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AMERICAN INNOVATION AT RISK: THE CASE FOR PATENT REFORM

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BEFORE THE

SUBCOMMITTEE ON COURTS, THE INTERNET, AND INTELLECTUAL PROPERTY

OF THE

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AMERICAN INNOVATION AT RISK: THE CASE FOR PATENT REFORM

THURSDAY, FEBRUARY 15, 2007

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COURTS, THE INTERNET,
AND INTELLECTUAL PROPERTY,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:01 p.m., in Room 2141, Rayburn House Office Building, the Honorable Howard Berman (Chairman of the Subcommittee) presiding.

Staff present: Perry Apelbaum, Staff Director-Chief Counsel; Joseph Gibson, Minority Chief Counsel; Shanna Winters, Subcommittee Chief Counsel, Blaine Merritt, Subcommittee Minority Counsel; and Rosalind Jackson, Professional Staff Member.

Mr. BERMAN. It has been 12 years, and I forgot how to do this. I have only waited 24 years for this. [Laughter.]

But I thank you all for coming, and I call to order the meeting of the Subcommittee on Courts, the Internet, and Intellectual Property.

Before I begin, I want to apologize to my colleagues for holding a hearing when the Ranking Member and a number of other Members couldn't be here because they are attending Congressman Norwood's funeral. By the time I realized the conflict between the funeral and the Subcommittee meeting, it was really too late to avoid disrupting the travel plans of the witnesses, so I went ahead with it.

And I do want to thank the witnesses who had to come from out of the Washington area for traveling through the snow and ice to get here to testify. You are sort of essential to the hearing.

We don't have too many of them here yet, but I want to welcome the new Members to this Subcommittee and both recognize, in his absence, I am delighted being able to work with the Ranking Member, who I got to serve with when he was Chair of the Subcommittee several terms ago, Howard Coble, the Ranking Member of the full Committee, who I worked with a great deal on so many issues over the last years that we have been in Congress, including on the issue that is the subject of the hearing today, patent reform.

Also, the vice Ranking Member—is that the right title—deputy Ranking Member, who is going to be serving as Ranking Member at the Subcommittee for this hearing, Congressman Feeney, because of Howard Coble's absence.

I am going to recognize myself and the deputy Ranking Member of the Subcommittee for opening statements. And I know the Rank-

ing Member of the full Committee, Congressman Smith, intends to give a statement, and then any other Members.

I also want to welcome someone who has been part of this Subcommittee since she came to this Congress, but who, at least at this point in time, is not on the Subcommittee, for coming and participating. As Lamar knows, Congresswoman Lofgren and I and the Ranking Member of the full Committee have worked on this issue at great length over the past few years, and so it is good to have her here.

Patents are one of the cornerstones of the American economy and are the foundation of live-saving drugs and groundbreaking technologies. It is beyond dispute that robust patent protection promotes innovation.

However, I also believe that the patent system is strongest and that incentives for innovation are greatest when the system only protects those patents that are truly inventive.

When functioning properly, the patent system should encourage and enable inventors to push the boundaries of knowledge and possibility. If the patent system allows questionable patents to issue and does not provide adequate safeguards against patent abuses, the system will stifle innovation and interfere with competitive market forces.

The issuance of the one-click patent, the patent for standing in line for the bathroom, the patent for a side-to-side swing, and, my personal favorite, the patent for the Fosbury Flop—if anyone is old enough to remember the Fosbury Flop—and many others generated concern from industry experts on the soundness of our current patent system. While I won't opine on the validity of these patents, many have questioned whether such patents meet the standard of patentability.

Therefore, beginning in 2001, in the 107th Congress and in each successive Congress, Congressman Rick Boucher and I have introduced patent reform bills designed to address the need for increasing patent quality. Since our initial attempt at bringing this issue to the forefront, a number of people have joined in those efforts.

Over the course of the last 5 years, there have been numerous attempts to define the challenges that face the patent system today. For example, the PTO developed its 21st-century strategic plan. The Federal Trade Commission released a report entitled "To Promote Innovation: The Proper Balance of Competition in Patent Law and Policy."

Soon thereafter, the National Research Council published a compilation of articles about a patent system for the 21st century and two economists authored a critique of patent law in a book titled "Innovation and Its Discontents."

These experts make a number of recommendations for increasing patent quality and ensuring that the patent system promotes, rather than inhibits, economic growth and scientific progress. I am pleased that some of these experts will be our witnesses today.

The Supreme Court is also recognized the need for greater guidance in the patent system and has recently addressed the issue of automatic permanent injunctions in *eBay v. MercExchange* and granted certiorari on both the obviousness issue in *KSR v. Teleflex*

and the issue of interpretation of section 271(f) of the Patent Act in *Microsoft v. AT&T*.

While I acknowledge someone deserving patents will inevitably slip through the system, I have concerns about a number of situations. It is inconceivable that a patent application with over 650 claims would receive a cursory review, ENTP BlackBerry matter, and it is worrisome that the PTO can grant a patent for tax strategy which many claim the patent office lacks the requisite expertise to determine whether the particular tax business method is novel.

Therefore, part of any reform to the system begins by strengthening the PTO. The PTO has implemented a number of quality initiatives and has hired additional staff.

While the continuing resolution would have diverted close to $90 million, we worked with the appropriators to ensure that the PTO could keep all of the fees collected. The Subcommittee should continue its effort to stop the diversion of PTO fees.

But we need to look further and address the goals and recommendations of the reports I mentioned earlier in an effort to improve patent quality, deter abusive practices by unscrupulous patent-holders, and provide meaningful low cost alternatives to litigation for challenging patent validity.

Past legislative attempts at achieving more comprehensive patent reform have met with resistance and, for one reason or another, failed to move out of the Subcommittee.

Now, however, the call for legislative action is loud. The New York Times has noted, "Something has gone very wrong with the United States patent system." The Financial Times has stated, "It is time to restore the balance of power in U.S. patent law."

I intend, with a number of my colleagues, to introduce a patent reform bill soon which will have bipartisan and bicameral support in addressing some of the more urgent patent reform concerns.

But the notion of this hearing was to start at the beginning, explore some of the issues which make the case for patent reform. This was not intended as a hearing to get all the different interested parties and people directly involved in these issues to testify and give their perspective, but, given my predisposition, to bring in some people who make the case to the Members of the Subcommittee and to the public of the need to make that reform a high priority on my agenda.

I now recognize the distinguished gentleman and deputy Ranking Member, the gentleman from Florida, Congressman Feeney, for his opening statement.

Mr. FEENEY. I want to thank the Chairman. It is a real honor to be here.

The Chairman said that he waited 24 years to get into his position. I have been fighting just for 4 years to get on the Subcommittee, but it has felt like 24 years at times because I have had a keen interest.

Having said that, I have only been part of the Subcommittee for officially about 9 minutes now, and it didn't take me long to weasel my way into the first fiddle chair, and I am looking forward to starting at the beginning. [Laughter.]

It is a great place for a beginner on this Committee to start with a wonderful panel.

I am here today because our good friend, Congressman Coble, is at the funeral of Congressman Norwood. And we are very grateful that we have colleagues down there representing all of us as we send our condolences to the whole family surrounding Congressman Norwood.

I am also delighted that the Ranking Member of the full Committee, Congressman Smith, who I expect will be recognized in a minute, is here. He has a keen interest and an enormous amount of experience in the issue that this Subcommittee is interested in, having chaired it for some time.

Mr. Chairman, we all look forward to working with you, my colleagues across the aisle, in both parties, to discuss how the patent issuance process can be improved, how patent quality can be reinvigorated, and what types of reforms will best serve not only to preserve, but to encourage the innovative spirit that keeps our economy strong.

I love reading the Constitution. Because our founding fathers understood the vital importance of intellectual property rights, they included special protections for them in our Constitution.

Most of my constituents think about property rights in terms of their real estate rights. It wasn't until an afterthought in the Bill of Rights, in articles 4 and 5, that the founders got around to clarifying certain aspects of real property rights.

But right in article 1, section 8, the Constitution states, "The Congress shall have the power to promote the progress of science and useful arts for securing, for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries."

I have done a quick search of the Constitution. The mechanisms that are set out in the Constitution for governance of this great country are very clear often. Sometimes they are ambiguous and the Supreme Court and others have to resolve them.

But this may be unique, Mr. Chairman. The only place I can find, upon a cursory review, where the founding fathers actually explained not just what Congress's, in this case, power was, but why it was important.

Now, the president has a veto. The founders never explained why that was important. Congress has the right to declare war and appropriate, and the founders never, at least in the Constitution, explained why those things were important, but, obviously, it was near and dear to the founders to express the importance of protecting intellectual property rights.

I won't attempt today to provide an abridged description of all of the many topical issues which we are going to find our way in dealing with in this Committee in the near future. We would be here until after dinnertime if I tried to do that.

But I would comment on what I believe is the most important point in this debate. Different individuals and companies use the patent process in different ways and for different purposes. They have different business models and they often clash.

This has engendered a discussion on whether too many patents of poor quality are circulating in the economy, which, in turn, has

generated some questionable lawsuit practices concerning infringement.

None of us wants to support a system that rewards legal gamesmanship over true creativity and a desire to commercialize an invention that will become a great benefit to the American people.

But in our zeal to weed out bad lawsuits, we should not proceed on the assumption that every patent-holder who wants to license an invention or enforce his or her property rights is ill intentioned.

The drive to innovate and continue fresh, new approaches is a standard and time-honored component of the patent system that must be protected.

The topics we will discuss here today have evolved over time, as has the contours of the debate have been shaped by recent Supreme Court decisions and litigation across the country involving patent issues.

I hope today's hearing will mark the starting point in the 110th Congress for deliberation on the extent to which comprehensive patent reform is required and desirable.

I am greatly appreciative of the willingness of the panel of some distinguished witnesses to be here with us today.

That concludes my opening remarks. Again, Mr. Chairman, I look forward to working with you and all the Members of the Subcommittee for the next 2 years.

And with that, I yield back the balance of my time.

Mr. BERMAN. Very interesting, and I thank the gentleman.

I am pleased to recognize, really, my partner and our partner in all of this, the Ranking Member of the full Committee, Congressman Smith.

Mr. SMITH. Thank you, Mr. Chairman. Mr. Chairman, first of all, thank you for your earlier opening comments.

And, Mr. Feeney, thank you for your gracious remarks, as well.

Mr. Chairman, I can't stay long today because of an impending conflict, but I did want to come by and congratulate you on your first hearing as Chairman of this Subcommittee.

As you know, because we have worked together in the past, this is a wonderful Subcommittee, with great jurisdiction and great responsibilities, as well, and you are an able leader and an able Chairman, and I look forward to continuing to work with you on patent reform.

Let me recall to you a quick conversation we had at the end of the last Congress, when you and I had a fairly serious discussion about the outcome of the election and you and I agreed that one of us was going to have to revise and extend our remarks in the next Congress depending on the outcome of that election.

It looks like I am the one revising and extending and you are the Chairman of this Subcommittee, and, as I say, congratulations to you on that.

I also want to note, Mr. Chairman, that the interest in patent reform continues, witness the number of people in this room and the long lines that were standing outside in the hall before the doors opened, and that is good to see.

It reminds me of the times we had hearings and markups last year and I think the reason why so many people are here and why

there is so much interest is because this subject matter is so important.

When we talk about patent reform, we are literally talking about the potential to help businesses grow, to help Americans prosper, and to help our country remain competitive in the world.

And when we talk about patent reform, though, we are certainly talking about any unanimity of agreement. We are certainly talking about a bipartisan issue and I consider the I.P. Subcommittee to sort of be an oasis on the Judiciary Committee, because we are all working, I think, for the same goals and that is for better patent quality and, hopefully, an expeditious review of those patents, as well.

Mr. Chairman, one final thought and that is just a little bit to paint the picture of the patent reform effort.

We are literally in our efforts to come trying to help everyone from a lone inventor in their garage who has one light bulb idea and might get one patent that might involve into a small business that employs 20 or 30 people to several high-tech companies today that actually apply for over 1,000 patents every year and all companies and business owners in between.

But that is the breadth that indicates the importance of the issue. And if we are successful in accomplishing that patent reform that we have been working on for several years, we are going to do a lot of people a lot of good.

And in those efforts, I do look forward to working with you and, again, congratulations on being Chairman of the I.P. Subcommittee.

Mr. BERMAN. Thank you very much for your nice comments, and I look forward to working with you.

If there is no objection, I would like to get unanimous consent to recognize our colleague during the questioning period, who is not a Member of the Subcommittee, to allow her to participate in the questioning of the witnesses, Congresswoman Lofgren.

Does any other Member of the Subcommittee want to make an opening statement?

Then, our witnesses.

Our first witness is Adam Jaffe, the dean of arts and sciences and Fred C. Heck professor in economics at Brandeis University. Since coming to Brandeis in 1994, he has been chair of both the economics department and the Intellectual Property Policy Committee. He was previously an assistant and associate professor at Harvard University and senior staff economist at the President's Council of Economic Advisers.

