



*The Small Business & Entrepreneurship Council's
Intellectual Property and Small Business Policy Series*

February 2008

Patent Reform: Protecting IP, Enabling Innovation, & Bolstering Entrepreneurship

by Raymond J. Keating
Chief Economist
Small Business & Entrepreneurship Council

Small Business & Entrepreneurship Council
2944 Hunter Mill Road • Suite 204 • Oakton, VA 22124
Telephone: 703-242-5840 • Fax: 703-242-5841
Website: www.sbecouncil.org

Table of Contents

Executive Summary	p. 3
Introduction	p. 5
Economics and History	p. 6
IP and the Founders	p. 7
IP and Today's Economy	p. 7
IP and Small Business	p. 9
Patent Problems	p. 11
Patent Reform	p. 22
Conclusion	p. 24
Index A: Patent Reform Act of 2007	p. 26

Executive Summary

An effective and efficient patent system is vital for entrepreneurs and the U.S. economy. Unfortunately, the current system is outdated and flawed, which has led to higher costs, uncertainties and legal challenges for smaller firms.

The good news is that the U.S. Congress is addressing key deficiencies in the patent system. The House passed H.R. 1908, the Patent Reform Act, late last year and the Senate will soon consider its own version of the Patent Reform Act (S. 1145). This legislation, if enacted, will bring the U.S. patent system into the modern era. Most critically, it advances positive reforms for our nation's small businesses.

This report, **Patent Reform: Protecting IP, Enabling Innovation, & Bolstering Entrepreneurship**, reviews the historical and economic rationale for protecting IP; the economic significance of innovation and IP industries; the central and growing role small firms play in the innovation economy; the problems facing our patent system; and the needed reforms that will produce a more effective patent system.

Key highlights of the report:

IP-Based Industries Promote Innovation and Economic Growth: Protecting intellectual property (IP) is central to U.S. economic growth, competitiveness and our innovative capacity.

- As noted in the *Economic Report of the President 2006*, intellectual property industries, that is, those “highly dependent” on patent or copyright protections, “represented approximately 17.3 percent of total U.S. economic activity and approximately one-fifth of private economic activity” in 2003. The report found that, in all, the value of IP in the U.S. could top \$5 trillion.

Patent Reform is Critical to Leveraging and Protecting Inventions/Innovation in Small Firms: America's small businesses are the wellspring of innovation, invention and jobs. A patent system that affordably and effectively protects their IP would enhance and encourage high-value activity and innovation in the entrepreneurial sector. Consider, for example:

- A 2003 U.S. Small Business Administration's Office of Advocacy report, which found that “small patenting firms produce 13-14 times more patents per employee as large patenting firms.” An Advocacy study in 2004 reported on the growing technological influence of small firms, and in particular the rise in the number of highly productive inventors at smaller firms. Meanwhile the share at large firms fell.
- A Congressional Research Service Report underscored the fact that smaller entities constitute a significant source of innovative products and services and therefore “entrepreneurs and small, innovative firms rely more heavily upon the patent system than larger enterprises.”

- Most firms in IP-based industries are smaller businesses (See Table 1) and many small firms have their economic well being tied to serving larger firms. Small businesses also need a patent system that allows productivity enhancing products to quickly make their way into the marketplace.

The Current Patent System Faces Numerous Problems: Current shortcomings in the U.S. patent system have erected legal and cost barriers for small firms. These problems include, but are not limited to, a decline in patent quality; high litigation costs; and differences among nations in terms of patent law. Also, the U.S. operates under a different standard than the first-inventor-to-file system used in the rest of the world, which poses challenges for U.S. firms, particularly smaller ones.

- **Lack of Patent Quality:** Many point to examples whereby the quality of patents has declined, in particular, failing to meet an adequate or rigorous enough test for being nonobvious. This raises questions and potential costs for the small business community.
- **The U.S. First-to-Invent System is Ambiguous and Costly:** On an issue of both international and domestic importance, the U.S. grants patents on a first-to-invent basis, rather than the first-inventor-to-file system the rest of the world follows. First-to-invent is inherently ambiguous and costly, and that's bad news for small businesses and individual inventors.
- **Patent Litigation is Out-of-Control:** The legal system is plagued by excessive, abusive and costly patent litigation. Large firms have the legal resources to better weather litigation, while just one lawsuit can terminate a small, entrepreneurial firm.

What Patent Reform Must Include: A successful reform initiative will include the following elements to help promote an effective patent system: prior art reforms that boost patent quality and reduce costs; litigation reforms to reduce costs and promote fairness; altering incentives in the Patent Office to reduce waste and enhance quality; international harmonization; and moving to a first-inventor-to-file system. The Patent Reform Act includes these essential measures.

Patent Reform is Needed Now: In the 21st century global economy, the major advantages of the United States are our entrepreneurial skills and abilities to innovate. In order to fully capitalize on this competitive edge, we must protect intellectual property in a rigorous and cost effective way. The Patent Reform Act is an important step in achieving this serious goal.

The Patent Reform Act offers some major, positive strides in reforming our patent system to fit the economic, market, technological and legal realities of the 21st century. Congress has been wrestling with patent reform legislation for several years now, and the opportunity for substantive changes that would benefit entrepreneurs, small businesses and our economy is at hand.

Patent Reform: Protecting IP, Enabling Innovation & Bolstering Entrepreneurship *

Introduction

In a February 2004 speech at the Stanford Institute for Economic Policy Research Economic Summit in California, then-Federal Reserve Board Chairman Alan Greenspan observed: “Market economies require a rule of law. A society without state protection of individual rights, especially the right to own property, would not build private long-term assets, a key ingredient of a growing modern economy.”

Indeed, in any economy, a critical role played by government is the protection of private property. Property rights provide a necessary foundation for what might be called the four “I’s” – investment, improvement, innovation, and invention. After all, why invest, improve, innovate or invent, if others are free, in effect, to steal those investments, improvements, innovations or inventions? There must be the expectation of a return for one’s labor and capital.

In turn, the four “I’s,” of course, help drive economic development and growth. But property rights do not stop with physical property. They extend quite naturally to intellectual property – or IP – as well, such as the works of authors and inventors, as well as trademarks. Indeed, given the United States’ comparative advantages in entrepreneurship and innovation, protecting intellectual property is crucial.

And when you’re talking about the four “I’s” and economic growth, small business plays the central role. Indeed, simple mathematics tells us that this is the case. After all, as the U.S. Small Business Administration’s Office of Advocacy points out, out of the estimated 26.8 million businesses in this country, 99.9% have fewer than 500 employees. Small business is big business in the U.S., and smaller firms are the wellspring of innovation, invention and jobs.

It is, therefore, critical to small business and our economy in general that our patent system works effectively and efficiently. Patent reform is needed for small businesses and individual inventors who seek patents in order to clarify and simplify the system; properly protect legitimate patents; and reduce costs – including on the litigation and international fronts – in the system.

But what about most small businesses that are not involved directly with patents? They also benefit from a patent system that issues high quality patents, that spurs innovation and invention, and that reduces costs. Far too many small businesses understand how devastating unsubstantiated lawsuits can be, and how the threat of litigation can restrain investment and growth.

In the 21st century global economy, the major advantages of the United States are our entrepreneurial skills and abilities to innovate. In order to fully capitalize on this competitive edge, we must protect intellectual property in a rigorous and cost effective way.

* This is an updated and expanded version of an August 2006 paper titled “IP, the Four ‘I’s’ and Patent Reform.”

Economics and History

Indeed, some quick reminders on the economics and historical fronts are needed to make clear that protecting IP is a foundational issue for our economy.

