

PATENT PROTECTION AND THE PHARMACEUTICAL
INDUSTRY IN THE INDIAN UNION

REVISITING THE COST
OF BAD PATENTS

WHAT TO DO IF YOUR CLIENT MAY INFRINGE
BOTH OF TWO INTERFERING PATENTS?

Intellectual Property Today™

www.iptoday.com

I. P. Today, 369 W. Northwest Hwy., Palatine, IL 60067

A Publication of Omega Communications

October, 2004

\$9.00

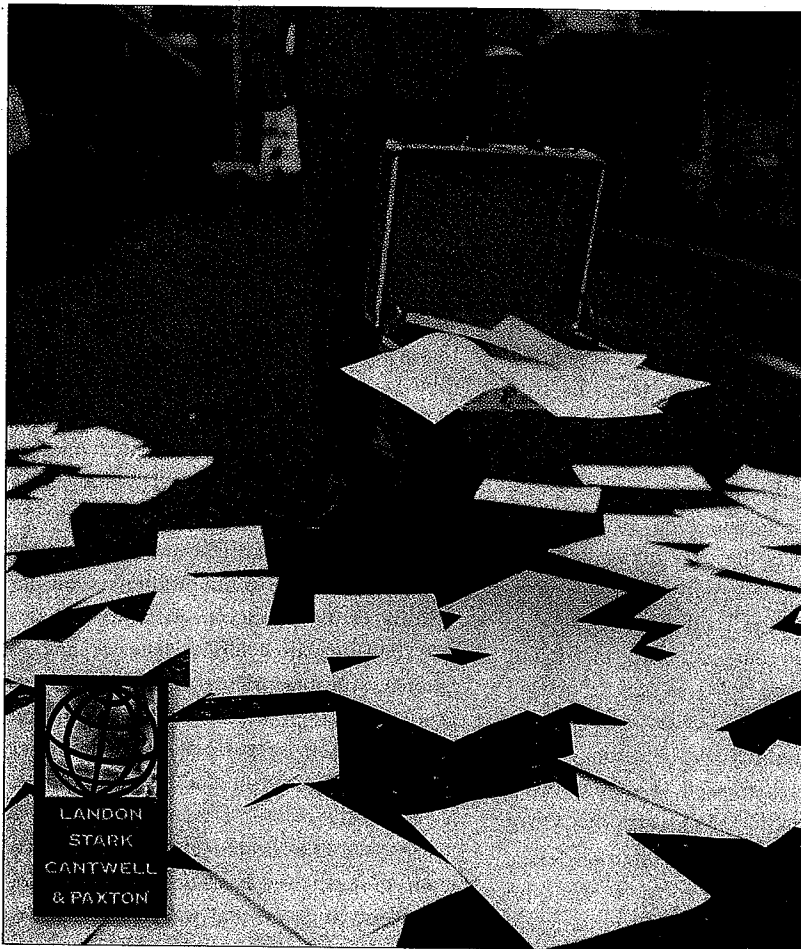
Volume 11, No. 10



Survey of IP Monetization Techniques

NEW METHODS OF EXTRACTING IP VALUE

By Chad Huston



Should Have Gotten A **WEB WRAPPER™**

With Web Wrappers™, there's no reason to ever copy, carry, mail, sort, or spill a 600-page patent file history again. Available online and on CD-ROM, Web Wrappers are fully indexed and searchable electronic file histories that will put an end to the paper chase.

E-mail it. Download it. Search it. Print it. Share it. **Try It.** For a limited time only, Web Wrappers are **FREE** when you purchase a patent file history.

Landon Stark Cantwell and Paxton

Call 703-486-1150 or visit
www.landonstark.com today.

Revisiting the Cost of Bad Patents: For Whom is "Rational Ignorance" Rational?

BY JONATHAN D. PUTNAM AND ANDREW B. TEPPERMAN

Jonathan D. Putnam is Assistant Professor of the Law and Economics of Intellectual Property at the Centre for Innovation Law and Policy, Faculty of Law, University of Toronto, and a Vice President at Charles River Associates. Professor Putnam holds a Ph.D. in economics from Yale University. (Contact: Faculty of Law, University of Toronto, 84 Queen's Park, Toronto, ON, M5S 2C5, tel: (416) 946-7468, Jon.Putnam@utoronto.ca.) Andrew B. Tepperman is a Senior Associate in the Intellectual Property practice of Charles River Associates, based in the firm's Toronto office. Dr. Tepperman holds a Ph.D. in economics from the University of Toronto. (Contact: Charles River Associates, 80 Bloor Street West, Suite 1501, Toronto, ON, M5S 2V1, tel: (416)

413-4084, fax: (416) 923-0970, atepperman@crai.com.) Following the recent acquisition of InteCap, Inc., Charles River Associates has emerged as the preeminent provider of economic, valuation and strategy consulting services in intellectual property and complex commercial disputes.