Professor Jaffe's research focuses on the economics of innovation. His book, "Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress and What to Do About It," a long title, coauthored with Josh Lerner of Harvard Business School, was published in 2004.

Professor Jaffe earned his Ph.D. in economics at Harvard and both an S.M. in technology and policy, whatever S.M. is—master's of science, I guess—and a bachelor's of science in chemistry from MIT.

Our next witness is Dr. Mark Myers, chairman of the board of trustees at Earlham College, who has held visiting faculty positions

at the University of Pennsylvania's Wharton Business School, the University of Rochester and Stanford University.

Dr. Myers retired from the Xerox Corporation in 2000, after a 37-year career in its research and development organizations. While at Xerox, he was senior vice president in charge of corporate research, advanced development, systems architecture and corporate engineering.

In addition, Dr. Myers served on the National Academies' Science, Technology and Economic Policy Board from 1995 to 2005. He co-chaired the board study of the patent system resulting in the report entitled "A Patent System for the 21st Century."

He holds a bachelor's degree from Earlham College and a doctor in material science from Penn State.

The next witness is Suzanne Michel, the deputy assistant director for policy and coordination at the Federal Trade Commission and the FTC's chief counsel for intellectual property. She is involved in many of the I.P. and antitrust issues that arise in the agency's enforcement and policy initiatives and speaks frequently on those topics.

She was one of the contributors to the FTC report entitled "To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy." Before joining the FTC 7 years ago, Ms. Michel worked in the civil division of the Department of Justice, where she defended the U.S. in patent infringement litigation.

She received her B.S. with honors from Northwestern University, her Ph.D. in chemistry from Yale, and her J.D. from Boalt.

Our final witness is Dan Ravicher, the executive director of the Public Patent Foundation. PUBPAT is a not-for-profit legal services organization founded by Mr. Ravicher to represent the public interest against harms caused by wrongly issued patents and unsound patent policy.

Mr. Ravicher writes and speaks frequently on patent law and is adjunct Professor of Patent Law at Benjamin Cardozo School of Law. He received is bachelor's degree in material science from the University of South Florida and his law degree from the University of Virginia.

All your written statements will be made part of the record in their entirety. I would ask each of you, if you could, to summarize your testimony in about 5 minutes. And to help stay within that time, there is a timing light at your table. When 1 minute remains, the light will switch from green to yellow and then red when 5 minutes are up.

We welcome all of you.

Dr. Jaffe, would you begin?

TESTIMONY OF ADAM JAFFE, PROFESSOR OF ECONOMICS AND DEAN OF ARTS AND SCIENCES, BRANDEIS UNIVERSITY, WALTHAM, MA

Mr. JAFFE. I have never done this before.

Mr. BERMAN. Neither have I. [Laughter.]

Mr. JAFFE. Thank you, Chairman Berman and Congressman Feeney and other distinguished Members of the Subcommittee. It is a pleasure to be here today.

I will try to just hit some of the highlights of my written testimony that has already been filed.

You gentlemen have made my job easier because you have already made several of the points that I would have made in my initial statement about the importance of the patent system to the innovation process.

So let me then go right from that to a follow-up point which I think it is important, which is exactly what it is that the patent system does from the perspective of economic policy.

We often think of patents as encouraging invention or innovation or creativity. I would submit that that is not actually what the patent system really does that is important, because I think it is human nature to be creative and inventive and we would always have people coming up with ideas whether we encouraged it or not.

What the patent system does that is very important is to support the next phase of the process, which is the conversion of an idea into a commercially useful product or process, which, of course, has to happen for that invention to actually be of use to anyone.

And that process development is an expensive and risky process. And what patents do is they mitigate the uncertainty inherent in that process by providing some measure of reassurance that someone who develops a commercial product or process from their idea will be able to profit from it, and that is very important, because if that development is too risky and too expensive, it will be inhibited and we won't have the innovation that we would like to have.

Now, they do this in a very powerful way. They allow the owner of a patent to exclude competitors, which is something normally we think is a bad idea. And it is important here to recognize that there is this balance at the heart of the patent system, which is we want to protect innovation, but we do it in a powerful way and so we have to be careful about it.

What has happened in the last 2 decades in the United States is this balance has gotten out of whack and for a variety of reasons that we can talk about more, we have simultaneously made patents much easier to get and made them much more powerful and effective competitive weapons, and those two things don't go well together.

If you are going to have a very powerful and effective weapon, you don't want to make it too easy to get and you don't want to give it, as the Chairman indicated, to people who haven't really earned it.

So as a result of this balance getting out of kilter, what has happened is that, in many cases now, instead of being the engine of innovation, the patent system is increasingly, we use the metaphor in our book of sand in the gears of the innovation system, because people who are in the process of bringing new products and processes to market, even if they have their own patents, many of whom are themselves holders of patents and users of the patent system, increasingly what they find is that they are spending too much time and too much money dealing with the risk of litigation associated with other people asserting patent claims against their products.

And this fear of litigation and the consumption of revenues and time and effort in dealing with it is increasingly perceived in many

sectors of the economy as inhibiting the process of bringing new products and processes to market rather than helping it.

So I think we can go into more details, but there are basically two things that fall out of that in terms of thinking about what we need to do.

One is to look at the way patents are granted and to think about changing the fundamental model that we use for deciding whether or not a patent should be granted to be sure that the information that is necessary to make that decision and to make it intelligently is actually brought to the patent office, so that the patent office can make an effective decision about whether a patent should be granted. That is one side.

Then the other side is in terms of litigation, because there will always be litigation, as the Chairman indicated. Some patents are always going to get through that perhaps shouldn't have been granted.

To ensure that in the litigation process, there is an appropriate balance between the needs of patent-holders who hold valid patents to enforce those patents and the opportunity of firms who may feel that a patent is not valid and needs to be challenged to have a forum for doing that.

And in a variety of ways that I think we will discuss at greater length, the existing system is out of balance in that regard. Too often, people who are accused of infringement, even if they feel the patent is not valid, feel they can't afford the risk and the expense of fighting that in court and making their case.

So this is all difficult stuff and I am glad to see that there is a large crowd here today, because I have been working on this issue for about 20 years and, for a long time, you couldn't get anyone to come to a hearing to talk about patent policy.

I think the Members of this Subcommittee have played a major role in the last couple of years of beginning to change that and bringing these issues to the forefront and I commend you for your persistence in that, and I am now optimistic that this is an issue that we are all ready to act on as a country.

Thank you.

[The prepared statement of Mr. Jaffe follows:]

PREPARED STATEMENT OF ADAM B. JAFFE

My name is Adam B. Jaffe. I am Fred C. Hecht Professor in Economics and the Dean of Arts and Sciences at Brandeis University in Waltham, Massachusetts. I am the co-author (with Prof. Joshua Lerner of Harvard University) of *Innovation and Its Discontents: How our Broken Patent System is Endangering Innovation and Progress, and What to do About it* (Princeton University Press, 2004). My testimony today is on my own behalf, and does not necessarily represent the views of Brandeis University or Prof. Lerner.

Over the course of the nineteenth and twentieth centuries, the United States evolved from a colonial backwater to become the pre-eminent economic and technological power of the world. The foundation of this evolution was the systematic exploitation and application of technology to economic problems: initially agriculture, transportation, communication and the manufacture of goods, and then later health care, information technology, and virtually every aspect of modern life.

From the beginning of the republic, the patent system has played a key role in this evolution. Based in the Constitution itself, and codified in roughly its modern form in 1836, the patent system was an essential aspect of the legal framework in which inventions from Edison's light bulb and the Wright brothers' airplane to the cell phone and Prozac were developed.

Much popular discussion of the patent system emphasizes its role in creating an economic incentive for the creative act of invention. From an economic perspective, this incentive for invention is not paramount, because creativity seems to be inherent in human nature, making a flow of new creative ideas likely under any incentive system. But a creative idea does not help society, unless it is taken further and converted to a commercially useful new product or process. And this stage of converting inventive ideas into real products and processes is very costly and very uncertain. The economic function of the patent system is to provide a measure of predictability and protection to this expensive and risky process of product and process development. At such, it lies at the very heart of technological process, which is in turn the primary engine of economic growth.

In the last two decades, however, the role of patents in the U.S. innovation system has changed from fuel for the engine to sand in the gears. Two apparently mundane changes in patent law and policy have subtly but inexorably transformed the patent system from a shield that innovators could use to protect themselves, to a grenade that firms lob indiscriminately at their competitors, thereby increasing the cost and risk of innovation rather than decreasing it.

Examples of dysfunctional patent behavior have become staples of the business and popular press. They range from the amusing and economically irrelevant, to not-so-funny cases that seriously threaten important technologies in important industries:

- Patents on inventions that are trivially obvious, such as the "Method for Swinging on a Swing," "invented" by a five-year-old, and "User Operated Amusement Apparatus for Kicking the User's Buttocks" ("invented" by a supposed grown-up);
- Patents in areas new to patenting, but covering purported discoveries familiar to practitioners and academics alike, such as Amazon.com's attempt to prevent Barnesandnoble.com from allowing customers to buy books with a single mouse-click, and a bright MBA student's patents on an option-pricing formula published in the academic finance literature two decades earlier;
- Patents that have become weapons for firms to harass competitors, such as the decade-long effort by Rambus, a semiconductor designer, to control computer memory technology by making sure that a long string of patents, all derived from a single 1990 patent application, incorporated important features of an industry-wide standard developed through a voluntary industry standard-setting association;
- Litigation by patent-holders who are not themselves market competitors, that hold up or impose huge costs on innovative, commercially successful products, such as the $612 million dollar settlement that was necessary to prevent patent litigation from shutting down the Blackberry handheld device.

In the last several years, a variety of groups concerned with different aspects of public policy related to innovation have undertaken studies and issued reports calling for major reform of the patent system. These include the Federal Trade Commission (U.S. Federal Trade Commission, 2003, cited hereinafter as "FTC Report"), and the Board on Science, Technology and Economic Policy of the National Research Council (Merrill, Levin and Myers, 2004, cited hereinafter as "STEP Report"). After the issuance of the FTC Report and the STEP report, the American Intellectual Property Law Association (AIPLA) joined with the FTC and STEP Board to sponsor a series of "Town Meetings" across the country in 2005, and the AIPLA endorsed many of the reform recommendations of the FTC and the STEP Board. This subcommittee has also, of course, been active in this issue, with hearings and proposed legislation that has garnered bipartisan support.

In my testimony today, I will summarize the background for these discussions and discuss why patent policy reform is so crucial to our national well-being. Since I understand the subject of this hearing to be the "Case for Patent Reform" rather than the details of such reform, I will discuss the substance of reform only in the most general terms, but specific reform recommendations are discussed at length in my book with Prof. Lerner.

PATENT POLICY DEVELOPMENTS OVER THE LAST TWO DECADES

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. The CAFC has interpreted patent law to make it easer to get patents, easier to enforce patents against others, easier to get large financial awards from such enforcement, and harder for those accused of infringing patents to challenge the patents' validity. At roughly the same time, the new orientation of the patent office has combined with the court's legal interpretations to make it much easier to get patents. However complex the origins and motivations of these two Congressional actions, it is clear that no one sat down and decided that what the U.S. economy needed was to transform patents into much more potent legal weapons, while simultaneously making them much easier to get.

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.

The growth in the shear 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 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.[1]

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. 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.

Much public attention has focused on the expansion of patenting into areas where it was previously unimportant or non-existent, such as biotechnology, software and business methods. Indeed, some of the worst abuses are in these areas. But concern about specific technologies potentially masks the deeper, fundamental problem. The incentives in the system now encourage frivolous applications, cursory review of those applications by the PTO, and indiscriminate filing of patent infringement suits as a generic competitive weapon. To get the system back on track, the system must be changed so that its incentives discourage frivolous applications, encourage rigorous patent examination, and discourage patent litigation where there is not a true invention to protect.

GOALS AND OBJECTIVES

While different analysts of the patent landscape have emphasized different aspects of the patent policy problems, there is general agreement on broad goals for reform of the system:

Improve patent quality.[2] As illustrated by examples discussed above, people are getting patents for inventions that are not new and/or are obvious. One way to solve this, of course, would be to make it much harder to get a patent on anything. If we did that, the few patents that did issue would be of very high quality, in the sense of being very deserved by the applicant. But the objective of patent quality has to be more than just making sure bad patents don't issue. It has to include also making sure that inventors do get patents when they have a truly novel, non-obvi-

[1] *http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us—stat.htm*

[2] See STEP Report, pp 87–94.

ous invention, that such patents are processed relatively quickly and reliably, and that once granted they provide an adequate property right to protect subsequent investment in the invention.