As noted in SBE Council's February 2006 publication, "Innovation and Intellectual Property: The Economics and the History," both economic theory and actual economic experience point to the importance of protecting IP. For the purposes of this report, it is worth highlighting two main points previously noted.

First, Milton Friedman, the Nobel Prize winning economist, made the economics case for rewarding creators in his 1962 book *Capitalism and Freedom*:

"In both patents and copyrights, there is clearly a strong prima facie case for establishing property rights. Unless this is done, the inventor will find it difficult or impossible to collect a payment for the contribution his invention makes to output. He will, that is, confer benefits on others for which he cannot be compensated. Hence he will have no incentive to devote the time and effort required to produce the invention."ⁱ

Second, various economic historians have highlighted the relationship in economic history between protecting IP, innovation and economic advancement. For example, in *How the West Grew Rich*, Nathan Rosenberg and L.E. Birdzell, Jr. explained how innovation and economic growth benefited from patents:

"Competition also became involved in innovation. The market rewards of innovation depended largely on the innovator's ability to charge a high price for a unique product or service until such time as it could be imitated or superseded by others. The rewards deepened, in other words, on the innovator's margin of priority in time over imitators and successors. This was true even of patents, which go to the first inventor, and whose economic life is measured by the time it takes to find a better alternative. Given the multiplicity of Western enterprises, the possibility of forming new ones, and the possibility that old ones could shift to new activities, the process of gaining the rewards of innovative ideas takes on the characteristics of a race, informal but still competitive. The competitive nature of the process was intensified by the Western practice of leaving the losers to bear their own losses, which were often substantial. This use of a competitive spur to stimulate change was a marked departure from tradition, for societies and their rulers have almost always strongly resisted change unless it enhanced the ruler's own power and well-being."ⁱⁱ

And in his *Structure and Change in Economic History*, Nobel Prize winning economist Douglass C. North argued that "the Industrial Revolution was an acceleration in the rate of innovation" due to "better specified property rights," which raised "the rate of return on innovating."ⁱⁱⁱ He explained that "throughout man's past he has continually developed new

techniques, but the pace has been slow and intermittent. The primary reason has been that the incentives for developing new techniques have occurred only sporadically. Typically, innovations could be copied at no cost by others and without any reward to the inventor or innovator. The failure to develop systematic property rights in innovation up until fairly modern times was a major source of the slow pace of technological change.”^{iv} North added that “a systematic set of incentives to encourage technological change and raise the private rate of return on innovation closer to the social rate of return was established only with the patent system...”^v

IP and the Founders

Since the birth of this nation, the United States has made clear the importance of protecting IP. Article I, Section 8 of the U.S. Constitution includes that Congress has the power: “To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” In *Federalist XLII*, James Madison wrote: “The utility of this power will scarcely be questioned. The copy right of authors has been solemnly adjudged in Great Britain to be a right at common law. The right of useful inventions, seems with equal reason to belong to the inventors. The public good fully coincides in both cases, with the claims of individuals.”

For good measure, in his first address to Congress on January 8, 1790, President George Washington urged Congress to act to ensure the protection of IP: “I cannot forbear intimating to you the expediency of giving effectual encouragement, as well to the introduction of new and useful inventions from abroad as to the exertion of skill and genius at home.”^{vi} And Congress acted by passing patent legislation in 1790, 1793, and 1836, for example.^{vii}

IP and Today’s Economy

Particularly given the recent era of dramatic technological change, the case for protecting intellectual property is even more important than ever before in this nation’s history.

On July 15, 2005, the Congressional Research Service released an informative analysis (“Patent Reform: Innovation Issues”) of the potential impact of the Patent Act of 2005 (H.R. 2795). This report also neatly explained the impact of a patent system on innovation:

“Patent ownership is perceived to be an incentive to innovation, the basis for the technological advancement that contributes to economic growth. It is through the commercialization and use of new products and processes that productivity gains are made and the scope and quality of goods and services are expanded. Award of a patent is intended to stimulate the investment necessary to develop an idea and bring it to the marketplace embodied in a product or process. Patent title provides the recipient with a limited-time monopoly over the use of his discovery in exchange for the public dissemination of information contained in the patent application. This is intended to permit the inventor to receive a return on the expenditure of resources leading to the discovery but does not guarantee that the patent will generate commercial benefits. The requirement for publication of the

patent is expected to stimulate additional innovation and other creative means to meet similar and expanded demands in the marketplace.”

In the *Economic Report of the President 2006*, one essay, titled “The Role of Intellectual Property in the Economy,” serves as an excellent primer on intellectual property. A few key points were the following:^{viii}

- “Intellectual property industries,” that is, those “highly dependent” on patent or copyright protections, “represented approximately 17.3 percent of total U.S. economic activity and approximately one-fifth of private economic activity” in 2003.
- “Intellectual property accounts for approximately 33 percent of the value” of publicly traded U.S. corporations, and in all, the value of IP in the U.S. could top \$5 trillion. However, this percentage estimate excludes trademarks due to the difficulty in separating the value of trademarks from the value of branding. It is noted that “the combined value of branding and trademarks represents approximately 14 percent of the total value of publicly traded U.S. firms.”
- “Other studies have indicated that intellectual property-related industries tend to grow at approximately twice the rate of the economy as a whole and are an important contributing factor not only to the productivity growth of the intellectual property-related sectors of the economy but also to the growth of all sectors of the economy.”
- It also is recognized that this analysis underestimates the importance of IP, as “many industries that are not counted among the intellectual property industries ... generate innovations and rely on patent and other intellectual property protection to create incentives for innovation and growth.” In addition, the economy still benefits from previous IP advances even though IP protections have expired, and the information and innovations have moved into the public domain.
- Another study mentioned found that 60 percent of inventions in pharmaceuticals and 40 percent in the chemical industry would not have been developed but for the availability of patents.
- Other studies cited in the *Economic Report of the President* point to a “direct link between greater intellectual property protection and capital investment.”

In his February 2004 speech, Greenspan also summed up the increasing importance of IP to the U.S. economy: “Over the past half-century, the increase in the value of raw materials has accounted for only a fraction of the overall growth of U.S. gross domestic product (GDP). The rest of that growth reflects the embodiment of ideas in products and services that consumers value. This shift of emphasis from physical materials to ideas as the core of value creation appears to have accelerated in recent decades.” And a bit later, he added: “If the form of protection afforded to intellectual property rights affects economic growth, it must do so by

increasing the underlying pace of output per labor hour, our measure of productivity growth. Ideas are at the center of productivity growth. Multifactor productivity by definition attempts to capture product innovations and insights in the way that capital and labor are organized to produce output. Ideas are also embodied directly in the capital that we employ. In essence, the growth of productivity attributable to factors other than indigenous natural resources and labor skill, is largely a measure of the contribution of ideas to economic growth and to our standards of living.”

Again, though, keep in mind the fact that out of the estimated 26.8 million businesses in this nation, only about 17,000 have more than 500 employees. IP, invention, innovation, and therefore, patent reform, are largely about entrepreneurship and small business.

IP and Small Business

So, looking at economic basics, economic history, and the current sources of economic growth, the importance of an efficient system for protecting IP should be clear to all. The critical nature of such a system certainly matters a great deal to entrepreneurs and small businesses. In turn, the role of small business is very important in the IP economy.

Several reports published by the U.S. Small Business Administration’s Office of Advocacy highlighted the role of small business in innovation and invention.