INTRODUCTION

Many observers have argued that, for various reasons, the U.S. Patent and Trademark Office (PTO) is allowing substandard patents that are either invalid or have claims that are excessively broad. Criticisms of business method patents have been particularly acute.¹ A recent Federal Trade Commission (FTC) report on the balance of competition law and the patent system makes clear that a range of industry participants, including those in the

biotechnology and computer hardware sectors, have concerns about the quality of issued patents.²

Opinions on the severity of the problem differ, as do suggestions over the form any solution should take. Because so few issued patents are litigated or licensed, one respected legal scholar has argued that it is irrational to devote more resources to examine the (very large number of) patent applications that the PTO receives each year.³ Rather, the validity and scope of those patents that actually matter can be determined conclusively in the context of litigation, with far lower costs to society. In other words, the PTO is "rationally ignorant" of the validity and scope of the patents that it issues. The FTC has taken a slightly more nuanced view, favoring increased funding to the PTO but supporting the position that private litigation is probably the most efficient means of eliminating bad patents.⁴

In each case, the perceived problem drives the proposed solution. If we as a society only care about the quality of some subset of patents that actually "matter," then litigation may be the most efficient solution. But whether a patent "matters" is only

partly related to its owner's actual experience with enforcement. Patents offer economic benefits to their owners, and impose economic costs on rivals, long before any legal controversy arises between two parties, and often in the absence of any such controversy. In this article we describe additional economic problems caused by poor quality patents. These problems imply that, in a sense, all issued patents "matter". Very simply put, bad patents introduce noise into investment, valuation and contracting decisions when agents cannot tell good patents from bad at low cost. A high incidence of bad patents distorts investment and other decisions away from high-quality inventions, and undermines the purpose of the patent system: to promote progress.

A rising incidence of bad patents creates two distinct types of efficiency problems. First, patents that are actually good will be discounted, because the incidence of bad patents is known to be high, which induces underinvestment in such patents. Second, patents that are actually bad will earn returns that are incommensurate with their true value, which induces excessive expenditures in pursuit of such patents. In both cases, bad patents that the PTO grants to some patentees impose costs on other economic actors.

When one agent imposes costs on another without paying for them, economists call this a "negative externality." The classic example is pollution. Negative externalities are inefficient because they imply that too much of one good is produced, and not enough of some other good. For example, a polluting steel mill that does not take account of the social cost of its pollution produces too much steel, while the lake that receives the pollution produces too few fish. Generally speaking, the government's environmental policy comprises two types of laws: (1) efforts to force polluters to bear the social costs of their pollution (by creating causes of action for those harmed by pollution); and (2) when it is impossible to trace the source of harm to a particular entity (as in the case of acid rain), the government "internalizes the externality" by regulating the total amount of pollution. From an economic perspective, government regulation substitutes for private behavior when the costs borne by individuals diverge from the costs they impose on others.

In the case of patents, there is an obvious conflict between a patent applicant and

his rivals. The applicant wants the broadest protection possible. Most applicants choose at least some degree of "rational ignorance" about the prior art.⁵ On the other hand, the applicant's rivals want to give him the narrowest protection possible. Generally speaking, neither the applicant nor his rivals has the incentive to claim an invention accurately in light of the prior art; each would, if given the opportunity, impose costs on the other by distorting the scope of the invention away from the true value. As in the case of an ideal environmental policy, an ideal patent law balances the interests of the inventor and his rivals for the greater common good. In economic terms, the PTO is the only entity that can internalize these externalities at low cost. "Rational ignorance" may be a reasonable *private* strategy, but it is an inefficient *social* policy. The PTO is not a private entity. We therefore differ with some recent analysts by arguing that economic efficiency requires increased resources to be devoted to the USPTO to ensure that fewer poor quality patents are issued.

INEFFICIENCIES RESULTING FROM BAD PATENTS

Many have observed that patent protection creates gains for society by enabling "markets for technology".⁶ Patents become assets that are valued because they represent claims on a stream of possible income. In biotech and semiconductor design, for example, patents enable start-up firms to access much-needed venture capital to fund additional R&D.⁷ Acquisitions and sales of patents are also common across a range of industries.