Reduce uncertainty. A primary objective of reform should be to reduce the uncertainty that now pervades many aspects of the patent system. (Ironically, the only aspect of the patent process that has become more certain is the application process itself, as the ultimate granting of some patent from each original application has become almost a sure thing!) The sand in the gears of the innovation machine is that companies and individuals must constantly fear that their research and product development may come to naught, because someone is going to assert an as-yet unknown or untested patent against them. Further, when such an assertion of patent infringement is made, the uncertainty about the ability to defend against that assertion often leads either to abandonment of the allegedly infringing technology, or to an agreement to pay possibly unnecessary royalties.

Keep costs under control. In FY 2006, the Patent Office spent about $1.7 Billion for its operations. In recent years, Congress has increased PTO fees and budgetary appropriations, thereby responding to one aspect of the recommendations of groups such as the FTC, the STEP Board and the AIPLA. It is important to remember that appropriations to the PTO represent only a small fraction of what society spends on the patent system. Patent applicants spend several times that amount, and patent litigants billions more. These resources might be well spent, if they achieved a reasonably smoothly functioning system. But the system is not working well, and it is reasonable to wonder whether we need to invest more of society's resources in the patent process. We need to look for solutions that go beyond throwing money at the problem.

SOME SIMPLE TRUTHS

The next step towards reform is to understand some basic realities about the innovation process.

Mistakes will always be with us

Patent examination is never going to be perfect. Examiners are human. More important, there is an essentially irreducible aspect of judgment in determining if an invention is truly new. After all, even young Albert Einstein faced challenges while assessing applications as a "Patent Examiner-Third Class" in the Swiss Patent Office (Clark, 1973). Therefore, we cannot hope to have a system in which no "bad" patents ever issue. What is important is to have a system with fewer bad patents. And, since there will always be mistakes, it is important to have a system that functions reasonably well despite the issuance of some bad patents.

At current application rates, it would be very expensive to give all patent applications an examination sufficiently thorough to reduce significantly the problems with bad patents being issued. Now, the patent system is important, so it is possible that spending several billion additional dollars on the PTO would be worthwhile for society. But this kind of dramatic increase in PTO resources does not seem very realistic in the current fiscal environment. Fortunately, it is also not necessary to expend the resources necessary to provide very reliable examination for all patent applications.

Much more chaff than wheat

The first step to understanding why greatly increasing the resources for examination is not the best solution to the problem is to understand that most patents are, and always will be, worthless and unimportant. This is not a feature of the patent office; it is a feature of the innovation process. It is partly due to the human tendency for us each to think that our ideas are better than other people think they are. But it also reflects a deeper attribute of the process of technological development: the significance of a new idea usually cannot be known when it is first developed, because that significance depends on subsequent developments, both technological and economic. Many, many, "good" ideas are patented that never actually turn out to be worth anything. It is not that they shouldn't have been patented to begin with. It's just that for every invention with lasting technological or economic significance, there will always be dozens or hundreds of ideas that seemed potentially worthwhile, but which eventually proved to be valueless.

The fact that almost all patents are ultimately worthless has an important implication for the "patent quality" problem. If most patents are doomed to be consigned to the dustbin of technological history, it can't make sense to spend a lot of resources to make sure that they all receive very high quality examination before issuing. The legions of inventors and patent attorneys may not like to think about this, but for the vast majority of patent applications, it will simply never matter—

either to the inventor, her employer, or competitors—whether the patent is allowed to issue or not.

"Rational Ignorance"

If careful examination is expensive, and the vast majority of patents will never matter to anyone, then it would be inefficient to expend society's resources on careful examination of all patent applications. In the colorful phrase of Mark Lemley (2002), we can think of the poor quality of patent examination as representing "Rational Ignorance," by which he means that society is rationally choosing to remain ignorant about which patents really should be granted by the PTO. Lemley argues that it is, in fact, reasonably efficient to simply accept that PTO examination will be of poor quality, and that the cases that really matter will have to be sorted out in the courts. Court cases are expensive, but because only the small fraction of patents that matter will ever get litigated, Lemley argues that the cost of litigation is, overall, efficient.

I agree with Lemley that it would be inefficient to provide thorough examination for all applications at the current rate of patent application. I disagree, however, that the current situation is acceptably efficient. First, while the out-of-pocket cost of litigation may be tolerable, the intangible cost of a system with pervasive low-quality patents is much higher than just the cost of paying lawyers to file and defend patent cases. The uncertainty that the current system creates for all parties regarding who can legally use what technologies is a cost that is very hard to quantify, but is surely significant. Talk to anyone involved in trying to commercialize new technologies, and you are likely to hear complaints about the headaches and uncertainty created by overlapping patent claims. Further, this uncertainty undermines everyone's incentives to invest in new technology. From the perspective of society as a whole, the loss of new products and processes that never make it to market, or that gain a toehold and are then abandoned after a threatened patent fight, is much larger than the visible costs of patent litigation. And, fortunately, there are changes that could be made in the system that would improve patent quality without requiring dramatic increases in the resources used in the examination process.

Inventors respond to how the Patent Office behaves

The key to more efficient patent examination is to go beyond thinking about what patent examiners do, to consider how the nature of the examination process affects the behavior of inventors and firms. To put it crudely, if the patent office allows bad patents to issue, this encourages people with bad applications to show up. While the increase in the rate of patent applications over the last two decades is driven by many factors, one important factor is the simple fact that it has gotten so much easier to get a patent, so applications that never would have been submitted before now look like they are worth a try. Conversely, if the PTO pretty consistently rejected applications for bad patents, people would understand that bad applications are a waste of time and money. While some people would still try—either because they aren't smart enough to know they have a bad application, or because they are willing to take a roll of the dice—the number of applications would likely be considerably fewer that it has been in recent years.

Get information to flow into the PTO

Another important aspect of incentives has to do with information: who has it, and what do they do with it? 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.

Potential litigants respond to how the courts behave

When the CAFC issues rulings that increase the chance of the patentee prevailing in an infringement suit, the consequences of this change are not limited to possible changes in the outcome of specific cases. Such a change in perceived success probabilities changes what disputes are, in fact, litigated. Conversations with attorneys involved in patent disputes make clear that the CAFC's strengthening of the offensive and defensive weapons of the patentee has significantly increased patentees'

willingness to bring suit. Similarly, the change has significantly decreased the willingness of accused infringers to fight, even when they believe that the patents being used to threaten them are not valid. In particular, firms with highly successful products—when faced with a jury trial over complex issues of novelty and obviousness, and the risk that defeat might mean large penalties for willful infringement and/or an injunction shutting down their product—may feel that they have no rational business choice but to pay a ransom to avoid litigation. When this happens, the cost of innovation rises and society is the loser. Constraining the growth in litigation, and the uncertainty created for all innovators by the risk of suit, will require a change in these incentives.

BUILDING BLOCKS OF REFORM

There are three key conceptual pieces for thinking about patent policy reform:

1. Investigate ways to create incentives and opportunities for parties that have information about the novelty and obviousness of inventions to bring that information to the PTO when it is considering a patent grant.
2. Consider the possibility for multiple levels of review of patent applications, with the time and effort expended escalating as an application proceeds to higher levels, so that money is not wasted on unimportant patents, but sufficient care is taken to avoid mistakes where the stakes are high.
3. Address the balance of incentives and opportunities for patent holders and alleged infringers in the context of litigation. People with valid patents that are being infringed must have opportunity to seek redress, but the current system makes it too easy for patent holders to use threatened litigation—even when based on patents of dubious validity—too risky for alleged infringers to fight.

The first two of these concepts are aimed at making the PTO more effective at reasonable cost. The third addresses the reality that the best of all possible PTOs will still make mistakes, and so we need a court system that is capable of rectifying those mistakes.

Effective reform must start with the recognition that much of the information needed to decide if a given application should be approved is in the hands of competitors of the applicant, rather than the PTO. A review process with multiple potential review levels efficiently balances the need to bring in outside information with the reality that most patents are unimportant. Multilevel review, with the barriers to invoking review and the thoroughness of that review both increasing at higher levels, would naturally focus attention on the most potentially important applications. Most patents would never receive anything other than the most basic examinations. But for those applications that really mattered, parties would have an incentive and opportunities to bring information in their possession before the PTO, and the PTO would have more resources to help it make the right decision. Although there is disagreement about the details, implementation of a review procedure or procedures of this kind has been endorsed by the FTC, the STEP Board and the AIPLA.

If bad patents with important consequences were weeded out by the PTO, the incentive to file frivolous applications in the first place would be reduced. This would break the current vicious cycle in which inventors are induced to make marginal applications by their likelihood of success, and the resulting flood of applications overwhelms the patent office and makes it harder to separate the wheat from the chaff.

Breaking the vicious cycle of bad examination and bad applications is the key to reform of the patent review process. But there are always going to be mistakes, and so it is important that the court system operate efficiently to rectify those mistakes, while protecting holders of valid patents. Today, the legal playing field is significantly tilted in favor of patentees.

Prof. Lerner and I have highlighted the role of juries in deciding patent validity questions as a crucial source of undesirable and unnecessary uncertainly in the litigation process. The evidence in a patent case can be highly technical, and the average juror has little competence to evaluate it. Having decisions made by people who can't really understand the evidence increases the uncertainty surrounding the outcome. The combination of this uncertainty with the legal presumption of validity—the rule that patents must be presumed legitimate unless proven otherwise—is a big reason why accused infringers often settle rather than fight even when they think they are right.

For accused infringers, the difficulties associated with the presumption of validity and the uncertainty of juries are compounded by the availability of remedies or pen-

alties for infringement that are far out of proportion to the economic harm that a patent holder may have suffered as the result of infringement. While it is important that patent holders have the ability to uphold valid patents, remedies that are vastly disproportionate to the economic significance of the patent at issue do not serve any legitimate public policy purpose, and create the incentive and opportunity for those who would use the patent system for ransom and extortion rather than innovation.

CONCLUSION

The protection for true innovators created by a workable patent system is vital to technological change and economic growth. The problems in the existing U.S. patent system are structural, and the solutions need to be fundamental. As much as the USPTO and the Courts can and should address some of the weaknesses of the existing system, meaningful reform requires important modifications to the statutory framework. In these days of polarization and ideological divide in Washington, patent policy reform offers an unusual opportunity for real action in the public interest. As evidenced by the discussion in the FTC and STEP reports, being pro-reform does not make one anti-patent. On the contrary, the motivation for patent reform derives precisely from the recognition that a well-functioning patent system is absolutely crucial to our technological progress and economic health.

REFERENCES

Ronald W. Clark, *Einstein: The Life and Times,* London: Hodder and Stoughton, 1973.

Cohen, Wesley and Stephen Merrill, Eds., Patents in the Knowledge-Based Economy, National Academy Press, *www.nap.edu/catalog/10770.html* (2003)

Adam B. Jaffe, and Josh Lerner, *Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress, and What To Do About It,* Princeton: Princeton University Press, 2004.

Mark Lemley, "Rational Ignorance at the Patent Office," *Northwestern University Law Review,* 95 (2001) 1495–1532.

Merrill, Stephen A., Richard C. Levin and Mark B. Myers, Eds., *A Patent System for the 21st Century (Report of the Committee on Intellectual Property Rights in the Knowledge-Based Economy),* Board on Science Technology and Economic Policy, National Research Council ("STEP Report"), *www.nap.edu/html/patentsystem* (2004)

U.S. Federal Trade Commission, *To Promote Innovation, The Proper Balance of Competition and Patent Law and Policy, www.ftc.gov/os/2003/10/innovationrpt.pdf* (2003)

TESTIMONY OF MARK B. MYERS, CO-CHAIR OF THE NATIONAL ACADEMY OF SCIENCES' REPORT *"A PATENT SYSTEM FOR THE 21ST CENTURY,"* UNIONVILLE, PA

Mr. MYERS. Over the past 45 years, we have been in a decidedly pro-patent and pro-intellectual property area. As a result, patents are being more zealously sought, vigorously asserted and aggressively enforced than ever before.

There are many indications that firms, as well as universities and public institutions are attaching greater importance to patents, are willing to pay higher costs to acquire and exercise to defend them.

The workload of the U.S. Patent Office has increased several-fold in the last several decades, to the point that it is issuing approximately 100 patents every working hour.

Meanwhile, the cost of acquiring patents, promoting or securing licenses to patenting technology and prosecuting and defending against infringements are rising rapidly.

There have been a number of concerns that have arisen during this period. One is decline in patent quality, difficultly in negotiating patent thickets, increasing probability of holdup, especially in cumulative technology, increase in defensive patenting, rising

transaction costs, incursions on public domain of ideas, impediments to research and disclosure purpose not being well-served.

In particular, concerns were raised about patents having chilling effects on research tools, cumulative technologies, network systems technologies, where open standards are required.

As we look at evaluating the patent system, our study used seven criteria. The patent system should accommodate new technologies. The system should reward only those inventions that meet statutory tests of novelty and utility.