- A February 2003 report titled “Small Serial Innovators: The Small Firm Contribution To Technical Change” noted that “small patenting firms produce 13-14 times more patents per employee as large patenting firms.” For good measure, “small patent firms are on average more technically important than large firm patents,” in that the smaller businesses produce “more highly cited patents.” It also was observed that “small firm innovation is twice as closely linked to scientific research as large firm innovation on average, and so substantially more high-tech or leading edge.”
- In January 2004, a study titled “Small Firms and Technology: Acquisitions, Inventor Movement, and Technology Transfer” found that “the technological influence of small firms is increasing” as the number of small firms with 15 or more patents over the previous five years increased from 33% in 2000 to 40% in 2002. Also, from the mid-1990s to the early 2000s, the share of highly productive inventors at small firms rose while the share at large firms fell.

The July 2005 CRS report also highlighted small business:

“Entrepreneurs and small, innovative firms play a role in the technological advancement and economic growth of the United States. Several studies commissioned by U.S. federal agencies have concluded that individuals and small entities constitute a significant source of innovative products and services. Studies have also indicated that entrepreneurs and small, innovative firms rely more heavily upon the patent system than larger enterprises. Larger companies are

said to possess alternative means for achieving a proprietary or property-like interest in a particular technology. For example, trade secrecy, ready access to markets, trademark rights, speed of development, and consumer goodwill may to some degree act as substitutes to the patent system. However, individual inventors and small firms often do not have these mechanisms at their disposal. As a result, the patent system may enjoy heightened importance with respect to these enterprises.”

In IP-based industries, most firms, are smaller businesses. Consider Table 1, which provides firm size data (2005 the latest data from the U.S. Census Bureau) for a sample of industries in which patents play a critical role.

Table 1: Firm Size by Select Patent Industries

<u>Industry</u>	<u>Total Firms</u>	<u>Firms With Less Than 20 Employees</u>	<u>% of Total</u>	<u>Firms With Less Than 500 Employees</u>	<u>% of Total</u>
Manufacturing					
Pharmaceutical & Medicine	1,442	794	55%	1,295	90%
Semiconductor Machinery	223	107	48%	195	87%
Computer & Electronic Product	12,934	8,232	64%	12,347	95%
Electrical Equipment, Appliance, and Component	5,285	3,294	62%	4,979	94%
Motor Vehicle	306	192	63%	268	88%
Aerospace Products and Parts	1,251	710	57%	1,152	92%
Medical Equipment & Supplies	11,408	9,664	85%	11,217	98%
Software Publishing	6,361	4,720	74%	6,163	97%
Telecommunications	9,693	8,110	84%	9,508	98%

These percentages are important to keep in mind when the debate over patent reform – along with a host of other public policy issues – turns on misguided populist notions of big business versus the little guy. First, it must be noted that bashing or punishing big business is not good for the economy or small business. For example, consider how many small firms have their economic well being tied to serving larger firms and their employees. Second, the implicit assumption that all pharmaceutical, software or telecommunications companies, for example, are big businesses is simply not backed up the numbers. Economic reality, again, highlights large percentages of smaller businesses.

So, what does sound patent policy do for these small businesses? Suzanne Michel, the assistant director for policy and coordination in the Bureau of Competition at the Federal Trade Commission, provided an able summary that answers this question: “Patent policy stimulates innovation by providing an incentive to develop and commercialize inventions. Without patent

protection, innovators that produce intellectual property may not be able to appropriate the full benefits of their innovation when competitors are able to ‘free ride’ on the innovator’s efforts. Patents may also encourage firms to compete in the race to invent new products and processes. Following the initial innovation, patent rights may make it easier for inventors to attract funding and develop relationships needed to commercialize the invention. Moreover, the public disclosure of scientific and technical information made through a patent can stimulate further scientific progress.”

Clearly, patents matter to small, entrepreneurial firms. That, of course, means that patents matter to all. To once again provide a reminder of the importance of small business to the economy, the SBA Office of Advocacy reports that small businesses also “employ about half of all private sector employees, pay more than 45 percent of total U.S. private payroll, have generated 60 to 80 percent of net new jobs annually over the last decade,” and “create more than half of nonfarm private gross domestic product (GDP).”

Patent Problems

The real matter lies not with whether or not intellectual property should be protected, but to what extent and how best to protect IP. Greenspan asked the following questions in his February 2004 address:

“If our objective is to maximize economic growth, are we striking the right balance in our protection of intellectual property rights? Are the protections sufficiently broad to encourage innovation but not so broad as to shut down follow-on innovation? Are such protections so vague that they produce uncertainties that raise risk premiums and the cost of capital? How appropriate is our current system – developed for a world in which physical assets predominated – for an economy in which value increasingly is embodied in ideas rather than tangible capital? The importance of such questions is perhaps most readily appreciated here in Silicon Valley. Rationalizing the differences between intellectual property rights as defined and enforced in the United States and those of our trading partners has emerged as a seminal issue in our trade negotiations.”

These are the right questions, particularly the points about encouraging innovation, our economy increasingly embodying ideas, and how IP protections differ among nations.

Patents are supposed to protect an invention, not an idea, that is useful, novel and nonobvious, with the patent period covering 20 years from the filing of the patent application. When it comes to our patent system today, what’s the problem? Major complaints generally fall into the following categories:

- **Lack of Patent Quality.** Many point to examples whereby the quality of patents has declined, in particular, failing to meet an adequate or rigorous enough test for being nonobvious. This raises questions and potential costs for the small business community. Even straightforward business practices can drag a small business into the patent thicket, with broad and poorly defined patents granted for business practices and strategies. And small business innovation is

constrained by the possibility of running afoul of patents that do not pass the test for being nonobvious.

At a 2005 American Enterprise Institute gathering on patent reform, Q. Todd Dickinson from General Electric ably summed up concerns on the issue of nonobviousness:

“Historically, the heart of the patent system has been the obviousness doctrine. This doctrine says that in order to get a patent, a product must be non-obvious to people who are skilled in the art. It has always been the most difficult standard to nail down, but it is also among the most important for the proper functioning of the system.

“One example of an obvious patent was the Selden patent, which was written very broadly as a combination of an internal combustion engine, gears, a steering wheel, and a carriage--a patent on the automobile. The patent was filed by a patent attorney who had made no advance in the creation of gears, carriages, steering wheels, or internal combustion engines. He may have been the first person to put these elements together, although it is impossible to know that with any certainty. But what we can say with confidence is that it was obvious to substitute a lightweight internal combustion engine, measured in horsepower, for a horse. After years of litigation by Henry Ford, the courts came to the same conclusion, and the PTO began to rethink the patent system.