Unfortunately, when parties know that poor quality patents are routinely issued, but cannot tell at low cost whether a given patent is good or bad, transactions in the market for technology may suffer.⁸ Consider a stylized transaction in which party A has received a patent and needs an investment by B to continue R&D in the hopes of commercializing a product.⁹ (B's "investment" can be interpreted either as an equity stake in the company or as an acquisition of the patent.) Suppose that the claims as written, if valid, cover an invention that will realize additional future cash flows of \$20 million (in discounted present value). If the patent were found invalid, assume that future cash flows are zero (because the same technology is freely available to any competitor).

We assume these are the only two possibilities. Suppose also that because both A and B know the PTO issues a large number of bad patents, and neither knows the quality of this patent, they regard each possibility as equally likely. Then the expected cash flow from this patent is \$10 million.

As in the case of pollution, this situation causes two symmetric problems: too much of one good, and not enough of the other. First, good patents will receive less than they deserve. For instance, B will be willing to invest at most \$10 million, whereas if B could determine that the patent was valid prior to investment B would invest up to \$20 million. If the project requires \$12 million for commercialization, B will not invest. The source of the problem is not the validity of the patent in question, but the fact that the patent office issues *other* bad patents, and that private agents cannot tell good from bad at low cost. This is a loss to society caused by the parties' beliefs that there is a high likelihood that the claims are not valid.

Second, the issuance of bad patents leads to inefficient behavior on the part of inventors. Suppose that prior to this technology transaction, inventors like A incur both R&D costs and patent filing costs. Assuming that filings costs are small relative to R&D costs, then uncertainty over patent quality will induce many inventors to seek patent protection even for "inventions" that careful inspection would show to be invalid. In our highly stylized model such inventions are valued at \$10 million even though in fact they are worthless and do not justify the filing costs. This is inefficient, "rent-seeking," behavior, which does not confer any offsetting gains to society. Such behavior might go some distance toward explaining the tremendous surge in patent applications (and issued patents) that took place over the past two decades, and that is otherwise difficult to explain.¹⁰

This very simple economic model has another interesting implication. We have assumed that if a patent is actually invalid, litigation will establish that fact with certainty some time after the transaction, and drive profits to zero. The prospect of that outcome is what generates the first type of inefficiency (underinvestment in good patents). If competitors merely thought there was some chance the patent might be invalid, but did not want to risk being found to infringe (as commonly happens),

expected profits might be much greater than zero.¹¹ In this case the first type of inefficiency disappears – projects will be undertaken regardless of whether the patent is good or bad – but the second type of inefficiency (overinvestment in bad patents) is made worse. There will be an even greater incentive to engage in rent-seeking if inventors think they will make money on both good and bad patents.

There are other, less obvious, inefficiencies that could be captured in a more sophisticated model. For instance, there is an incentive for parties like B to spend time and money investigating whether they are paying for a high or low-quality invention. While some due diligence is nearly always required, the problem is that B must duplicate at least some work that could have been done at lower cost by the PTO; if there are many prospective buyers, each of them must conduct a duplicative investigation. Furthermore, there is also an incentive for A to discover whether he has a high or low-quality invention. If he finds that his invention has high quality, he still has to convince B. To do so, he may engage in potentially costly methods of “signaling” the patent’s quality to B, in an effort to receive an investment of \$20 million rather than \$10 million. For instance, A might try to patent extensively in the same technology area to indicate a very fertile, and therefore valuable, invention. Economists view signaling as a plausible, though costly, method of averting market failures that can sometimes occur when one side of the transaction is more informed than the other.¹² These indirect expenditures on signaling could be avoided if the parties could observe the quality of the invention directly.

SOLUTIONS

Litigating and other procedures to oppose allegedly bad patents are not complete solutions to these problems. These methods are sporadic, piecemeal and delayed, relative to the economic decisions that patents induce, to affect transacting parties’ beliefs about the likely “average” quality of technology in the market. Furthermore, since transactions involving patents often occur quite early in a patent’s life, there may not have been enough similar patents invalidated to reassure the parties that the patent in question is likely to be good.