The patent system should serve a second function of disseminating technical information. Administrative and judicial decisions should be timely and the costs associated with them reasonable and proportionate.

Access to patent technology is important in research and development of cumulative technologies where one advance builds upon another and previous advances.

Integration or reciprocity of the three major patent systems, United States, Japan and Europe, would reduce the public and private transaction costs, facilitating trade, investment and innovation, and there should be a playing field with all intellectual property holders who are similarly situated enjoying the same benefits and having the same obligations.

The Academy study made seven recommendations to improve the patent system. Preserve an open-ended unitary flexible patent system, reinvigorate the non-obvious standard, institute a post-open review procedure, strengthen U.S. Patent Office capabilities, shield some research uses of patented inventions from liability for infringement, modify or remove the subjective elements of litigation, and that would include best mode, inequitable conduct and willful infringement, and, finally, reduce the redundancies and inconsistencies among the patent systems.

And particularly we feel that the reforms that we take should move us toward a stronger position with respect to having the ability to have successful common practices between the European, Japan and U.S. systems.

And that concludes my remarks. Thank you.

[The prepared statement of Mr. Myers follows:]

PREPARED STATEMENT OF MARK B. MYERS

Good afternoon, Chairman Berman and members of the subcommittee. I am the former senior vice president for research and technology of the Xerox Corporation. Together with Richard Levin, President of Yale University, I chaired the Committee on Intellectual Property Rights in the Knowledge-Based Economy of the National Academies, comprised of the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine, originally chartered by Congress in 1863 to advise the government on matters of science, technology, and health.

Although most Academy studies are conducted in response to an agency's or a congressional request, the study I will describe was initiated by the Academies' standing Board on Science, Technology, and Economic Policy (STEP), because it recognized that the breakneck pace of technological change across many industries was creating stresses in the patent system that needed to be examined to ensure that it continues to be a stimulus to innovation and does not become an impediment to it.

I want to underscore that our panel began work in 2000 and we completed our report, *A Patent System for the 21st Century,* nearly three years ago in the spring of 2004. I realize that there has been much discussion of strengths and weaknesses of the patent system since then and some legislative activity and considerable judicial attention, and new issues have emerged in the course of that discussion. Never-

theless, I believe that the concerns that motivated our recommendations, several of which were incorporated in bills introduced in the last Congress and paralleled recommendations of the October 2003 Federal Trade Commission report, remain the principal reasons for moving forward on patent reform. I may have personal views on some of the issues that have become contentious in the past couple of years, but of course I cannot speak for the committee or for the National Academies on matters we did not consider in depth.

Since 1980 a series of judicial, legislative, and administrative actions have extended patenting to new technologies (biotechnology) and to technologies previously without or subject to other forms of intellectual property protection (software and business methods), encouraged the emergence of new players (universities), strengthened the position of patent holders vis-á-vis infringers domestically and internationally, relaxed other restraints on the use of patents (antitrust enforcement), and extended their reach upstream from commercial products to scientific research tools and materials.

As a result, patents are being more zealously sought, vigorously asserted, and aggressively enforced than ever before. There are many indications that firms in a variety of industries, as well as universities and public institutions, are attaching greater importance to patents and are willing to pay higher costs to acquire, exercise, and defend them. The workload of the U.S. Patent and Trademark Office has increased several-fold in the last few decades, to the point that it is issuing approximately 100 patents every working hour. Meanwhile, the costs of acquiring patents, promoting or securing licenses to patented technology, and prosecuting and defending against infringement allegations in the increasing number of patent suits are rising rapidly.

In spite of these changes and the obvious importance of patents to the economy, there had not been a broad-based study of the patent system's performance since the Depression. Accordingly, the Academies assembled a committee that included three corporate R&D managers, a university administrator, three patent holders, and experts in biotechnology, bioengineering, chemicals, telecommunications, microelectronics, and software, as well as economists, legal scholars, practicing attorneys, and a former federal judge. This diversity of experience and expertise distinguished our panel from nearly all previous commissions on the subject, as did our study process. We held conferences and public hearings and we commissioned original empirical research on some aspects of the system. The resulting report provides a thoroughly researched, timely perspective on how well the system is working.

High rates of technological innovation, especially in the 1990s but continuing to this day, suggest that the patent system is not broken and does not require fundamental changes. Nevertheless, the committee was able to identify five issues that should and can be addressed now.

First, maintaining consistent patent quality is important but difficult in fast-moving fields. Over the past decade, the quality of issued patents has come under frequent sharp attack, as it sometimes has in the past. One can always find patents that appear dubious and some that are even laughable—the patent for cutting and styling hair using scissors or combs in both hands. Some errors are unavoidable in a system that issues more than 160,000 patents annually, and many of those errors will have no economic consequence because the patents will not be enforced. Still, some critics have suggested that the standards of patentability have been lowered by court decisions. Other observers fault the USPTO's performance in examining patent applications, variously attributing the alleged deterioration to inadequate time for examiners to do their work, lack of access to prior art information, perverse incentives to grant patents rather than carefully evaluate applications, and inadequate examiners' qualifications.

Because the claim that quality has deteriorated in a broad and systematic way has not been empirically tested, conclusions must remain tentative. But there are several reasons to suspect that more issued patents are substandard, particularly in technologies newly subject to patenting. One reason to believe that quality has suffered, even before taking examiner qualifications and experience into account, is that in recent years the number of patent examiners has not kept pace with the increase in workload represented by the escalating number and growing complexity of applications. The result, in part, has been longer pendency, but in all likelihood there has also been inadequate scrutiny. Second, patent approval rates are higher than in some other major nations' patent offices. Third, changes in the treatment of business method and genomic patent applications, introduced in 2000 and 2001 as a result of criticisms of the quality of patents being issued, reduced or at least slowed down the number of patent grants in those fields. And fourth, there does appear to have been some dilution of the application of the non-obviousness standard, particularly in biotechnology, and some limitations on its proper application, for ex-

ample to business methods patent applications. Although quality appears to be more problematic in rapidly moving areas of technology newly subject to patenting and perhaps is corrected over time, the cost of waiting for an evolutionary process to run its course may be too high when new technologies attract the level of investment exhibited by the Internet, biotechnology, and now nanotechnology.

What are the costs of uncertainty surrounding patent validity in areas of emerging technology? First, uncertainty may induce a considerable volume of costly litigation. Second, in the absence of litigation, the holders of dubious patents may be unjustly enriched, and the entry of competitive products and services that would enhance consumer welfare may be deterred. Third, uncertainty about what is patentable in an emerging technology may discourage investment in innovation and product development until the courts clarify the law, or inventors may choose to incur the cost of product development only to abandon the market years later when their technology is deemed to infringe. In sum, greater certainty about patent validity would benefit innovators, technological followers, and consumers alike.

Second, differences 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. In 2003 it was estimated to cost as much $750,000 to $1 million to obtain comprehensive worldwide patent protection for an important invention, and that figure was increasing at a rate of 10 percent a year. Important differences include the following: Only the United States gives preference to the "first to invent" rather than the "first to file." Only the United States requires that a patent application disclose the "best mode" of implementing an invention. 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.

Third, some U.S. practices seem to be slowing the dissemination of information. In the United States there are many channels of scientific interaction and technical communication, and the patent system contributes more to the flow of information than does the alternative of maintaining technical advances as trade secrets. There are nonetheless features peculiar to the U.S. patent system that inhibit information dissemination. One is the exclusion of a nontrivial number of U.S. patent applications from publication after 18 months, an international norm since 1994. A second U.S. idiosyncrasy is the legal doctrine of willful infringement, which can require an infringer to pay triple damages if it can be demonstrated that the infringer was aware of the violated patent before the violation. Some observers believe that this deters an inventor from looking at the patents of possible competitors, because knowledge of the patent could later make the inventor subject to enhanced damages if there is an infringement case. This undermines one of the principal purposes of the patent system: to make others aware of innovations that could help stimulate further innovation.

Fourth, litigation 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.

Fifth, access to patented technologies is important in research and in the development of cumulative technologies, where one advance builds on one or several previous advances. Faced with anecdotes and conjectures about restrictions on researchers, particularly in biotechnology, we conducted a modest survey of diverse participants in the field to determine whether patent thickets are emerging or access to foundational discoveries is restricted. We found very few cases although some evidence of increased research costs and delays and much evidence that research scientists are largely unaware of whether they are using patented technology. During our study, the Court of Appeals for the Federal Circuit ruled that university researchers are not shielded by the common law research exception against infringement liability. This combination of circumstances—ignorance of intellectual property on the one hand and full legal liability on the other—represents an exposure that universities are not equipped to eliminate by the kinds of due diligence performed by companies and investors.

TOWARD A BETTER PATENT SYSTEM

The Academies' committee supported seven steps to ensure the vitality and improve the functioning of the patent system:

1) Preserve an open-ended, unitary, flexible patent system. The system should remain open to new technologies, and the features that allow somewhat different treatment of different technologies should be preserved without formalizing different standards; for example, in statutes that would be exceedingly difficult to draft appropriately and equally difficult to change if found to be inappropriate. Among the tailoring mechanisms that should be exploited is the USPTO's development of examination guidelines for new or newly patented technologies. In developing such guidelines, the office should seek advice from a wide variety of sources and maintain a public record of the submissions. The results should then be part of the record of any appeal to a court, so that they can inform judicial decisions.

This information could be of particular value to the Court of Appeals for the Federal Circuit, which is in most instances the final arbiter of patent law. To keep this court well informed about relevant legal and economic scholarship, it should encourage the submission of amicus briefs and arrange for temporary exchanges of members with other courts. Appointments to the Federal Circuit should include people familiar with innovation from a variety of perspectives, including management, finance, and economic history, as well as nonpatent areas of law that bear on innovation.

2) Reinvigorate the nonobviousness standard. The requirement that to qualify for a patent an invention cannot be obvious to a person of ordinary skill in the art should be assiduously observed. In an area such as business methods, where the common general knowledge of practitioners is not fully described in published literature likely to be consulted by patent examiners, another method of determining the state of knowledge needs to be employed. Promising experiments are underway to encourage the submission of relevant prior art during the examination, but turning examination into an adversarial process could be counter-productive and very likely unacceptable to applicants. Nevertheless, the open review procedure we describe next provides a means of obtaining expert participation if a patent is challenged.

Gene sequence patents present a particular problem because of a Federal Circuit ruling making it difficult to apply the obviousness test in this field. This is unwise in its own right and is also inconsistent with patent practice in other countries.

3) Institute an "Open Review" procedure. Congress should pass legislation creating a procedure for third parties to challenge patents after their issuance in a proceeding before administrative patent judges of the USPTO. The grounds for a challenge could be any of the statutory standards—novelty, utility, nonobviousness, disclosure, or enablement—or the case law proscription on patenting abstract ideas and natural phenomena. The time, cost, and other characteristics of this proceeding need to make it an attractive alternative to litigation to resolve questions of patent validity. For example, federal district courts could more productively focus their attention on patent infringement issues if they were able to refer validity questions to an Open Review proceeding. The result should be much earlier, less expensive, and less protracted resolution of validity issues than we have with litigation and of a greater variety of validity issues than we have with re-examination even if it were used.

4) Strengthen USPTO resources. To improve its performance, the USPTO needs additional resources to hire and train additional examiners and implement a robust electronic processing capability. Further, the USPTO should create a strong multidisciplinary analytical capability to assess management practices and proposed changes, provide an early warning of new technologies being proposed for patenting, and conduct reliable, consistent, reputable quality reviews that address office-wide as well as individual examiner performance. Since our report congressional appropriations have approximated USPTO receipts from application and maintenance fees. This is a positive development, but additional resources will be needed, for example to operate an efficient open review system.

5) Modify or remove the subjective elements of litigation. Among the factors that increase the cost and reduce the predictability of patent infringement litigation are issues unique to U.S. patent jurisprudence that depend on the assessment of a party's state of mind at the time of the alleged infringement or the time of patent application. These include whether someone "willfully" infringed a patent, whether a patent application included the "best mode" for implementing an invention, and whether a patent attorney engaged in "inequitable conduct" by intentionally failing to disclose all prior art when applying for a patent. Investigating these questions requires time-consuming, expensive, and ultimately subjective pretrial discovery. The committee believed that significantly modifying or eliminating these rules altogether would increase the predictability of patent dispute outcomes without substantially affecting the principles that these aspects of the enforcement system were meant to promote.

6) Harmonize the U.S., European, and Japanese patent examination systems. The United States, Europe, and Japan should further harmonize patent examination procedures and standards to reduce redundancy in search and examination and eventually achieve mutual recognition of applications granted or denied. The committee recommended that the United States should conform to practice elsewhere by adopting the first inventor to file system, dropping the "best mode" requirement, and eliminating the current exception to the rule of publication of an application after 18 months. The committee also recommends that the United States encourage other jurisdictions to adopt provisions for a grace period for filing an application. These objectives should be pursued on a trilateral or even bilateral basis if multilateral negotiations do not progress.