“The theory of obviousness tells us that we should be skeptical when an inventor combines existing products to create something ‘new.’ This happens today with software patents and patents on the Internet. For example, Amazon’s ‘one-click’ patent is for ordering products on the Internet with one click of the mouse. In the mid-1990s, when it was filed, it was new. Now, was this streamlining due to the brilliance of the inventor? Of course not. It was novel, but it was also obvious.”^{ix}

The reasons offered to explain the development of poorer quality patents vary. For example, Dickinson pointed out: “The problem with the current standard is that the federal circuit has enforced it by requiring evidence in prior art that actually suggests the combination of elements. That is an extraordinarily forgiving standard for allowing patents, and a relatively new development in the law. Every commentator who has looked at this standard has recognized that it is inconsistent with the historical standard that the Supreme Court has applied. This is a matter of the substance of the patent system, and we should act upon it now. If we allow obvious patents, we are allowing monopoly restrictions which will reduce competitiveness in the economy with no corresponding benefit in encouraging innovation.”^x

Meanwhile, William M. Landes, professor of law and economics at the University of Chicago, and Judge Richard Posner, appointed in 1981 to the U.S. Court of Appeals of the Seventh Circuit, noted: “The most significant change in the patent area was the creation in 1982 of the U.S. Court of Appeals for the Federal Circuit to be the exclusive patent appellate court, in the expectation ... that it would interpret and apply the patent statute in a way that would strengthen inventors’ rights.”^{xi} They continued later:

“Because of the role the Federal Circuit has played in expanding patent protection, explaining why the legal protection of intellectual property protection has been expanding in recent decades requires consideration of the distinctive political economy of specialized as distinct from generalist judges. Not that the Federal Circuit is completely specialized; its jurisdiction ranges well beyond patent cases. Nevertheless, patent cases are the most important part of its jurisdiction, and a specialized court is more likely to have a ‘mission’ orientation than a generalist court. That has been the experience with the Federal Circuit; it has defined its mission as promoting technological progress by enlarging patent rights. This, in turn, suggests a possible public-choice explanation for the creation of that court. In other work, we have found that the creation of the court was responsible for an increase in the number of patents applied for and granted, but we have not found that the increase has had a positive effect on the rate of technological progress.

“The most certain effect of the creation of the court has been to increase the demand for the services of patent lawyers, a demand positively related to the number of patents granted, for that number in turn induces an increased number of patent applications, all of which require lawyer input. And the patent bar pressed strongly for the new court, though there was some internal tension owing to the fear by patent lawyers outside of Washington, D.C., that the centralization of patent appeals in Washington would give the D.C. patent bar a competitive advantage.

“The creation of the court, whose specialized character and resulting ‘mission’ orientation enabled a prediction that it would favor patents more than the generalist federal appellate courts, may thus have been a consequence largely of interest-group politics.”^{xii}

Viet D. Dinh, an attorney at Bancroft Associates PLLC, and William Paxton, a law professor at Georgetown University and principal of Bancroft Associates PLLC, authored a December 2007 report titled “Patent Reform: Protecting Property Rights and the Marketplace of Ideas.” They noted: “The Federal Circuit has liberalized patent procedural and damages rules in part because it has adopted the view that patent law is unique. Pursuant to this view, it has declined to apply traditional principles of law in the patent context, and has skewed the relevant jurisprudence as a result. Predictably, the Supreme Court has specifically and clearly disagreed with this approach, and has repeatedly reviewed and reversed the Federal Circuit.”

This Supreme Court backlash, if you will, against the Federal Circuit was noted in a *Wall Street Journal* report (“Justices Get Another Shot at Patent Law” by Jess Bravin and Justin Scheck, January 16, 2008). The article noted:

“The Supreme Court largely ignored patent law for years, even as critics were charging that the Federal Circuit had skewed the field too heavily in favor of patent holders, giving them too much power over the marketplace.

“But in the past few years, with a rare degree of unanimity and the backing of the Bush administration, the justices have overturned a series of Federal Circuit rulings. In 2005, the high court ruled that pharmaceutical

researchers could use compounds patented by others if that could help develop new drugs. A year ago, the justices decided companies don't lose the right to contest a patent's validity if they also pay a license fee to use the patent while the challenge is pending. In April, the court found that the Federal Circuit had made it too easy to defend patents, allowing patent holders to collect royalties even for 'obvious' inventions.

"Perhaps most significant, patent-law experts say, was the Supreme Court's 2006 ruling relating to the 'buy-it-now' feature offered by online auctioneer eBay Inc. In that case, the Supreme Court ruled that trial judges can consider less drastic remedies than an injunction, such as imposing a royalty while letting use of the patent continue.

"The Federal Circuit rule had almost always required an injunction if infringement was found, making it 'an exceptionally powerful tool in the hands of patentee plaintiffs,' says Alex Chachkes, an intellectual-property lawyer with Orrick Herrington & Sutcliffe LLP in New York. After the eBay ruling, the amounts of settlements 'dropped in a very stark way,' he says."

Others point to the U.S. Patent and Trademark Office being "understaffed and overwhelmed," and "a good first step would be to beef up the patent agency."^{xiii} But one also cannot and should not forget about the incentives at work in government itself. That is, what are the incentives in the Patent Office? In a March 2006 editorial, *The Wall Street Journal* provided an answer:

"The Patent Office itself gets paid when it grants a patent, creating pressure on the staff to keep the money coming in. Patent examiners' bonuses are also based in part on the number of files they close in a year. But the only way to close a file for good is to grant the patent because an application that's been denied can always be modified and resubmitted, and frequently is. So examiners have a direct financial stake in closing application files by greenlighting the patent. Today the Patent Office grants so many patents that half of the fees it generates are given back to the Treasury to spend on other things."^{xiv}

In February 2007 testimony before the U.S. House Subcommittee on Courts, the Internet, and Intellectual Property, Adam Jaffe, the Fred C. Hecht Professor in Economics and the Dean of Arts and Sciences at Brandeis University in Waltham, Massachusetts, added the following:

"The growth in the sheer magnitude of the patent phenomenon has been breathtaking. The weakening of examination standards and the increase in patent applications has led to a dramatic increase in the number of patents granted in the U.S. The number of patents granted in the U.S., which increased at less than 1% per year from 1930 until 1982 (the year the CAFC [i.e., Court of Appeals for the Federal Circuit] was created), roughly tripled between 1983 and 2001 (from 62 thousand per year to over 180 thousand per year, an annual rate of increase of about 6%). The total number of patents granted peaked at about 187 thousand in 2003, and seems to have leveled off or perhaps declined a bit since then (The 2005 total was 158 thousand; the number for 2006 is not yet available.)

Applications, too, have ballooned, from less than 120 thousand in 1982, to 418 thousand in 2005, with no sign of slowing down.

“While some of this increase appears to reflect real growth in innovation, it is clear that a large part of the increase is a response to the increased laxity of the PTO, which grants a significantly larger fraction of the applications it receives than do its counterparts in Europe and Japan.”

By the way, the number of patents granted, after taking a two-year breather, jumped from just under 158,000 in 2005 to more than 196,000 in 2006, according to the U.S. Patent and Trademark Office. The current system – on both the court and PTO ends – provides incentives to issue lots of patents, though not consistently high quality patents.

• **Litigation Costs.** The system is plagued by excessive and costly litigation. Of course, large firms have the resources to better weather litigation, while just one lawsuit can terminate a small, entrepreneurial firm.

The July 15, 2005, CRS report highlighted numerous problems with the current patent system that hamper innovation, small businesses and the economy. One was the cost of patent enforcement. The report noted:

“Patent enforcement is often expensive. The complex legal and technological issues, extensive discovery proceedings, expert witnesses, and specially qualified attorneys associated with patent trials can lead to high costs. One study published in 2000 concluded that the average cost of patent enforcement was \$1.2 million. These expenses appear to be increasing, with one more recent commentator describing an ‘industry rule of thumb’ whereby ‘any patent infringement lawsuit will easily cost \$1.5 million in legal fees alone to defend.’ Higher stakes litigation is even more costly: For patent suits involving damages claims of more than \$25 million, expenses reportedly increase to \$4 million per side.”

Dr. Mark Meyers, who co-chaired the Committee on Intellectual Property Rights in the Knowledge-Based Economy of the national Academies, highlighted rising litigation costs in his February 2007 congressional testimony: “[L]itigation costs are escalating rapidly and proceedings are protracted. Surveys conducted periodically by the American Intellectual Property Law Association indicate that litigation costs, millions of dollars for each party in a case where the stakes are substantial, are increasing at double digit rates. At the same time the number of lawsuits in District Courts is increasing.”