The only real solution to these problems is to make sure that the PTO has the

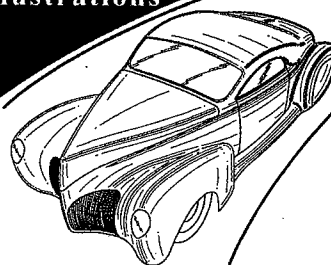
ProTek Patents, Inc. Patent and Technical Illustrations

109 Ninth Street
Milford, PA. 18337
Tel: (570) 296-5152
Fax: (570) 296-5320

getinfo@protekkpatents.com
www.protekkpatents.com

Computerized
Graphics
Since 1987

Drawings Guaranteed
to be allowed. 20 years experience.
Call or e-mail for pricing



Drawings
Via E-Mail

- ◆ Utilities & Designs
- ◆ Trademarks
- ◆ Foreign
- ◆ Digital Photography
- ◆ Court Exhibits
- ◆ Technical Manuals
- ◆ Use of your Cad Files
- ◆ 3D Drawing Models
- ◆ Medical Illustrations

resources to keep most bad patents from reaching the market. The issuance of poor quality patents causes an externality to transacting parties which largely cannot be otherwise internalized. We emphasize that it is not optimal to expend resources until no low-quality patents slip through; like most economists, we view the optimal solution as one which increases resource expenditure until the marginal social benefit of reducing bad-quality patents is equal to the marginal social cost of increased resource expenditure. We simply seek to point out that the marginal social benefit of eliminating bad patents may be much larger than the marginal benefit to any private entity. Given that, the PTO should not act as a private entity, in “rational ignorance” of patent quality, but should seek to be efficiently informed and to provide a socially efficient level of patent examination. **(IPT)**

ENDNOTES

1. See Robert P. Merges, “As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform,” *Berkeley Technology Law Journal*, Vol. 14, 1999; Lawrence Lessig, “The Problem With Patents,” *The Industry Standard*, April 23, 1999; Josh Lerner, “Where Does State Street Lead? A First Look at Finance Patents, 1971 to 2000,” *Journal of Finance*, Vol. 57, 2002.
2. Federal Trade Commission, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*, October 2003 (“FTC Report”), Ch. 3.
3. Mark A. Lemley, “Rational Ignorance at the Patent Office,” *Northwestern University Law Review*, Vol. 95, 2001.
4. FTC Report, Executive Summary.
5. Generally speaking, an applicant will undertake at least a minimal search of the prior art before drafting his claims. But he has no duty to do so. Moreover, nearly all applicants are “rationally ignorant” to some degree, in the sense that they stop searching for prior art at some point because the expected gains from becoming better informed are outweighed by the cost of the additional information. “Rational ignorance,” and the incentive

for over-claiming, are reflected in the common claiming strategy of drafting broader claims than the PTO is likely to grant, then negotiating for narrower claims based on the patent office’s own search (which includes superior information, given its access to pending patent applications). “Rational ignorance” also lies behind the current perverse case law regarding the determination of willfulness in an infringement action: because a finding of willfulness depends in part on whether the defendant is aware of the asserted patent, firms are advised to ensure that their R&D staff *not* read patents that may be asserted against the firm.

6. Ashish Arora, Andrea Fosfuri, and Alfonso Gambardella, *Markets for Technology: The Economics of Innovation and Corporate Strategy*, MIT Press, 2001.
7. FTC Report, Ch. 3; Bronwyn H. Hall and Rosemarie Ham Ziedonis, “The Patent Paradox Revisited: An Empirical Study of Patenting in the U.S. Semiconductor Industry, 1979-1995,” *RAND Journal of Economics*, Vol. 32, 2001.
8. To keep the exposition simple, we focus here on transactions for patents that have already issued. But the same arguments apply to the R&D decisions that rival firms must make when confronted by potentially bad patents. Bad patents distort these decisions because, for example, they foreclose avenues that are in fact open, or they fail to disclose the means of reproducing the invention, leading duplication of effort. The Supreme Court of Canada recently addressed the question of how speculative a patent’s claims could be in *Apotex Inc. v. Wellcome Foundation Ltd.*, [2002] 4 S.C.R. 153, 2002 SCC 77.
9. We treat A and B as separate entities to isolate the decisions they must make; in general, the problem is the same even if the patentee is also the investment decision-maker.
10. Samuel Kortum and Josh Lerner, “Stronger Protection or Technological Revolution: What is Behind the Recent Surge in Patenting?” *Carnegie-Rochester Conference Series on Public Policy*, Vol. 48, 1998.
11. A prevailing defendant who invalidates a patent creates benefits for others as well as himself, thus conferring a “positive externality” on them. As a result, any individual defendant may not have sufficient incentive to litigate a bad patent. Knowing this, the value of a bad patent is higher to a patentee.
12. The classic signaling reference is A. Michael Spence, *Market Signaling*, Harvard University Press, 1974.