inventors should not try to save money by omitting prior art searches before filing applications. Given the difficulty and cost of marketing new products, inventors must not assume, just because a product seems to be commercially unavailable, that it is novel.

True, patent examiners do searches after applications are filed, but dollar-wise inventors do not pay attorney and filing fees to have examiners tell them what they could learn much more cheaply.

Do-it-yourself books may offer useful advice along those lines, but it is unlikely that a novice can get a patent worth the substantial filing and issue fees without expert help. Still, if inventors, themselves, do as much as possible, including literature and patent searches, initial attorney consultations will accomplish more — and further professional help may cost less.

Preparing Applications, Seeking Assignees

Nor should inventors stint on application preparation. If an invention warrants protection, it seems penny-wise to spend thousands of dollars in government fees for a patent that offers less protection than is warranted or needed. Those who want only to brag about being "patentees" may be able to get something from the Patent and Trademark Office (PTO). Yet, if meaningful protection is desired, it is highly doubtful that average persons (or even lawyers) can get that without much more help than do-it-yourself books can provide. Whether you can "get a patent" without expert help and whether you can get one worth the time and money are very different questions.

The challenge of preparing an application is greater than that of provisioning a boat for a long voyage. Once an application is filed, supplemental applications are possible but expensive. Also, added matter does not get the filing date of the original application. Applications can be filed more cheaply, however, when inventors have studied the prior art and can explain how their inventions differ from what has gone before - especially by focusing on unexpected advantages. Inventors are usually most familiar with their technology, and, the more they do, the less attorneys have to charge.

After a U.S. application has been filed, a window of opportunity opens. It should not be wasted. Applicants have a year within which to decide whether to file elsewhere. Also, they can test market without forfeiting potential rights.

Further, once applications are filed, inventors can approach prospective manufacturers with less concern about having their inventions stolen. In fact, many manufacturers will not consider outside submissions unless patent applications have been filed. If the market and prior art prognoses are good, and applications are well prepared, this will increase a manufacturer's interest. A pending application can be assigned. If so, inventors can avoid further expense. Also, a manufacturer will have a better idea of whether foreign protection is warranted, and where.

Yet, keep in mind that prospective assignees will be concerned about their own costs and risks: The higher their likely costs (including development and marketing), and the lower their chances for profit, the less they will be willing to pay. This severely curtails inventors' ability to pass costs on to others.

Prosecuting, Maintaining and Enforcing Patents

Before a patent issues, a dispute with the PTO is likely. Indeed, contrary to what some believe, an initial indication that all claims are allowable may not be good news: It suggests that too little was initially sought.

The downside of claims being denied, of course, is the expense of responding, filing multi-tiered appeals or taking measures to show unexpected advantages of the invention. How far should an applicant pursue those options? An answer is impossible without at least a good guess about the value of contested territory that the patent could cover.

If an invention's value proves to be comparatively low, or allowable patent claims prove inadequate to protect potential markets, an application can be abandoned. This avoids further prosecution costs, as well as

issue and maintenance fees. Further, particularly if they do not file abroad, inventors may retain trade secrecy following abandonment.

Summary

Those who have inventions of dubious value should be disabused of the mousetrap myth. Inventions can easily be more difficult to sell than to patent. Do you want to spend money to keep others from copying something that can't be sold at a profit?

Conversely, if you have a valuable invention, you should not be deterred by myths and rumors. It seems foolish not to deter free riding or to give away something that others would be happy to purchase.

The cost and availability of IP protection vary widely depending on subject matter and other factors. As soon as an invention's income potential appears to justify it, options should be explored with experienced counsel. Professional help in assessing alternatives represents money well spent.

Patents may not offer the only or even the best protection: Depending on the circumstances, cheaper alternatives may be ample. When that is untrue, patents are often worth the additional cost.

If an invention lives up to expectations, it is critical to be able to recover the costs of developing and marketing. Small firms in particular must consider how, when properly used, patents and other kinds of IP can help them to match the prices of larger and better-known competitors.

The need to optimize protection stops only when inventions prove to be clearly valueless.