Dinh and Paxton observed: “One need only look at the trends that have emerged from these liberalized legal and procedural rules—which encourage litigation and judicially coerced settlements—to conclude that reform is necessary. The cost of litigating a patent case has risen to phenomenal levels due to the complex legal and technical issues, extensive discovery, experts, and attorneys associated with infringement suits. For example, one survey conducted in 2005 showed that it cost between \$2.5 million and \$6 million to litigate an infringement suit with more than \$25 million at risk.”

In his congressional testimony, Jaffe explained how both establishing the CAFC and the PTO's revenue structure feed litigation woes:

“The origin of today's problems goes back to 1982, when the process for judicial appeal of patent cases in the federal courts was changed, so that such appeals are now all heard by the Court of Appeals for the Federal Circuit ('CAFC'), rather than the twelve regional courts of appeal, as had previously been the case. And in the early 1990s, Congress changed the structure of fees and financing of the U.S. Patent and Trademark Office (PTO) itself, trying to turn it into a kind of service agency whose costs of operation are covered by fees paid by its clients (the patent applicants). It is now apparent that these seemingly mundane procedural changes, taken together, have resulted in the most profound changes in U.S. patent policy and practice since 1836...

“An unforeseen outcome has been an alarming growth in legal wrangling over patents. More worrisome still, the risk of being sued, and demands by patent holders for royalty payments to avoid being sued, are seen increasingly as major costs of bringing new products and processes to market. Thus the patent system—intended to foster and protect innovation—is generating waste and uncertainty that hinder and threaten the innovative process.”

And a bit later, Jaffee noted how start-up firms suffer due to rising patent litigation costs:

“More worrisome still is a dramatic and inexorable increase since the early 1990s in the rate of litigation around patents. The number of patent cases filed has doubled in a decade and continues to rise. And the cost of defending a patent suit has risen as well; a patent infringement allegation from a competitor can now mean legal fees in the millions. For an under-capitalized startup, this prospect creates an overwhelming pressure to settle even frivolous complaints. Consumers therefore have less access to new products—from lifesaving drugs to productivity-enhancing software—than would be the case if innovative companies were not distracted from innovation by litigation and fear of litigation.”

When it comes to patent reform in general, the ongoing struggle is to find the necessary balance in the system. For example, another problem on the litigation front is “forum shopping,” whereby patent lawsuits are brought in courts with a history of awarding large damages, rather than a court with some reasonable connection to the claim. In the June 15, 2006, *San Jose Mercury News*, Mark Lemley, the William H. Neukom Professor of Law at Stanford University, reported: “Abusive plaintiffs are exploiting jurisdictions that strongly favor plaintiffs even though they have nothing to do with the location of the companies. While seven patent cases were filed in Marshall, Texas, in 2003, 220 infringement actions have been filed since then naming 856 defendants. We should reform the laws governing where suits can be filed, allowing litigation where the plaintiffs or the defendants reside but curtailing ‘forum shopping’ for plaintiff-friendly jurisdictions.”

Dinh and Paxton supplied some background on the “forum shopping” issue:

“Venue has traditionally been designed to ensure there is some recognizable connection between the alleged injury, the location of the parties, and the place in which the lawsuit may be brought. As written, the venue statute applying to patents sought to limit a plaintiff’s choice of forum to the ‘judicial district where the defendant resides, or where the defendant has committed acts of infringement and has a regular place of business,’ and historically, courts held that a plaintiff’s choice of forum was circumscribed by this provision. In 1988, however, Congress adopted a new definition of ‘reside’ applicable to corporations, whereby a corporation is ‘deemed to reside in any judicial district in which it is subject to personal jurisdiction at the time the action is commenced.’ Then, in 1990, the Federal Circuit read this broad definition of ‘reside’ from the general venue provision governing civil suits into the venue provision applicable to patent infringement suits. As a result, many corporations are now subject to personal jurisdiction in any federal district in the country, enabling lawyers to sue in sympathetic ‘magnet jurisdictions’ such as Marshall, Texas.”

Lemley also pointed out that “the standards governing awards of enhanced damages for willfulness are a mess.” He went on to explain:

“‘Willfulness’ in patent law means something different than it does in the rest of the world. More than 90 percent of all patent plaintiffs claim willful infringement, even though most of the defendants in those cases did not copy the invention, but developed their products independently and indeed may never even have heard of the plaintiff or its patent. Under current rules, it costs nothing for plaintiffs to allege defendants were willfully infringing on a patent, and they have a strong incentive to make such a charge because a finding of ‘willfulness’ triples the award they can collect.

“By merely sending a carefully crafted letter telling companies about a patent, plaintiffs can force those companies into an expensive Catch-22. Either they must conduct internal audits and be willing to give up their attorney-client privilege or they risk being declared willful infringers for continuing to sell products they designed in good faith and without knowledge of the patent. Changing the law so that defendants who copy a technology from a patentee have to pay punitive damages, but others do not, would help restore fairness to the patent system.”

- **Excessive Damage Awards.** In April 2007 congressional testimony, Anthony Peterman, director and patent counsel at Dell Inc, laid out the ills of excessive and unjust damages in determining harm to patent holders. He noted four issues: 1) “Excessive damage awards promote patent litigation over settlement of disputes. Why should a party negotiate a fair price for a patent, when they have a good chance of getting a much higher price awarded in court?” 2) “Excessive damage awards encourage speculation in patents. Escalating awards encourage persons to treat patents like lottery tickets;” 3) “Excessive damages protect questionable or weak patents by enabling plaintiffs to use the threat of a huge damages award to force settlements on patents that should be invalidated;” and 4) “Excessive damages calculations reward patent owners for elements of products that go well beyond the scope of their invention.”

Finally on the topic of litigation costs, Julie A. Hedlund summed up the recent trend as follows in a research paper titled “Patents Pending: Patent Reform for the Innovation Economy” (The Information Technology & Innovation Foundation, May 2007): “Patent litigation increased 120 percent between 1990 and 2005 (while civil litigation in general rose 5 percent). At the same time, damage awards have grown, providing windfalls to some patent holders at the expense of consumers who must pay higher prices for goods and services.”

- **International Costs.** An international patent system broken down by region and/or nations proves quite costly, again with those costs falling far more heavily on small firms.

Gerald J. Mossinghoff, former assistant secretary of commerce and commissioner of patents and trademarks, noted in testimony before the U.S. Senate Judiciary Committee on July 26, 2005:

“There is a debilitating redundancy built into the current national/regional patent search, examination and enforcement systems. With respect to any important invention, highly skilled patent examiners around the world -- most of whom are scientists or engineers and many of whom in addition, particularly in the United States, have legal training -- analyze the same patent application, search the same prior art, and perform the same examination before granting virtually identical patents in their respective jurisdictions. Once granted, a patent must be enforced individually in each individual jurisdiction. This unnecessary redundancy drives up the costs of obtaining and enforcing world-wide patent protection to a level that can only be afforded by the largest multinational corporations. Some time ago, the senior patent counsel of one of the world’s major research-based pharmaceutical companies estimated, for example, that it costs between \$750,000 and \$1,000,000 to obtain comprehensive world-wide patent protection for an important chemical compound, and that figure is growing at a rate of 10% each year. The costly duplication of effort also adversely impacts the governments themselves, many of which are looking for ways to reduce the costs associated with patent protection within fixed or in many cases reduced resources.”