7) Consider enacting a narrowly drawn exception from infringement liability for some research activities. Here we do not propose specific legislative language, but we do suggest some principles for Congress to consider in drafting a narrow research exception that would preserve the intent of the patent system and avoid some disruptions to fundamental research.

In making these recommendations, our committee was mindful that although the patent law is designed to be uniform across all applications, its practical effects vary greatly across technologies, industries, and classes of inventors. There is a tendency in discourse on the patent system to identify problems and solutions to them from the perspective of one field, sector, or class. Although the committee did not attempt to deal with the specifics of every affected field, the diversity of the membership enabled us to consider each of the proposed changes from the perspective of very different sectors. Similarly, we examined very closely the claims made that one class of inventors—usually individuals and very small businesses—would be disadvantaged by some change in the patent system. Some of the committee's recommendations—universal publication of applications, Open Review, and shifting to a first-inventor-to-file system—have in the past been opposed on those grounds. The committee reviewed very carefully, for example, how small entities currently fare in interference proceedings, examination, and re-examination. We also studied how European opposition proceedings impact small businesses. We concluded they enjoy little protection and in fact are often at a disadvantage in the procedures we propose to change. In short, we believe that our recommendations, on balance, would be as beneficial to small businesses and individual inventors as to the economy as a whole.

I appreciate the opportunity afforded by the subcommittee to testify on our conclusions and would be happy to answer any questions.

TESTIMONY OF SUZANNE MICHEL, CHIEF INTELLECTUAL PROPERTY COUNSEL AND THE DEPUTY ASSISTANT DIRECTOR FOR POLICY COORDINATION, FEDERAL TRADE COMMISSION, WASHINGTON, DC

Ms. MICHEL. Chairman Berman and Members of the Subcommittee, I appreciate this opportunity to discuss the findings and recommendations of the FTC's report on the patent system, "To Promote Innovation: The Proper Balance of Competition in Patent Law and Policy."

Before doing so, please allow me to make this disclaimer. The written testimony that we submitted represents the views of the Federal Trade Commission. My oral testimony and answers to questions today reflect my own views and not necessarily those of the commission or any individual commissioner.

Both competition and patents influence innovation, which drives economic growth and increases standards of living.

To examine the relationship of competition and patent policy, the FTC and the Department of Justice held 24 days of hearings involving more than 300 panelists. The report summarizes testimony from the hearing and explains the commission's recommendations for improving the patent system.

Following the release of the report, the FTC cosponsored several additional meetings on patent reform.

The FTC report confirms that patents play an important role in promoting innovation by providing an incentive to develop and commercialize inventions.

It is important to remember, however, that competition also plays an important role in stimulating innovation. The report raises concerns that patents of questionable quality cause misalignment of competition and patent policy to the detriment of consumers.

For instance, questionable patents may discourage firms from conducting R&D in areas that the patent improperly covers. If a competitor chooses to pursue R&D without a license, it risks expensive and time-consuming litigation.

If that competitor chooses instead to pay royalties to avoid litigation, the cost of follow-on innovation and commercial development increase.

The FTC report makes 10 recommendations for changes to the patent system. I will highlight two today.

First, post-grant opposition. Once a questionable patent has issued, litigation to challenge it is extremely costly and lengthy and litigation is not an option unless the patent owner has threatened the potential challenger with patent infringement.

As I described, these problems can lead a competitor to forego an area of R&D or pay unjustified royalties.

Therefore, the FTC report recommends creation of a post-grant opposition procedure and identifies several characteristics that might contribute to its success. A successful post-grant review should be allowed to address all important patentability issues.

The report suggests several other features that the procedures should incorporate to be meaningful and to protect patentees from harassment.

Second, willful infringement. Some hearing participants explained that they do not read their competitors' patents out of a concern for potential treble damages liability based on a finding of willful infringement.

Failure to read competitors' patents undermines one of the primary benefits of the patent system, the public disclosure of new invention. Moreover, many firms complain that the ease with which a patentee can send a notice of a patent to competitors and trigger the need for an expensive legal opinion raises competitors' costs.

Nonetheless, infringers must not be allowed to profit from knowingly and deliberately using another's patented invention.

Therefore, the FTC report recommends that legislation be enacted requiring either actual written notice of infringement from the patentee sufficient to confer standing to challenge patent validity or deliberate copying of the patentee's invention as a predicate to willful infringement.

The FTC's recommendations would permit firms to read patents for their disclosure value, but the recommendation would also retain a viable willfulness doctrine that protects both wrong patentees and competition.

In conclusion, implementing these and other recommendations in the FTC's report will increase the ability of patents and competition to work together to promote innovation, consumer welfare and our nation's prosperity.

We look forward to working with you on this important issue, and I would be happy to answer any questions you may have.

[The prepared statement of Ms. Michel follows:]

PREPARED STATEMENT OF SUZANNE MICHEL

Chairman Berman, Ranking Member Coble, and members of the Committee, I am Suzanne Michel, Deputy Assistant Director for Policy and Coordination at the Federal Trade Commission (FTC).[1] I appreciate this opportunity to appear before the Committee today to discuss the findings and recommendations of the FTC's October 2003 Report, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy* (the Report).[2] The prepared testimony summarizes the FTC's reasons for studying the patent system, the process the FTC used to develop the Report, and its finding that, although patents play an important role in promoting innovation, patents of questionable quality can hinder competition and innovation, to the detriment of consumers. The testimony also describes the Report's recommendations for improving patent quality and their relationship to proposals for patent reform legislation.

I. The FTC's Report on the Patent System

The FTC is an antitrust enforcement agency but it also has a mandate to study issues related to competition policy. The agency undertook its study of the patent system under both of these roles in response to the significance of patents in the knowledge-based economy and the role of dynamic, innovation-based considerations in competition policy.[3] Competition and patents influence innovation, which drives economic growth and increases standards of living. The Report explains in detail the relationship between competition policy and patent policy,

[1] This written statement represents the views of the Federal Trade Commission. My oral presentation and responses to questions are my own, and do not necessarily represent the views of the Commission or any Commissioner.

[2] Federal Trade Commission, To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy (October 2003), *available at* http://www.ftc.gov/opa/2003/10/cpreport.htm [hereinafter Report].

[3] This initiative to learn about competition and patent law was not unique. Rather, it was only one component of the agency's mission to bring a competition perspective to bear on important areas of governmental policy. The Commission's 2002 study, *Generic Drug Entry Prior to Patent Expiration,* provides another example. *Available at* http://www.ftc.gov/os/2002/07/genericdrugstudy.pdf. The FDA promulgated regulations adopting some of the recommendations of that study (68 Fed. Reg. 36675-36712), and Congress implemented other recommendations by amending the Hatch-Waxman Act though the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Pub. L. No. 108-172, § 1110-1112.

focusing on rapidly advancing industries such as pharmaceuticals, biotechnology and the computer industry.

A. Development of the Report

To examine the relationship of competition and patent policy, the FTC and the Department of Justice's Antitrust Division (DOJ) held hearings from February through November 2002. The hearings took place over 24 days, and involved more than 300 panelists, including representatives from large and small business firms; the independent inventor community; patent and antitrust organizations; and the academic community in economics and antitrust and patent law. In addition, the FTC received about 100 written submissions. Many of the business representatives were from high-tech industries such as pharmaceuticals, biotechnology, computer hardware and software, and the Internet. The Report summarizes testimony from the hearings, discusses independent research, and explains the Commission's conclusions about and recommendations for improving the patent system.

Following release of the Report, the FTC co-sponsored several meetings on patent reform, including a conference co-sponsored with the Berkeley Center for Law and Technology, and the National Academy of Sciences (NAS) in April 2004, and four town meetings on patent reform co-sponsored with NAS and the American Intellectual Property Law Association (AIPLA) during 2005.[4] Meeting participants debated recommendations for patent reform made by the FTC, the NAS and AIPLA.

B. The Report's Findings

[4] A summary of the town meetings on patent reform co-sponsored by AIPLA, the NAS and the FTC can be found at http://www.ftc.gov/opp/intellect/050601summarytownmtg.pdf.

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.[5] 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.[6]

For example, at the hearings representatives from the pharmaceutical industry stated that patent protection is indispensable in promoting pharmaceutical innovation for new drug products. By preventing rival firms from free riding on the innovating firms' discoveries, patents can enable pharmaceutical companies to cover their fixed costs and regain the high levels of capital they invest in research and development.[7] At the same hearings, representatives from the biotechnology industry explained that many biotechnology companies conduct basic research to identify promising products and then partner with a pharmaceutical company to test and commercialize the product. Patent protection allows them to attract funding from capital markets, and to facilitate inter-firm relationships, such as licencing and joint ventures, necessary for commercial development of their inventions.[8]

[5] See Thomas O. Barnett, Assistant Att'y Gen., U.S. Dep't of Justice, *Interoperatibility Between Antitrust and Intellectual Property*, address before the George Mason University Symposium on Managing Antitrust Issues in the Global Marketplace 3-4 (Washington, D.C., Sept. 13, 2006), http://www.usdoj.gov/atr/public/speeches/218316.pdf.

[6] Report, Ch. 2 at 3-7.

[7] Report, Ch. 3 at 11-12.

[8] Report, Ch. 3 at 15, 17-18.

Competition also plays a very important role in stimulating innovation and spurs invention of new products and more efficient processes. Competition drives firms to identify consumers' unmet needs and to develop new products or services to satisfy them. In some industries, firms race to innovate in hopes of exploiting first-mover advantages. Companies strive to invent lower-cost manufacturing processes, thereby increasing their profits and enhancing their ability to compete.[9]

At the hearings, many participants representing computer hardware companies observed that competition, more than patent protection, drives innovation in their industries.[10] In the semiconductor industry, for instance, lead-time over rivals and trade secret protection provide key mechanisms for appropriating returns on R&D investments.[11] Representatives of software and internet companies made similar observations that competition to commercialize the most recent technological advance provides the primary driver of innovation.[12]

In the pharmaceutical industry also, the competition spurred by entry of a generic drug product has forced brand-name firms to invent new products to replenish their revenue streams.[13]

To optimally foster innovation, patent and competition policy must work together in tandem. Errors or systematic biases in how one policy's rules are interpreted and applied

[9] Report, Ch. 2 at 9-12.

[10] Report, Ch. 3 at 31-32.

[11] Report, Ch. 3 at 31 (*citing* W.M. Cohen et al., *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (Or Not)*, National Bureau of Econ. Research Working Paper No. 7552, 2000, *available at* http://papersdev.nber.org/papers/27552).

[12] Report, Ch. 3 at 46.

[13] Report, Ch. 3 at 11 (*citing* Glover 3/19 at 146).

disrupts the other policy's effectiveness.[14] It is important to note that the Report and hearings confirmed that patents play an important role in promoting innovation. Nonetheless, many observers expressed significant concerns that, in some ways, the patent system has become misaligned with competition policy.

C. Concerns with Questionable Patents

One issue stood out at the hearings for the widespread agreement it generated among panelists: the importance of patent quality in maintaining the alignment between patent and competition policy. Panelists raised concerns about the issuance of patents of questionable quality–those of questionable validity or having overly broad claims. Patents of questionable quality can distort competition, innovation, and the marketplace in at least four ways.

First, they may slow follow-on innovation by discouraging firms from conducting research and development in areas that the patent improperly covers.[15] When firms fear that they will infringe a questionable patent, the substantial costs and risks of litigation may persuade them to direct their resources into other areas. For example, biotechnology firms reported that they avoid infringing questionable patents and therefore will refrain from entering or continuing with a particular field of research that such patents appear to cover.[16] A lawsuit may not be an

[14] The FTC's Report on the patent system is the first of two reports that the agency will issue regarding the relationship of competition and patent policies. Optimal results require proper antitrust policies, as well as proper patent policies. As competition policymakers, the FTC has a responsibility to ensure that it interprets and applies antitrust law in ways that do not undermine the innovation that the patent system promotes. A second, joint report by the FTC and DOJ will discuss and make recommendations for antitrust to maintain a proper relationship with the patent system. Separate from the hearings, the Commission has found that exclusion payments in pharmaceutical patents settlements harm competition. *See* Anticompetitive Settlements in the Pharmaceutical Industry, Prepared Statement of the Federal Trade Commission Before the Committee on the Judiciary of the United States Senate (January 17, 2007). See http://www.ftc.gov/speeches/leibowitz/070117anticompetitivepatentsettlements_senate.pdf.

[15] Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting*, in Innovation Policy and the Economy 119, 126 (Adam Jaffe et al. eds., 2001).

