Why The U.S. Patent Office Is A National Problem

BY Henry R. Nothhaft

In this excerpt from the new book *Great Again*, author Henry R. Nothhaft illustrates how the dysfunction at the United States Patent and Trademark Office is imperiling not only entrepreneurial inventors, but the economic recovery as a whole and even America’s global innovation leadership.

Since 1992, Congress has diverted nearly $1 billion in applicant-paid fees already earned by the USPTO to other uses (such as to help pay for the 2010 census), leaving the patent office understaffed, under-resourced, and wholly unable to deal with the threefold increase in patent applications over the last twenty years.

As a result, the patent office now takes an average of 3.7 years to rule on a patent--and many applications take 6, 7, or even more years. As of January 2011, the total number of patent applications waiting for approval was a staggering 1.2 million--three times the number just ten years ago. More than half of these applications had never even had an initial review. Simply put, this threatens America’s future. According to the 2008 Berkeley Patent Survey, 76 percent of venture-backed start-up entrepreneurs and 67 percent of all start-up entrepreneurs say patents are vital to obtaining financing from venture capitalists and other investors. Similarly, Jerry Cao of Singapore Management University and Po-Hsuan Hsu of the University of Connecticut found that start-ups with patents attract larger and more experienced venture capital investors and “significantly larger amounts” of investment.

A third recent study conducted by the consulting firm IPVision in association with the MIT Sloan School of Management found that strong patents were closely associated with start-up success. “It is the intellectual property that [provides] the basis for investors to place their resources at risk,” wrote Mario Cardullo, counselor for technology and entrepreneurship within the International Trade Administration of the U.S. Department of Commerce.

In other words, no patent often means no venture financing--and no way for start-ups to create the new products, new jobs, and new industries of tomorrow. Even Gary Locke, President Obama’s Secretary of Commerce, who oversees the USPTO, concedes that this situation is untenable. “This delay causes uncertainty for inventors and entrepreneurs and impedes our economic recovery,” he told one newspaper. No kidding. By eroding the certainty of patent protection, it also undermines the economic incentives for innovation itself, if for no other reason than that it reduces the likelihood that entrepreneurs and investors can realize a return on all their hard work and investment.

Starved for funds and resources, and hamstrung by a nearly 50 percent turnover rate among its underpaid examiners, the USPTO in previous years tried to deal with this backlog through policies that can only be described as Kafkaesque. First, it suddenly cut its allowance rate on patents from the 65 percent rate that had prevailed during the previous
three decades to barely 40 percent in 2007–2008. In other words, some experts say, the agency arbitrarily denied patents to deserving innovators just to reduce the backlog of waiting applications.

Interestingly, the surprisingly effective new director of the USPTO, David Kappos, has promised to change that practice. Already there are signs that the allowance rate is beginning to inch back up to historic levels.

The patent office also tried to clear the logjam by "accelerating" the examination of a small business’s patent— but only if that business agreed to abandon another application it filed. Says Buzdum: "For small entrepreneurs like us, this is like burning the furniture to keep warm. We're not a big company. We don't have a lot of extra money to file trivial or frivolous patent applications the way giant patent factories like Microsoft and IBM do. If we're going to spend thousands of dollars to apply for a patent, it's because it's vital for our business."

The dysfunction at the patent office has hamstrung entrepreneurs across a wide range of industries. Consider the case of the biotech start-up MatriLab, which had developed a wound-healing gel based on technology licensed from the University of Wisconsin in 2002. The company won the Wisconsin Governor's Business Plan Contest and was led by Kathleen Kelleher, an entrepreneur with twenty-five years’ experience in the biotech industry, including stints as chief operating officer for Amarillo Biosciences, senior director of corporate licensing at Searle Pharmaceuticals, and vice president of planning and business development at Curative Technologies.