Meyers summed up international issues, in part, this way: “[D]ifferences among national patent systems continue to result in avoidable costs and delays. In spite of progress in harmonizing the U.S., European, and Japanese patent examination systems, important differences in standards and procedures remain, ensuring search and examination redundancy that imposes high costs on users and hampers market integration. ... Important differences include the following: Only the United States gives preference to the ‘first to invent’ rather than the ‘first to file.’”

Again, this is not just an issue for large multinationals. The firm size data in patent industries highlighted earlier should make this clear. In addition, though, the SBA Office of Advocacy points out that small businesses “made up 97 percent of all identified exporters and produced 28.6 percent of the known export value in FY 2004.” International business is increasingly important to small firms.

• **First-to-Invent System.** On an issue of both international and domestic importance, the U.S. does grant patents on a first-to-invent basis, rather than the first-inventor-to-file system the rest of the world follows. First-to-invent is inherently ambiguous and costly, and that's bad news for small businesses and individual inventors.

Again, Mossinghoff observed in his Senate Judiciary Committee testimony:

“Although there are many aspects to deep patent law harmonization, none is more important, in my opinion, than the United States moving to a first-inventor-to-file system of priority. At the end of 1997, there were two nations that used the so-called first-to-invent system: the United States and the Philippines. Effective January 1, 1998, under its Republic Act No. 8293, the Philippines adopted a first-to-file system, leaving the United States alone in the world in adhering to a first-to-invent system. Patent examiners worldwide examine an inventor's claims — his/her definition of the invention — against what patent professionals call "prior art" — i.e., earlier work of others. As long as the United States alone in the world adheres to a first-to-invent system of priority, there can be no realistic expectation that a universally agreed upon definition of prior art can be achieved. ... As long as the United States adheres to a first-to-invent system of priority, international discussions of deep patent harmonization will remain hypothetical or theoretical. An argument is sometimes heard that adopting the universal first-inventor-to-file rule would somehow disadvantage independent inventors and small businesses — two classes of extremely important and productive users of the U.S. patent system. Twenty-two years of experience indicates that the United States first-to-invent system of priority has provided no advantage to small entities. Actually, the opposite is true: more small entities were disadvantaged by the first-to-invent rule than were advantaged.”

In the 2004 report from the National Research Council of the National Academies, titled “A Patent System for the 21st Century,” the following points were highlighted:

- “For those subject to challenge under first-to-invent, the proceeding is costly and often very protracted; frequently it moves from a USPTO administrative proceeding to full court litigation. In both venues it is not only evidence of who first reduced the invention to practice that is at issue but also questions of proof of conception, diligence, abandonment, suppression, and concealment, some of them requiring inquiry into what an inventor thought and when the inventor thought it.”
- For most applicants, first-inventor-to-file effectively is the system the U.S. has. “Of the more than 300,000 applications the USPTO receives each year only about 200 to 250 — less than 0.1 percent — end up in interference proceedings because a second filer claims to be the first inventor.”

The House report on the Patent Reform Act of 2007 neatly summed up the issue this way:

“Businesses of every size seek to protect their inventions throughout the world and thus they apply for and maintain patents for the same invention in several countries. Because the basic rules relating to priority to invention are different between the United States and the rest of the world, businesses are forced to dedicate more resources to maintaining their patent portfolios than they would otherwise have to if the United States adopted a first-inventor-to-file system. Lastly, patent harmonization is in the long-run interests of United States inventors. Greater harmonization will make it easier for United States inventors to secure patent rights in other countries. Given the increasing globalization of commerce, international patent protection will be increasingly important to the ability of United States companies to compete. Unfortunately, recent attempts to harmonize patent laws, such as through the Substantive Patent Law Treaty, have stalled, to a large extent, because of the fundamental difference between how the United States and the rest of the world award priority of invention.”

- **Grace Period.** Another difference between the U.S. and many of our economic partners around the world is the “grace period.” As Meyers pointed out: “U.S. law allows a grace period of one year, during which an applicant can disclose or commercialize an invention before filing for a patent, whereas Japan offers a more limited grace period and Europe provides none.”

The July 2005 CRS report explained: “Current U.S. patent law essentially provides inventors with a one-year period to decide whether patent protection is desirable, and, if so, to prepare an application. Specified activities that occur before the ‘critical date’ — patent parlance for the day one year before the application was filed — will prevent a patent from issuing. If, for example, an entrepreneur first discloses an invention by publishing an article in a scientific journal, she knows that she has one year from the publication date in which to file a patent application. Importantly, uses, sales, and other technical disclosures by third parties will also start the one-year clock running. As a result, inventors have a broader range of concerns than merely their own behavior.”

This is an important option for individual inventors, entrepreneurs and small businesses, who have additional time to organize and fund a patent application. At the same time, as the July 2005 CRS report highlights, getting our trading partners to adopt this grace period could be a formidable challenge.

- **Best Mode.** Meyers noted another international difference: “Only the United States requires that a patent application disclose the ‘best mode’ of implementing an invention.” It is hard to see how the “best mode” requirement in patent law works in this era of innovation, change and fluidity. Consider the comments made by two witnesses during the House Subcommittee on Courts, the Internet and Intellectual Property in April 2007.

Kevin Sharer, CEO and Chairman of the Board for Amgen Inc., noted:

“Best mode is a subjective requirement in patent law that requires disclosure of the ‘best way’ known to an inventor of practicing the claimed invention. Best mode is an outdated requirement that does not accommodate today’s rapid pace of

innovation. The inventor's opinion about the best way of making the invention may be different from the challenger's, and it may evolve over time. Whether or not the patent applicant submitted the best mode is widely litigated and requires extensive – and expensive – discovery. Because attacks on best mode are more of a threat to patents than an aid to promote disclosure, the best mode requirement should be eliminated. In ongoing patent harmonization discussions, serious consideration is being given to non-inclusion of the best mode requirement as the best approach to take worldwide.”

Gary Griswold, President and Chief IP Counsel for 3M Innovative Property Companies, provided valuable background and context:

“Much of the debate around the desirability—or undesirability—of keeping this provision part of U.S. patent law is grounded in misconceptions. First, it was codified as part of the U.S. patent law in its present form only in 1952, when the U.S. patent law had succeeded for more 162 years without such a requirement. It is clearly not an essential part of patent law for the United States, any more than it is essential to the patent laws of any of our major trading partners around the world—neither Europe nor Japan has any such requirement...

“At its core, the ‘best mode’ requirement is the most *subjective* validity assessment in all of patent law. It requires knowing what the inventor *contemplated* on the day the inventor filed his patent application.

“Its subjectivity is matched only by its redundancy. The patent statute's enablement clause clearly requires the inventor to provide a full, clear, concise and exact description of how the invention is to be made and put into practice. The inventor must do so with such fullness that a person with no more than ordinary skill in the technology of the invention can put the claimed invention into practice. If such a person of ordinary skill can only do so through an undue level of experimentation, the disclosure of the invention is defective and the patent is invalid for that reason alone.

“This requirement, however, is another example of why patent litigation in the United States can become so unpredictable and expensive. To know whether or not the inventor might have contemplated one mode of carrying out an invention was a better mode requires discovery of every mode the inventor knew at the time the patent was sought. This means reviewing every document the inventor wrote – or read – relating to a mode for carrying out the invention. Discovery on ‘best mode’ is then a confluence of ‘what did the inventor know and when did the inventor know it’ with ‘what might, therefore, have the inventor contemplated and when might those contemplations have taken place.’”

Patent Reform

The key measures needed for productive patent reform deal with patent quality, the legal system, government incentives, international cooperation, and a change to a first-inventor-to-file system. Those certainly are the major challenges confronting entrepreneurs and small businesses.