[16] Report, Ch. 3 at 21.

alternative because a competitor has no standing to challenge patent validity unless the patent holder has threatened litigation. In these circumstances, as one biotech representative complained, "there are these bad patents that sit out there and you can't touch them."[17] A competitor might attempt to invalidate the patent through a re-examination procedure in the PTO, but this allows only limited participation by third parties, and most hearing participants did not believe it proved effective.[18] Such conditions deter market entry and follow-on innovation by competitors and increase the potential for the holder of a questionable patent to suppress competition.

Second, patents that should not have been granted raise costs when they are challenged in litigation.[19] If a competitor chooses to pursue R&D in the area covered by the patent without a license, it risks expensive and time-consuming litigation with the patent holder that wastes resources.[20]

Third, questionable patents may raise costs by inducing unnecessary licensing. If a competitor chooses to negotiate a license and pay royalties to avoid costly and unpredictable litigation, the costs of follow-on innovation and commercial development increase due to the

[17] Report Ch. 3 at 21-22.

[18] Report, Ch. 3 at 22-23; Ch. 5 at 16-18.

[19] Report, Ch. 36-41. "Large and small companies are increasingly being subjected to litigation (or its threat) on the basis of questionable patents." *United States Patent and Trademark Office Fee Modernization Act of 2003: Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Property of the House Comm. on the Judiciary*, 108th Cong. 2 (2003) (Statement of Michael K. Kirk, Executive Director, American Intellectual Property Law Association), *available at* http://www.aipla.org/html/Legislative/108/testimony/Fee Leg.htm.

[20] If litigation does take place, it typically costs millions of dollars and takes years to resolve. The median costs to each party of proceeding through a patent infringement suit to a trial verdict are at least $500,000 when the stakes are relatively modest. When more than $25 million is at risk in a patent suit, the median litigation costs for the plaintiff and the defendant average $4 million each, and in the highest-stakes patent suit, costs can exceed this amount by more than fivefold. A Patent System for the 21st Century, at 68 (National Academies' Board on Science, Technology and Economic Policy) (2004), *available at* http://www.nap.edu/html/patentsystem [hereinafter, NAS Report]; *see also*, Report, Ch. 2 at 7-8; Ch. 3 at 20-26, 33-41, 50-55; Ch. 5 at 2-4.

unjustified royalties and transaction costs.[21] Questionable patents particularly contribute to increased licensing costs in industries with "patent thickets."[22] In some industries, such as computer hardware and software, firms can require access to dozens, hundreds, or even thousands of patents to produce just one commercial product. Scholars refer to this phenomenon of overlapping patent rights as a "patent thicket." With so many patents at issue, panelists suggested, infringing another firm's patent can be inevitable, but there is often no economically feasible way, prior to making investments, to search all potentially relevant patents, review the claims, and evaluate the possibility of infringement or the need for a license. This is particularly true where the scope of patent coverage is ambiguous, so that questionable patents increase uncertainty about the patent landscape, and thereby complicate business planning.[23] Firms facing this scenario frequently pay royalties on numerous patents for each product.

Fourth, firms facing patent thickets may spend resources obtaining "defensive patents," not to protect their own innovation from use by others, but to have "bargaining chips" to obtain access to others' patents through a cross-license, or to counter allegations of infringement. Some hearing participants believed that companies spend too many resources on creating and filing these defensive patents, instead of focusing on developing new technologies. This is especially true when defensive patenting is conducted in response to, or results in, questionable patents.[24]

[21] Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 Nw. L. Rev. 1495, 1517 (2001) (noting that "patent owners might try to game the system by seeking to license even clearly bad patents for royalty payments small enough that licensees decide that it is not worth going to court"). *See* Shapiro, *supra* note 14, at 125; Report, Ch. 2 at 7-8; Ch. 3 at 20-26, 33-41, 50-55; Ch.5 at 2-4.

[22] A"patent thicket" is a "dense web of overlapping intellectual property rights that a company must hack its way through in order to actually commercialize new technology." *See* Shapiro, *supra* note 14, at 120.

[23] Report, Ch. 2 at 25-28; Ch. 3 at 34-40, 52-53.

[24] Report, Ch. 3 at 34-40, 52-53.

II. The FTC Report's Recommendations

The FTC Report makes ten recommendations for changes to the patent system to maintain its proper alignment with competition.[25] This testimony provides an overview of those recommendations, followed by a more detailed discussion of the three recommendations that correspond to provisions of previously proposed patent reform legislation: (1) establish a post-grant opposition procedure; (2) change the standards for willful infringement; and (3) require publication of all patent applications at 18 months.[26]

A. Overview

A first set of recommendations aims to increase a challenger's ability to eliminate questionable patents after issuance. Those recommendations are:

- enact legislation to create a new administrative procedure to allow post-grant review of and opposition to a patent after issuance by the PTO; and
- enact legislation to specify that challenges to the validity of a patent are to be determined based on a "preponderance of the evidence" rather than a "clear and convincing evidence" standard.

A second group of recommendations has the goal of minimizing the issuance of questionable patents. Those recommendations are:

- tighten certain legal standards used to evaluate whether a patent is "obvious;"
- provide adequate funding for the Patent and Trademark Office (PTO);

[25] Report, Executive Summary at 7-17.

[26] "The Patents Depend on Quality Act of 2006," H.R. 5096, introduced in the U.S. House of Representatives by Reps. Howard Berman (D-Cal.) and Rick Boucher (D-Va.), and the "Patent Act of 2005," H.R. 2795, introduced by Rep. Lamar Smith (R-Tex.), both contained provisions related to these three recommendations.

- modify certain PTO rules and encourage patent examiners to request additional information from patent applicants; and
- expand PTO's "second-pair-of-eyes" review.

A third group of recommendations seeks to promote the disclosure, teaching, and notice function of patents. Providing reliable and early notice of the subject matter a patent covers enhances business certainty for competitors who wish to avoid infringement. Those recommendations are:

- modify the doctrine of willful infringement by enacting legislation to require, as a predicate for liability for willful infringement, either actual, written notice of infringement from the patentee or deliberate copying of the patentee's invention, knowing it to be patented;
- enact legislation to require publication of all patent applications 18 months after filing; and
- enact legislation to create intervening or prior user rights to protect parties from infringement allegations that rely on certain patent claims first introduced in a continuing or other similar application.

The final set of recommendations encourages consideration of competition and economics in shaping patent policy:

- consider possible harm to competition and innovation, along with other possible benefits and costs, before extending the scope of patentable subject matter; and
- expand consideration of economic learning and competition policy concerns in patent law decision making.

B. Enact Legislation to Create a New Administrative Procedure to Allow Post-Grant Review of and Opposition to Patents

The Report recommended creation of a new administrative procedure for post-grant review and opposition that allows for meaningful challenges to patent validity short of federal court litigation. Existing means for challenging questionable patents are inadequate. Patent prosecution is *ex parte*, involving only the PTO and the patent applicant, even though third parties in the same field as a patent applicant may have the best information and expertise with which to assist in the evaluation of a patent application. To enhance third-party involvement, Congress established limited *inter partes* reexamination procedures that allow third parties to participate in patent reexaminations. Recent amendments have improved those procedures, but they still contain important restrictions and disincentives for their use.[27] Once a questionable patent has issued, the most effective way to challenge it is through litigation, but that path is extremely costly and lengthy and it is not an option unless the patent owner has threatened the potential challenger with patent infringement litigation.

For these reasons, the FTC Report recommended institution of a meaningful post-grant review and opposition procedure and identified several characteristics that might contribute to its success. To be meaningful, post-grant review should be allowed to address important patentability issues, including novelty, nonobviousness, written description, enablement, and utility. An administrative patent judge should preside over the proceeding, which should allow cross-examination and carefully circumscribed discovery. Proceedings should be subject to a time limit and the use of appropriate sanctions authority. Patent applicants must be protected

[27] Report, Ch. 5 at 15-17.

against undue delay in requesting post-grant review and against harassment through multiple petitions for review. The review petitioner should be required to make a suitable threshold showing. Finally, settlement agreements resolving post-grant proceedings should be filed with the PTO and, upon request, made available to other government agencies.[28]

C. Enact Legislation to Require, As a Predicate for Liability for Willful Infringement, Either Actual, Written Notice of Infringement from the Patentee, or Deliberate Copying of the Patentee's Invention, Knowing It to Be Patented

Courts have discretion to award treble damages after finding that patent infringement was undertaken willfully. Some hearings participants explained that they do not read their competitors' patents out of concern for such potential treble damage liability. Failure to read competitors' patents can harm innovation and competition in a number of ways. It undermines one of the primary benefits of the patent system–the public disclosure of new invention. This encourages wasteful duplication of effort, delays follow-on innovation that could derive from patent disclosures, and discourages the development of competition. Failure to read competitors' patents also thwarts rational and efficient business planning and can jeopardize plans for a noninfringing business or research strategy.

It is troubling that some businesses refrain from reading their competitors' patents because they fear the imposition of treble damages for willful infringement. Nonetheless, infringers must not be allowed to profit from knowingly and deliberately using another's patented invention due to a low likelihood that the patent holder can afford to bring suit or obtain substantial damages. For these reasons, the FTC Report recommended that legislation be enacted

[28] Report, Ch. 5 at 17-24.

requiring, as a predicate for liability for willful infringement, either actual, written notice of infringement from the patentee, or deliberate copying of the patentee's invention, knowing it to be patented. The FTC's recommendation would permit firms to read patents for their disclosure value and to survey the patent landscape to assess potential infringement issues, yet retain a viable willfulness doctrine that protects both wronged patentees and competition.[29]

D. Publish all Patent Applications 18 Months After Filing

With enactment of the American Inventors Protection Act in 1999, the U.S. began publishing most patent applications 18 months after their filing. However, the Act allows applicants to "opt-out" of publication if they did not seek corresponding foreign patents.[30] The Report recommends that the United States publish all patent applications 18 months after filing, rather than allowing an exception for those applications not filed abroad. Publication appears to have increased business certainty and promoted rational planning, as well as to have reduced the problem of "submarine patents" used to hold-up competitors for unanticipated royalties. Publishing all applications would strengthen these benefits.

III. Conclusion

Patents and competition can work together to drive innovation, consumer welfare, and our nation's prosperity. There is broad consensus on the significant role that patents can play in fostering innovation and encouraging the disclosure and commercial development of inventions. Competition also plays an important role in spurring innovation. More patents having greater breadth in more industries is not always the best way to maximize consumer welfare. A

[29] Report, Ch. 5 at 38-41.

[30] 35 U.S.C. § 122.

questionable patent can raise costs and prevent competition and innovation that otherwise would benefit consumers. Implementing the recommendations in the FTC's Report will increase the likelihood that issued patents are valid and the efficiency of challenges to invalid patents. Thank you for this opportunity to share the Commission's views. We look forward to working with you on this important issue.

Mr. BERMAN. Thank you very much.
Mr. Ravicher?

TESTIMONY OF DANIEL RAVICHER, EXECUTIVE DIRECTOR, PUBLIC PATENT FOUNDATION, NEW YORK, NY

Mr. RAVICHER. Chairman Berman and Members of the Subcommittee, despite what most people think, the patent system has extremely far-reaching effects on all Americans.

Although the public undoubtedly benefits from a properly functioning patent system, since patents are Government-created restraints on freedom and competition, the public can also be severely harmed by errors within the patent system.

As with any body of law that applies to and affects all Americans, patent policy should be made with consideration of all of the public's interests, not just the special interests that benefit from an enlarged patent system, namely patent-holders and patent attorneys.

Thus, I am extremely pleased to have been invited to represent the general public's interests in my testimony today and I applaud your commitment to ensuring that all affected interests are represented in patent policy discussions in the future.

There are several ways to strengthen the patent systems so that it benefits all Americans. One of the most important issues on which to concentrate is ensuring high patent quality.

Of the several sources available to help us determine the current level of quality for U.S. patents, each paints a very clear picture that patent quality today in America is not as high as we would all like it to be.

Poor patent quality has many harmful effects, not the least of which is that undeserved patents can impede otherwise permissible, socially desirable conduct and they do this without providing any social benefit whatsoever, because what they disclose is not, in fact, new or unobvious.

Poor patent quality also bears much of the blame for the intensive increase in patent litigation, the dramatically higher costs of patent litigation, and the rapid rise of patent speculators.

It also leads to thickets of patents that choke out first inventors with countless small improvement patents claimed by others. In what is akin to great inflation, by granting too many people too many patents, those inventors who legitimately did derive wonderful new technology get less credit than they deserve because of all the other patents that are issued in the related field.

This results in less incentive for the truest of innovators amongst us and instead encourages investments in making minor improvements to the inventions of others.

These are, unfortunately, only a few of the many harmful effects that poor patent quality is having on the American public today. The problem of poor patent quality is often cast simply in terms of the PTO's inability to find prior art, which would suggest a simple solution of giving the PTO more funding so examiners can spend more time searching.

But the problem with patent quality is much larger than that and it cannot be solved by just providing additional resources to the PTO.