"The technology was originally developed by Dr. John Kao, a brilliant and highly respected professor of pharmacy and biomaterials at the University of Wisconsin," Kelleher explains. "We felt our product had real potential in the $100 million market for the treatment of burns as well as diabetic ulcers, and in joint repair and regenerative medicine."

But there was a problem. Because the company couldn't get its patent approved or even examined, it was unable to attract the new investment it needed to commercialize the product. Potential investors, after all, wanted to be assured that this start-up had some degree of exclusivity for its product before putting money into the company. So in 2007, five years after it filed its patent application for the wound-healing gel, MatriLab went belly up.

In the end, the USPTO did eventually issue the patent—but only seven years after MatriLab's application was filed, two years after the company went bankrupt, and too late to save a promising new health innovation that might have done the public some good. "I'll be the first to admit that getting a new company and new product off the ground is challenging in the best of circumstances," concedes Kelleher. "But because the patent office works like molasses, it made a challenging situation totally impossible. It's a shame, too, and not just for MatriLab. Our new treatment might have helped a lot of people."

Says Kao, the inventor of MatriLab's wound-healing technology, "The fact that we were engaged in meaningful discussions with venture investors and industry partners shows that our technology had real value. But without a patent, they could not move forward with us." In other words, in many cases even the most innovative medical discovery in the world and
a dollar will barely get you on the bus if you don’t have a patent that can attract the funding you need to commercialize that discovery and get it into the hands of patients who need it.

The impairment of the patent office affects innovators not only in Wisconsin, of course, but all over the nation as well, including in the heart of Silicon Valley itself. Just ask Vern Norviel, a partner in the highly regarded Silicon Valley law firm of Wilson Sonsini Goodrich & Rosati, where he leads the patents and innovation counseling practice. The former general counsel at Perlegen Sciences, a biotech start-up that scans the human genome for new therapies, as well as at the publicly traded biotech firm Affymetrix, which pioneered the use of DNA chip technology, Norviel is intimately involved with some of the most exciting innovations in life sciences today. And to say he is frustrated with the impact that USPTO dysfunction is having on the development of new medical treatments is an understatement.

"Over the last few years, all my life sciences companies have either been slowed down or stopped by problems with the patent office," Norviel declares. "And I mean all of them. That's because in this field it's absolutely necessary to have a bulletproof patent. It can cost a billion dollars to bring a new drug to market, and no one is going to invest that kind of money unless they know they've got exclusive rights to it and can get a return on their investment."

He mentions one company in particular that he's working with, Innate Immune, whose experience, he said, "just makes me mad at a very visceral level." In the first place, says Norviel, "They have a new treatment for lupus that is clearly patentable--I mean, if anything is patentable, this is it. It was invented by a world-famous immunologist at Stanford named Sam Strober. But it's also personal for me. I have a former girlfriend from many years ago and she got lupus. It's very tragic, because this is a horrible disease. For some people it's deadly. And there's no treatment for it, just steroids, which only treat some of the symptoms and can be very damaging to the body."

He pauses a moment. "So here this company has the first drug that might really treat this disease, and they can't get a patent. They've been waiting seven years for it! They had venture investors ready to give them $30 million to move the drug toward clinical trials. But without a patent, they backed out. So now the company survives on little bits of friend and family money." Innate Immune's CEO is Dr. Andrew Perlman (Strober serves on the board), a man who has helped lead several successful biotech companies in the past, including as senior director of clinical research at Genentech. According to Perlman, Innate Immune also had a corporate partnership in the works with a large drug manufacturer, but as he puts it, "their attorneys were alarmed that we did not have the patent, so the deal fell through."

Again, no patent means no business--and no help for suffering patients. "With some people, the only manifestation of their lupus is a characteristic skin rash," Perlman explains. "But many other patients manifest their lupus with kidney failure that ultimately requires them to go on dialysis or need a transplant. It can also cause cardiac disease or central nervous system disease. So it can definitely be life threatening."