- **Prior Art by Third Parties.** Allow other parties in the private sector to submit prior art during the examination process for a patent application. At the 2005 American Enterprise Institute gathering, Microsoft's Bradford Smith argued that harnessing private sector resources would support the public interest in terms of high-quality patent review.^{xv}

In his February 2007 congressional testimony, Jaffe noted: "Much of the information needed to decide if a given patent application should issue—particularly information about what related technologies already exist—is in the hands of competitors of the applicant, rather than in the hands of the PTO. And there are strong incentives for firms to share this information. If a competitor of mine has filed a patent application, the last thing I want to see is for them to be issued a patent on an application that would have been rejected if the PTO had known about my technology. I would thus have a strong incentive to provide this information, if only the PTO would give me an opportunity for input, and if taking advantage of such an opportunity does not create strategic disadvantages for me down the road. So creating opportunities of this sort is another way that the system could exploit the incentives of private parties in order to increase efficiency."

The injection of private-sector expertise would go a long way in enhancing patent quality and certainty, and reducing costs, which are all very important to small businesses.

- **Legal Reform.** Patent litigation problems reflect patent quality issues, but also are an outgrowth of the larger U.S. litigation system imposing costs across businesses, industries and the economy.

For example, damages must be re-rooted in economic reality and returned to solid legal ground. Dell's Peterman pointed out in his April 2007 congressional testimony: "Over 150 years ago, in 1853 in *Seymour v. McCormick*, the Supreme Court set the correct rule on damages in patent cases. Courts today have drifted away from his standard: In *Seymour*, the Supreme Court said: 'The mode of ascertaining actual damages must necessarily depend on the peculiar nature of the [patent] monopoly granted [O]ne who invents some improvement in the machinery of a mill could not claim that the profits of the whole mill should be the measure of damages for the use of his improvement.'"

As always, actual and looming lawsuits play a far greater role in doing direct damage to and restraining innovation from small businesses. And since small business is a key source for invention and innovation, that's bad for the entire economy. Hence, reining in litigation costs tied to patents would be good news for the entrepreneurial sector of our economy.

- **Alter Government Incentives.** Waste and unintended consequences are more the rule than exception when it comes to government undertakings. And as important patents, along with copyright and trademarks, are to the economy, it does not mean that government action in such areas will somehow be immune to such failings.

Three changes seem obvious: 1) do not make the Patent Office a so-called “profit center” for members of Congress looking for ever-expanding revenues to spend and waste; 2) alter the incentives for patent examiners to encourage not only the number of files closed in a year, but the number of cases they get right; and 3) regarding courts geared specifically for patent cases, the laws must be written so that judges have a clear mandate to encourage quality patents, not just encourage more patents, and that includes putting teeth back in the obviousness doctrine.

- **Greater International Agreements.** The Bush Administration has done some solid work in pushing ahead with protecting intellectual property in the international marketplace. That work needs to continue, including advancement of bilateral and multilateral trade accords that harmonize patent systems, and thereby reduce costs for inventors and small businesses.

- **First-Inventor-to-File System.** International harmonization in an increasingly integrated world economy, and reduced costs for small businesses dictate a shift to a first-inventor-to-file system for awarding patents in the U.S.

Gerald Mossinghoff illustrated this in a 2005 paper for the Washington Legal Foundation. The report, titled “Small Entities and the ‘First to Invent’ Patent System: An Empirical Analysis,” examined U.S. patent applications and grants data regarding interferences. He labeled a small entity “advantaged” by the first-to-invent system if it was the second person to file an application for an invention and received a favorable decision, while disadvantaged means that a small entity was the first to file an application, but got an adverse decision. From 1983 through 2004. Mossinghoff reported that “the number of small entities that were *advantaged* by the first-to-invent system ... was 286, whereas the number of small entities *disadvantaged* was slightly higher, namely, 289.” He concluded: “The data provided by the USPTO confirm empirically that the current first-to-invent system of priority provides no advantage to small entities... And with respect to independent inventors – among the most vocal of first-to-invent adherents – more were disadvantaged (167) than were advantaged (139) by the first-to-invent system.”

He also noted, “Given the increasing use of low-cost and easily filed *provisional applications*,” a first-inventor-to-file system “would be of significant benefit to small entities – the class that comprises independent inventors, small businesses and nonprofit institutions.” Continuing later, Mossinghoff argued: “Those of us who believe that adopting the first-inventor-to-file system of priority in the United States would actually favor small entities point out that the current system of forcing a small entity into an interference proceeding with a large and determined company that filed a patent application *after* the small entity could cost the small entity hundreds of thousands of dollars, even if it ultimately received a favorable decision. More importantly, small entities by their very nature can move more quickly than larger bureaucracies. And here is where the United States *provisional application* comes into play. By filing a complete technical disclosure of the invention, a small entity can readily secure priority rights in

a first-inventor-to-file system without a major expenditure of resources. This then gives the small entity a year in which to file a professionally prepared patent application.”

In addition, it was noted in “A Patent System for the 21st Century” regarding small business: “For another perspective on small-entity issue, Lemley and Chien (2003) examined on whose behalf the interference cases in their study were initiated. Strikingly, of the 94 initiators for which status data were available, 77 percent were large firms while only 18 percent were small entities. Of the responding parties 43 percent were individuals or small businesses while 53 percent were large entities.”

James DeLong added about the proposed change from first-to-invent to first-inventor-to-file: “Over the years, small inventors have opposed this change, for reasons that are difficult to fathom, since small guys lose these battles as often as they win them, and they are disproportionately burdened by uncertainty and by the expense of litigation.”^{xvi}

- **Best Mode.** The “best mode” requirement should be terminated. “A Patent System for the 21st Century” correctly argued: “The ‘best mode’ requirement, having no analog in foreign patent law, imposes an additional burden and element of uncertainty on foreign patentees in the United States. This, in addition to its dependence on discovery aimed at uncovering inventor records and intentions, justifies its removal from U.S. patent law.”

Conclusion

On September 7, 2007, the U.S. House of Representatives passed the Patent Reform Act of 2007 (H.R. 1908) by a vote of 220-175. The legislation (see key items in Index A) addresses important issues, including first-inventor-to-file, prior art reform and post-grant reviews, nonobvious requirements, infringement damages, forum shopping, and “best mode.” These are major steps forward. However, the legislation also would grant rulemaking authority to the USPTO, which is a concern, as explained in Index A. H.R. 1908, while not perfect, offers some major, positive strides in reforming our patent system to fit the economic, market, technological and legal realities of the 21st century.

The Senate will soon consider its version of the Patent Reform Act, S.1145. It also addresses key issues, such as first-inventor-to-file, prior art and post-grant reviews, nonobvious requirements, infringement damages, forum shopping, USPTO funding, as well as eliminating the concerns over USPTO rulemaking authority. As noted in the Committee report, the bill would:

- change to a “first-inventor-to-file” system;
- make it simpler for patent applicants to file and prosecute their applications;
- codify and clarify the standard for calculating reasonable royalty damage awards, as well as awards for willful infringement;
- create a relatively efficient and inexpensive administrative system for resolution of patent validity issues before the USPTO;
- provide for eventual publication of all applications and enhance the utility of third parties’ submissions of relevant information regarding filed applications;

- improve venue in patent cases and provide for appeals of claim construction orders when warranted;
- give the USPTO the ability to set its fees;
- authorize USPTO to require patent searches with explanations when a patent application is filed;
- codify and improve the doctrine of inequitable conduct;
- end USPTO “fee diversion.”

Again, these are sound reform steps.

Congress has been wrestling with patent reform legislation for several years now, and the opportunity for substantive change that would benefit entrepreneurs, small businesses and our economy is at hand.