We have found that there are three interrelated causes for today's poor patent quality. First, the current examination process for patent applications denies examiners the ability to reject patent applications of questionable validity because it is crippled by perverse incentives and perspectives.

Second, the threshold of inventiveness required to receive a patent has been severely whittled down by the court of appeals for the Federal circuit.

Third, patent boundaries are too indeterminate, leading actors to make decisions regarding behavior based on their own best guess at the scope of a patent's claims, which too often leads to an avoidance of socially beneficial activity.

Since there are several causes of poor patent quality, there are also several ways to improve and maintain a high level of patent quality. First, the improper incentives placed on the patent office and its examiner corps to grant patents should be eliminated so that the decision of whether to grant or reject a patent application can be made on a purely scientific and technological basis, uninfluenced by political or financial concerns.

Second, continuation applications which allow patent applicants to get an unlimited number of bites at an unlimited number of apples should be completely eliminated.

Third, a vigorous obviousness standard for patentability should be reinstated.

Fourth, a post-grant review procedure can be a valuable and efficient tool to perform quality assurance on issued patents, so long as the public is enabled to bring an opposition proceeding for a patent whenever they are threatened by not, just within the first 9 or 12 months of its issuance.

Fifth, the Federal circuit's super presumption of validity should be negated.

Lastly, to address the problem of indeterminate patent boundaries, a patent's validity should always be analyzed according to the broadest reasonable interpretation of its claims, a much less debatable interpretation and the one used by the patent office in reviewing applications.

And the currently dormant statutory prohibition against indefinite claim language should be awakened and strengthened.

In addition to patent quality, there are other aspects of the patent system that are in need of reform, as well.

First, inventions should be made available to the American public as quickly as possible, regardless of whether the patentee does so herself or not.

Second, patents should not be allowed to restrict the exercise of constitutional rights or the performance of technological research.

Third, the statutory limitations on what things may be patented, which have been eviscerated by the Federal circuit, should be revived.

And, lastly, the doctrine of willful infringement no longer services any socially beneficial purpose and, as such, should be abolished.

Thank you, Chairman Berman and Members of the Subcommittee, once again for inviting me to make the remarks about our current patent system and the need for patent reform.

I and others in the public interest community look forward to continuing to assist your efforts to ensure the patent system achieves its constitutional purpose of advancing technology.

[The prepared statement of Mr. Ravicher follows:]

PREPARED STATEMENT OF DANIEL B. RAVICHER

Statement of Daniel B. Ravicher, Public Patent Foundation — February 15, 2007
American Innovation at Risk: The Case for Patent Reform

Chairman Berman, Ranking Member Coble, and Members of the Subcommittee:

I am Executive Director of the Public Patent Foundation ("PUBPAT"), a not-for-profit legal services organization whose mission is to represent the public's interests in the patent system, most particularly the public's interests against the harms caused by undeserved patents and unsound patent policy.[1] PUBPAT provides the general public and specific persons or entities otherwise deprived of access to the system governing patents with representation, advocacy and education. PUBPAT is funded by grants from the Rockefeller Foundation, the Echoing Green Foundation, the Rudolph Steiner Foundation and the Open Society Institute and accomplishes its mission through three core activities: (i) protecting the public domain from being recaptured in new patents, primarily by asking the U.S. Patent & Trademark Office ("PTO") to reexamine patents of questionable validity, (ii) advocating for improvements to the patent system and (iii) educating the public about how patents impact everyday life.

ALL AFFECTED INTERESTS DESERVE TO BE REPRESENTED WHEN MAKING PATENT POLICY

Before commenting on patent reform substantively, I would first like to make a very important point about the process by which patent policy is formed. Despite what many people believe, the patent system has extremely far reaching effects on all Americans. Specifically, undeserved patents and unsound patent policy harm the public by making products and services more expensive, if not completely unavailable, by preventing scientists from advancing technology, by unfairly prejudicing small businesses, and by restraining civil liberties and individual freedoms. Although the public can indeed benefit from a properly functioning patent system, since patents are nothing short of government sanctioned restraints on freedom and competition, the public can also be severely harmed by errors within the patent system. For that reason, patent policy should be crafted with full knowledge of all of the effects, both positive and negative, the patent system has on all people.

Unfortunately, however, it is too often the case that not all of the interests affected by the patent

1 Daniel B. Ravicher is Executive Director of PUBPAT and a registered patent attorney. Prior to founding PUBPAT, Mr. Ravicher was associated with the patent law practice groups of Skadden, Arps, Slate, Meagher & Flom LLP, Brobeck, Phleger & Harrison, LLP, and Patterson, Belknap, Webb & Tyler, LLP, all in New York, and served the Honorable Randall R. Rader, Circuit Judge for the U.S. Court of Appeals for the Federal Circuit in Washington, D.C. Mr. Ravicher writes and speaks frequently on patent law and is Adjunct Professor of Patent Law at Benjamin N. Cardozo School of Law. Mr. Ravicher received his law degree from the University of Virginia School of Law, where he was the Franklin O'Blechman Scholar of his class, a Mortimer Caplin Public Service Award recipient and an Editor of the Virginia Journal of Law and Technology, and his bachelors degree in materials science *magna cum laude* with University Honors from the University of South Florida.

system are adequately represented in patent policy discussions. Specifically, the interests of the non-patent holding public are almost always absent from any meaningful participation in decision making about the patent system, despite the fact that they can bear the brunt of its burdens. This lack of representation of the public's interests is due in part to the fact that the patent community culture tends to dismiss and exclude the opinions of those it sees as unsophisticated outsiders, but it is mostly because the general public does not yet realize how much the patent system actually affects them. Regardless, the result is that the ears of lawmakers are monopolized by the concentrated group of special interests that benefit from an enlarged patent system, namely patent holders and patent attorneys, while the general public interest in favor of a more balanced patent system is rarely heard.

As with any body of law that applies to and affects all Americans, patent policy should be made with consideration of all of the public's interests, not just the specific interests of patent holders, patent practitioners, and large commercial actors.[2] Thus, I am extremely pleased to have been invited to represent those otherwise underrepresented interests in my testimony today and I applaud your commitment to ensuring that all affected interests are represented in patent policy discussions in the future.

PATENT QUALITY IS A CRITICAL ISSUE FOR PATENT REFORM

There are several ways to strengthen the patent system so that it benefits all Americans. One of the most important issues on which to concentrate is ensuring high patent quality, because the issuance of undeserved patents exacts a significant price on the American people without any social benefit. Thus, while other issues are also important, true patent reform cannot be accomplished without paying specific attention to the issue of patent quality.

POOR PATENT QUALITY TODAY IS CAUSING SUBSTANTIAL PUBLIC HARM

There are several sources to help determine the current level of quality for U.S. patents, and all of them paint a very clear picture that patent quality today in America is extremely poor. One source, an ongoing project of the University of Houston Law School, which is known for having one of the most reputable patent departments in the country, tracks the results of patent litigation and empirically categorizes those results according to the specific issues involved with each case.[3] Looking at their data, the rate at which patent validity issues were resolved against the patent in litigation was 35% in 2005. This means that roughly one-third of issued U.S. patents

2 Jonathan Krim, *Evaluating a Patent System Gone Awry*, Washington Post, May 5, 2005, E01 (stating that the current patent reform legislative process has been "effectively hijacked by large companies and powerful patent-lawyer groups").

3 Patstats, available at www.patstats.org.

that had their validity challenged in court were determined to have been undeserved.

When looking at this data, there are some caveats to keep in mind. First, it could be argued that the rate at which patents asserted in litigation are determined to be invalid is not applicable to the general pool of all issued patents, since roughly only 2% of issued patents end up getting litigated. While this may be a valid point, it does not mean that the actual validity rate of issued patents is higher or lower than that of litigated patents, because it is generally only the patent owner who can put a patent in litigation. Therefore, many issued patents do not get their validity challenged in litigation because the patent owner chooses not to assert the patent.

Second, even if these statistics are limited to just litigated patents, they are still extremely important because litigated patents tend to have a much greater significance to the public, on average, than non litigated patents.[4] To draw an analogy, if 35% of the people on death row who challenged their convictions were actually proven innocent, that wouldn't necessarily mean that 35% of all people on death row, much less 35% of all convicted criminals, were actually innocent (that ratio could be higher or lower), but the severity of each mistake regarding someone on death row is extreme nonetheless. Similarly, the technology involved with litigated patents is almost without exception extremely valuable, so any mistakes regarding the validity of those patents can cause severe harm in and of itself, regardless of the validity rate of issued patents in general.

Another source of information about patent quality is the PTO's own statistics relating to reexamination, which show that about 67% of patents for which reexamination requests are made are eventually either canceled or changed by the PTO.[5] The PTO's reexamination statistics also show that more than 90% of all requests for reexamination are granted, an action that requires a finding that a "substantial new question of patentability" be raised.[6] These statistics show that a great number of patents issued by the PTO nonetheless have "questionable" validity.

One other way to get a picture of U.S. patent quality is to compare our system's patent application outcomes to those of other well respected patent offices. Firstly, the USPTO ultimately grants patents from 85% of all original applications, while that rate is only 64% in Japan.[7] However, a better comparative picture is presented by a recent study of roughly 70,000 issued U.S. patents and their counterpart foreign applications. The study found that the counterparts to patent

4 John R. Allison, Mark A. Lemley, Kimberly A. Moore & R. Derek Trunkey, *Valuable Patents*, 92 Georgetown Law Journal 435 (2004).

5 Paul F. Morgan & Bruce Stoner, *Reexamination v. Litigation – Making Intelligent Decisions in Challenging Patent Validity*, 86 JPTOS 6, 441-463 (2004).

6 35 U.S.C. § 312 (2007).

7 Cecil D. Quillen, Ogden D. Webster, and Richard Eichman, *Continuing Patent Applications and Performance at the U. S. Patent and Trademark Office-Extended*, 12 Fed. Cir. B.J. 35 (2002).

applications issued in the U.S. were only issued by the European Patent Office 72.5% of the time and by the Japan Patent Office only 44.5% of the time.[8] This evidence shows that the U.S. Patent Office is indeed granting a very high proportion of patents.

Patents that are undeserved can cause substantial harm to the American public, because an issued patent – regardless of its true legitimacy – can be used to threaten and impede otherwise permissible, socially desirable, conduct. The threat of having to incur the costs and potential liability of a patent lawsuit is one that few individuals or small businesses can withstand, even if the patent is of doubtful validity. This chilling effect, when caused by a patent that would be ruled invalid if challenged, provides no social benefit to the American people, because the patent contains nothing new; its invalidity means that whatever it claims or describes was either already known or was obvious in light of what was already known. This effect can be devastating to the American people.

For example, there have been several patents that were used to preclude competition in markets worth billions of dollars that were later proven to be undeserved.[9] Poor patent quality is also partially to blame for the intensive increase in patent litigation, the dramatically higher cost of patent litigation, and the rapid rise of patent speculators – mostly contingency fee patent litigators – who are more than willing to gamble the few million dollars it costs to assert questionable patents against large and small commercial actors for the chance of reaping windfall judgments.

Further, the over-patenting that results from low patent quality leads to thickets of patents that choke first inventors with countless small improvement patents claimed by others. In what is akin to grade-inflation, by granting too many people too many patents, those inventors who legitimately did derive wonderful new technology get less credit than they deserve because of all the other patents that are issued in the related field. This results in less incentive for the truest of innovators amongst us and instead encourages investments in making minor improvements to the inventions of others. These are, unfortunately, but a few of the many harmful effects that poor patent quality is having on the American public today.

8 Paul H. Jensen, Alfons Palangkaraya & Elizabeth Webster, *Disharmony in International Patent Office Decisions*, 16 Fed. Cir. B.J. 679 (2006).

9 *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368 (Fed. Cir. 2001) (patent preventing competition to $1.6B per year cancer treatment, Taxol, later proven invalid); *Eli Lilly & Co. v. Barr Labs.*, 251 F.3d 955 (Fed. Cir. 2001) (patent barring alternatives to $2.9B per year antidepressant medication, Prozac, later proven invalid).

TODAY'S POOR PATENT QUALITY IS ONLY PARTIALLY ATTRIBUTABLE TO THE PATENT ISSUANCE PROCESS

The problem of poor patent quality is often cast simply in terms of the PTO's inability to find prior art, which would suggest the simple solution of giving the PTO more funding so examiners can spend more time searching. But the problem of patent quality is much larger than that and it cannot be solved by just providing additional resources to the PTO. A more sophisticated view shows that there are three interrelated causes for today's poor patent quality.

The first cause of poor patent quality is that the *ex parte* examination process for patent applications denies examiners the ability to reject patent applications of questionable validity because it is crippled by perverse incentives and perspectives.[10] Resource limits on an examiner's ability to search for prior art are indeed part of the problem, but there are also several other contributing factors. First, there are financial and political incentives placed on examiners to grant patents, which is a vestige of the PTO's legacy of its "help customers get patents" philosophy. Second, the availability of continuation applications allows patent applicants to gain an unfair advantage in the patent application process.[11] Third, there are inadequate options to correct patent issuance errors, both pre-grant or post-grant. Lastly, third parties are not sufficiently incentivized to disclose prior art to the PTO or the public either before or after issuance.