Recently, one of Innate Immune's patents finally issued. But what if the firm had gotten its patent in reasonable time? "Had the patent office worked like it's supposed to, our drug
would be in clinical testing by now. How great would that be for people? But now? Well, I can't say how many more years it will be before we can get this treatment out to people." Meanwhile, three thousand miles away in Florida, Roger Hoffman, with thirty-six patents to his credit, is probably America's most prolific inventor of environmental technologies for the paper and water treatment industries.

Like the other innovators profiled here, Hoffman is not just some crackpot inventing a new method for exercising a cat (yes, there really is a patent for that). As chief operating officer of a paper mill in the 1970s, he invented technology that enabled his firm to become the first in the world to discharge absolutely no contaminated waste--technology that is now widely used throughout the industry. He was a founder of the National Office Paper Recycling Project involving firms such as IBM, Xerox, and Eastman Kodak, and he also put his expertise to work helping companies as diverse as Walmart and McDonald's change their environmental practices. He has received numerous awards, including one from the Environmental Protection Agency, and was honored in 1991 by the first President Bush in a Rose Garden ceremony for his outstanding innovations in the environmental field.

When he became an entrepreneur and founded Hoffman Environmental Systems in 1993, Hoffman says, the patent office worked efficiently on behalf of innovators. "One of my water management patents issued in eleven months," he recalls, "which was important in enabling us to generate earnings from our discoveries and keep inventing." But over the past decade, the system has gotten jammed up, with some of Hoffman's patents taking up to eight years to issue. He describes one particularly galling experience:

_We had one patent that, even after several years, was just going nowhere at the USPTO. We finally called up the examiner who was reviewing it, and he gave us verbal notice of allowance that it was going to issue. Well, months go by, and we still hadn't gotten the official notice. So we called the examiner back--and kept calling every few weeks--leaving voice mail for him each time. Still we heard nothing. Finally, we called his supervisor to find out what was going on. And the guy says, "Oh, sorry, but that examiner no longer works here. I guess we should have turned off his voice mail." Gee, you think? Anyway, the kicker was that the supervisor then says, "Well, unfortunately, we have to start all over with the examination." Unbelievable. So that was three more years wasted until it issued._

What makes the whole process worse, Hoffman insists, is that the patent office now publishes two-thirds of all patent applications for all the world to see eighteen months after they are filed. Because of this, he claims, his discoveries have been stolen by large companies. Hoffman says he has been involved in litigation with two of the biggest paper manufacturers in the world for infringing his patents. One of them, Georgia Pacific, settled a few years ago. But he remains embroiled in an extended legal battle with International Paper, which has used its immense financial resources to attempt to drown him in litigation costs, hoping he'll give up the fight.

As economist and 1996 Ross Perot vice presidential running mate Pat Choate wrote in the Huffington Post, "America's largest corporations are using a business technique called 'efficient infringement' [whereby] they calculate the benefits of stealing someone else's patented technology against the possibility of being forced to pay damages."
And they can't be forced to pay, of course, if the victim can't get his patent issued. For his part, Hoffman says he never wanted to be a litigator. He just wanted to be an inventor, which he considers a noble profession. "I'm sixty-five years old now," he says. "Do I really want to spend the last years of my life and all my resources fighting the bastards who are stealing my inventions? The whole situation just breaks my heart."

And what of the tens of thousands of small business entrepreneurs who don't have the resources to commercialize their own inventions without investor financing, or to wage a multimillion-dollar legal fight against a multinational corporate infringer? As former patent examiner John White, now a patent attorney representing small businesses, told Milwaukee Journal Sentinel reporter John Schmid: "This story is repeated thousands of times. Many entrepreneurs have no choice but to give up on their dreams."

Reprinted by permission of Harvard Business Review Press. Excerpted from Great Again: Revitalizing America's Entrepreneurial Leadership by Henry R. Nothaft with David Kline. All rights reserved.