In the end, the patent system is critical to small businesses and the economy. Reforms that advance the cause for high quality patents and reduced costs will serve to advance the four “I’s” – investment improvement, innovation, and invention.

Index A: Patent Reform Act of 2007

On September 7, 2007, the U.S. House of Representatives passed the Patent Reform Act of 2007 (H.R. 1908) by a vote of 220-175. Below are some highlights from the legislation, with quotes (unless otherwise noted) coming from the CRS summary.

- **Establishes the first-inventor-to-file system, revises prior art and restates the nonobvious requirement for a patent.** “Defines ‘effective filing date of a claimed invention’ as the filing date of the patent or the application for patent containing the claim to the invention (thus establishing a first-inventor-to-file system). Revises the definition of ‘prior art’ and conditions for patentability to accommodate a first-inventor-to-file system. Reaffirms, with certain exceptions, the denial of a patent for a claimed invention, if such invention was patented, described in a printed publication, in public use, or on sale more than a one-year grace period before the effective filing date of the claimed invention.”

The legislation specifically says: “A patent for a claimed invention may not be obtained ... if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.”

- **Guidelines for patent infringement damages.** “Expands criteria for determining damages for patent infringement. Sets forth guidelines for courts in determining an award based upon a reasonable royalty relating to the economic and market value of patents attributable to their contribution over prior art. Allows increased damages for willful patent infringement,” with permitted grounds and limitations defined.

- **Prior Art Reform and Post-Grant Review.** “Revises procedures for: (1) citing prior art to USPTO for purposes of determining the patentability of a claimed invention; and (2) reexaminations of patents by the Director of USPTO. Reassigns inter partes reexamination proceedings to administrative patent judges (currently, conducted by patent examiners). Allows patent owners or third parties to an inter partes reexamination proceeding to request an oral hearing before a patent judge. Establishes procedures for post-grant review to cancel as unpatentable any claim of a patent on specified grounds of invalidity. Sets forth requirements for a post-grant review petition and the conduct of post-grant review proceedings, including appeals from a final determination of the Patent Trial and Appeal Board.”

The legislation notes: “A post-grant proceeding may be instituted under this chapter pursuant to a cancellation petition ... if-- (1) the petition is filed not later than 12 months after the issuance of the patent or a reissue patent, as the case may be; or (2) the patent owner consents in writing to the proceeding.”

“Allows any third person to submit for consideration and inclusion in the record of a patent application, any patent, published patent application, or other publication of potential relevance to the examination of a patent application. Requires such submission to be made in writing, with a concise description of its relevance, before the earlier of: (1) the mailing of a notice of

allowance in the application for a patent; or (2) the date that is six months after publication of the application or that date of the first rejection of any claim in the application, whichever is later.”

- **Reins in “Forum Shopping.”** “Amends the federal judicial code to prohibit patent litigants from manufacturing venue by assignment, incorporation, or otherwise to invoke the venue of a specific federal district court. Restricts venue in patent litigation to a judicial district where: (1) the defendant has its principal place of business or is incorporated; (2) the defendant has committed a substantial portion of the acts of infringement and has a regular and established physical facility; (3) the primary plaintiff resides, if the primary plaintiff is an institution of higher education or a nonprofit organization; (4) the primary plaintiff has a place of business engaged in substantial research and development, manufacturing, or the management of such activities; (5) the plaintiff resides, if the plaintiff is named as inventor or co-inventor and there has been no transfer of rights in the patent; or (6) any defendants have substantial evidence and witnesses. Allows venue in any district for cases involving foreign defendants with no U.S. subsidiary.”

- **Ends “Best Mode.”** “Eliminates as a defense to a patent infringement claim the failure of an inventor to comply with the best mode of carrying out an invention.”

- **Regulatory Authority and Congress.** “Grants specific regulatory authority to USPTO over the quality and timeliness of patent applications and their examination. Requires regulations promulgated by USPTO to be reviewed and approved by Congress.” The legislation says: “If a joint resolution of disapproval with respect to the regulation is enacted into law, the regulation shall not become effective or continue in effect.” This is a clear area of concern in this legislation. Writing in the October 29, 2007, *Wall Street Journal*, Claude Barfield and John Calfee, resident scholars at the American Enterprise Institute, make the following point: “Several provisions in the bills before Congress are notably ill-considered, particularly one to grant new substantive rule-making authority to the USPTO. Given the current disarray within the agency and its continuing struggle to master the challenges of emerging technologies, giving it even greater authority just now would be extremely unwise.” Expanding regulatory authority holds the potential for opening another costly regulatory quagmire. It is not enough that Congress only be required to weigh in with disapproval. If the USPTO is to be granted regulatory authority, then Congress must explicitly vote thumbs up or thumbs down on each proposed rule and regulation.

-
- ⁱ Milton Friedman, *Capitalism and Freedom* (Chicago, IL: The University of Chicago Press, 1962, 1982), p.127.
- ⁱⁱ Nathan Rosenberg and L.E. Birdzell, Jr., *How the West Grew Rich: The Economic Transformation of the Industrial World* (New York, NY: Basic Books, Inc, 1986), p. 23.
- ⁱⁱⁱ Douglass C. North, *Structure and Change in Economic History* (New York, NY: W.W. Norton & Company, Inc., 1981), p. 159.
- ^{iv} Douglass C. North, *Structure and Change in Economic History* (New York, NY: W.W. Norton & Company, Inc., 1981), p. 164.
- ^v Douglass C. North, *Structure and Change in Economic History* (New York, NY: W.W. Norton & Company, Inc., 1981), pp. 164-165.
- ^{vi} Quoted in Jason O. Watson, "A History of the United States Patent Office," April 17, 2001, Commonwealth of Virginia Historical Markers website, <http://www.historical-markers.org/usptohistory.cgi>.
- ^{vii} Jason O. Watson, "A History of the United States Patent Office," April 17, 2001, Commonwealth of Virginia Historical Markers website, <http://www.historical-markers.org/usptohistory.cgi>.
- ^{viii} These were noted in a previous SBE Council work: Raymond J. Keating, "An IP Primer," The Entrepreneurial View, SBE Council Cybercolumn, February 21, 2006, <http://www.sbecouncil.org/news/display.cfm?ID=1926>.
- ^{ix} From a summary of American Enterprise Institute event in March 2005 titled "The Patent System and the New Economy," <http://www.aei.org/events/filter.all,eventID.1026/summary.asp>.
- ^x From a summary of American Enterprise Institute event in March 2005 titled "The Patent System and the New Economy," <http://www.aei.org/events/filter.all,eventID.1026/summary.asp>.
- ^{xi} William M. Landes and Richard A. Posner, "The Political Economy of Intellectual Property Law," AEI-Brookings Joint Center for Regulatory Studies, Washington, D.C., 2004.
- ^{xii} William M. Landes and Richard A. Posner, "The Political Economy of Intellectual Property Law," AEI-Brookings Joint Center for Regulatory Studies, Washington, D.C., 2004.
- ^{xiii} Alan Murray, "War on 'Patent Trolls' May Be Wrong Battle," *The Wall Street Journal*, March 22, 2006.
- ^{xiv} Editorial, "The Problem with Patents," *The Wall Street Journal*, March 29, 2006.
- ^{xv} From a summary of American Enterprise Institute event in March 2005 titled "The Patent System and the New Economy," <http://www.aei.org/events/filter.all,eventID.1026/summary.asp>.
- ^{xvi} James V. DeLong, "Patent Reform Hits the Hill," TechCentralStation.com, June 21, 2005.