The second cause of poor patent quality is the threshold of inventiveness required to receive a patent. The overarching problem here is that the Court of Appeals for the Federal Circuit ("CAFC"; "Federal Circuit") views patents as entitlements, and places high burdens on the examiner corps or third party challengers to patents to prove otherwise. The Federal Circuit has severely whittled down the obviousness bar to patentability by implementing a "teaching-suggestion-motivation" requirement, which one Supreme Court Justice rightly described as "gobbledygook." The Federal Circuit has also exalted the role of "secondary considerations" in the analysis of patentability, which work against a finding of obviousness, and implemented a super-presumption of validity that is much higher than what is reasonably warranted.

The third cause of poor patent quality is the fuzziness of patent boundaries. Unlike tangible

10 Shubha Ghosh & Jay Kesan, *What Do Patents Purchase? In Search of Optimal Ignorance in the Patent Office*, 40 Hous. L.R. 1219, 1225–26 (2004); Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L.R. 1495, 1499–1500 (2001); Cecil D. Quillen, Jr. & Ogden H. Webster, *Continuing Patent Applications and the Performance of the U.S. Patent and Trademark Office*, 11 Fed. Cir. B.J. 1, 13 (2002); John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. Ill. L.R. 305, 314–15.

11 "Continuation applications" includes continuations, continuations-in-part, divisionals and Requests for Continued Examination (RCEs).

forms of property, such as real estate, patent boundaries are almost always poorly defined. Many patents are written in vague or obscure language, claim construction procedures are uncertain and vary from judge to judge, existing claims are hidden in the pipeline at the Patent Office, and the use of abstract terms allows patents to cover far more technology than what was actually invented. One sign of how difficult it is for people to determine exactly what a patent does and does not cover is the fact that more than a third of all district court judges, after performing a thorough analysis of a patent's claims, have their construction of those claims reversed by the CAFC.[12] If Federal Judges can't agree on what claim terms mean, how can we expect the average American business person or individual inventor to do so. This inability to get a clear understanding of what a patent does or does not cover inevitably leads actors to make decisions regarding behavior based on their own best guess at interpretation, which too often leads to an avoidance of activity that would be beneficial for that person to undertake.

In information technology related industries in particular, indeterminate boundaries, questionable validity, and the sheer number of patents makes clearance searches prohibitively costly and uncertain. A small e-commerce business needs to review over 11,000 patents, many of which include vague terms of uncertain breadth, such as the notorious E-Data patent that referred to "information manufacturing machines." Although that patent described an in-store kiosk for producing audio tapes and similar digital recordings on demand, its owner asserted the patent against hundreds of companies doing general e-commerce, initiating over 40 lawsuits. PUBPAT board member Jim Bessen has been conducting soon-to-be-published empirical study which shows that this problem has resulted in a dramatic decline of the cost-effectiveness of patents to the point where they impose a tax on innovation in most sectors.

There are also systemic and institutional issues that contribute to the patent quality problem. Professors Jaffe and Lerner correctly identify two major causes of the current patent quality problem in their book: the creation of the Federal Circuit and PTO funding being derived from fees.[13] The later causes capture by institutional self-interest, which invariably leads to policies driven by volume rather than quality.

Unfortunately, as I have attempted to show through this discussion, the patent quality problem has not been caused simply by inadequate examiner searching. Rather, it has been caused by a multitude of factors existing at various levels of our patent system.

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12 Kimberly A. Moore, *Markman Eight Years Later: Is Claim Construction More Predicatable?*, 9 Lewis & Clark L. Rev. 231 (2005).

13 Adam Jaffe & Josh Lerner, *Innovation and Its Discontents* (2004).

THERE ARE SEVERAL WAYS TO ENSURE HIGH PATENT QUALITY

Once we understand the causes of poor patent quality, it becomes readily apparent that there are several ways to improve and maintain a high level of patent quality. First, the improper incentives placed on the Patent Office to grant patents should be eliminated, so that the decision of whether to grant or reject a patent application can be made on a purely scientific and technological basis uninfluenced by political or financial concerns. Second, continuation applications, which allow patent applicants to get an unlimited number of bites at an unlimited number of apples, should be completely eliminated, because they provide no legitimate basis for advancing technology.[14] Third, a vigorous standard for patentability should be reinstated. Fourth, a rigorous post-grant opposition procedure can be a valuable and efficient tool to perform quality assurance on issued patents so long as the public is enabled to bring an opposition proceeding for a patent whenever they are threatened by it. Fifth, the Federal Circuit's super-presumption of validity should be negated. Lastly, in order to address the problem of fuzzy patent boundaries, a patent's validity should always be analyzed according to the broadest reasonable interpretation of its claims, because that is the construction of the patent that the public will generally abide by until the patent is reviewed by a court, and the currently dormant statutory prohibition against indefinite claim language should be awakened and strengthened.

Remove Improper Incentives on PTO to Grant Patents

Funding of the PTO is an ever present issue that affects all aspects of patent quality. As such, perhaps the presentation of a contrary viewpoint about whether the PTO is adequately funded is worthwhile, especially since the impression is given that without more funding of the PTO, patent quality will continue to degrade.

The failings of the PTO can be largely attributed to the improper incentives placed on it and its employees to issue patents.[15] Specifically, financial incentives encourage the issuance of patents, including those of questionable validity.[16] At the agency level, the PTO derives its income from fees, largely application and maintenance fees. These fees increase in direct proportion to the

14 "Continuation applications" includes continuations, continuations-in-part, divisionals and Requests for Continued Examination (RCEs). The only possible exception to this proposal is divisions filed pursuant to a Sec. 121 requirement made by the PTO for restriction.

15 Jay P. Kesan & Andres A. Gallo, *Why "Bad" Patents Survive in the Market and How Should We Change?—The Private and Social Costs Of Patents*, 55 Emory L.J. 61, 76 (2006) ("The Patent Office has an incentive to grant patents without being unduly concerned about the quality of its examination process.").

16 Zachary Roth, *The Monopoly Factory*, Washington Monthly, June 2005 ("The patent office, operating under [] institutional incentives to push more patents out the door, has set up a system that encourages individual examiners to green-light more of the applications that cross their desks").

number of patent applications received and the number of patents issued. The more patents issued by the PTO, the more fees it receives, both directly through maintenance fees, and indirectly through the encouragement of more patent applications, each with an application fee. As such, the PTO as an agency is financially incentivized to issue, rather than reject, patents. This has lead to a deeply ingrained culture where patent applicants are viewed as "customers" of the PTO, which leads the PTO to be even more heavily biased towards issuing patents in an effort to please those "customers."

In fact, the PTO today ultimately issues patents from 85% of all applications, as is much more favorable to patent applicants than either the European Patent Office or the Japan Patent Office.[17] Although many of the patents issued by the USPTO are deserving, as discussed above, many of them are not. The PTO's high rate of issuing patents is directly responsible for its receiving unmanageable numbers of applications. However, that burden is not properly dealt with by merely increasing the PTO's funding so that it can issue more patents and thus encourage the filing of even more applications. Rather, the burden on the PTO is properly dealt with by removing the improper incentives on it to issue patents. It is perverse that, under the current system, if the PTO were to reject undeserving patent applications such that the number of issued patents decreased, it would suffer financially.

Financial incentives placed on the PTO to issue patents do not stop at the agency level. Rather, they trickle down all the way to individual employees. Through a quota system, patent examiners are given more credit, and evaluated more favorably, if they issue, rather than reject patents. An examiner who desires to reject an application faces a limitless amount of work, as each time she makes a final rejection of the application the applicant can force her to revoke the rejection by simply filing a continuation application. Much of this additional work receives no extra credit under the quota system. However, if the patent examiner instead chooses to issue an undeserving patent application rather than standing by her rejection, she will receive the same amount of credit for doing a much simpler thing. She will also save herself hours of work that she can use to earn credit by working on other applications.

These incentives are perverse. The PTO and its employees should be rewarded, not penalized, for improving patent quality. There should be absolutely no bias to either issue or reject a patent application. The PTO and the Examiner Corps should be free to make their best scientific and technological judgment about pending patent applications without any financial pressures or

17 Cecil D. Quillen, Ogden D. Webster, and Richard Eichman, *Continuing Patent Applications and Performance at the U. S. Patent and Trademark Office-Extended*, 12 Fed. Cir. B. J. 35 (2002); Paul H. Jensen, Alfons Palangkaraya & Elizabeth Webster, *Disharmony in International Patent Office Decisions*, 16 Fed. Cir. B.J. 679 (2006) (finding that only 72.5% of EPO applications and 44.5% of JPO applications corresponding to a selection of roughly 70,000 issued U.S. patents were granted by the EPO and JPO, respectively).

incentives. Some ways to accomplish this goal may include (i) ridding the patent application review process of any influence by financial or political factors, (ii) rewarding examiners by the number of hours that they dedicate to an application, not the number of applications that they bring to a close, and (iii) creating a mechanism for independent oversight of the PTO's administrative procedures to ensure that they do not place bias on examiners to either issue or reject applications.

Eliminate or Curtail Continuation Applications

Continuation applications, which includes continuations, continuations-in-part, divisionals and Requests for Continued Examination (RCEs), provide applicants who have had their patent applications finally rejected the ability to force the PTO to revoke the finality of the rejection simply by paying a fee for a new filing. Thus, it is impossible for an examiner to ever actually finally reject a patent application so long as the applicant has sufficient financial resources to keep paying for continuation applications.[18] The justifications given for continuation applications – that applicants need to be free to add new claims to an application years after it is filed – lack any technological merit, as any claims desired by a patent applicant can and should be included in the original application or an amendment to it.

Applicants abuse the continuation application process in many ways. Some monitor commercial actors who attempt to design around a previously issued patent and file claims in a continuation application that are directed specifically at the design-around efforts. These applicants lie in wait until the commercial actor launches or otherwise commits to their design-around product and they then quickly get the PTO to issue the continuation patent, which has a greater likelihood of ensnaring the commercial actor because its claims were written with the design-around product specifically in mind. Such perverse manipulation of the patent system should not be allowed to occur.

A recent study showed that about one third of patent applications are continuations.[19] This not only provides opportunities for the gamesmanship discussed above, but it also results in a significant amount of rework by patent examiners, which adds inefficiency into the patent application process. As such, continuation applications should be eliminated in their entirety.[20] If an applicant believes that they deserve a patent on an application that has been finally rejected by an examiner, they already have the right to pursue appeal to the Board of Patent Appeals within the PTO. And if they don't like the result of that appeal, then they also have the right to

18 Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B. U. L. Rev. 63 (2004).
19 Lemley & Moore, 85 B. U. L. Rev. at 69.
20 The only possible exception to this proposal is divisions filed pursuant to a Sec. 121 requirement made by the PTO for restriction.

appeal to the Federal courts. Therefore, under a system without continuation applications, applicants would still be afforded plenty of chances to make their case for a patent.

Reinstate a Vigorous Standard for Patentability

One of the largest factors negatively impacting patent quality today is the Federal Circuit's erosion of obviousness as a bar to patentability. The CAFC has significantly weakened obviousness as a second requirement of patentability above and beyond novelty by requiring a "teaching, suggestion, or motivation to combine" two or more references to support an obviousness finding.[21] By doing so, the CAFC has dismissed the knowledge of one having ordinary skill in the art, despite the fact that the Patent Act requires a consideration of such knowledge as part of the obviousness test.[22]

Not only has the Federal Circuit created this additional requirement to prove a patent is obvious out of whole judicial cloth, it has also usurped the statutory language regarding obviousness with so-called "secondary considerations," which the CAFC believes should be the primary focus in an analysis of obviousness. By, for example, focusing on unexpected economic returns rather than on the nature of the technological advance, consideration of secondary factors protects the validity of patents that would otherwise be found to be obvious.

This dramatic shift in law by the Federal Circuit is not only in conflict with the Patent Act, it also implements a perverse policy choice that favors the issuance of patents. A lower bar of obviousness also causes races to patent insubstantial improvements, which diverts resources away from more promising lines of inquiry.[23]

As such, even though a case regarding this issue is now pending at the Supreme Court, I urge you to amend Section 103 to reinvigorate the obviousness standard.[24] More specifically, introducing a provision negating any requirement for "secondary considerations" or a "teaching, suggestion, or motivation to combine" and replacing it with the proper "substantial technological advance" standard – advocated by the U.S. Government in the currently pending *KSR v. Teleflex* Supreme Court case – would go far to make obviousness a true bar to patentability once again.

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21 35 U.S.C. § 103 (2007); Teleflex Inc. v. KSR International Inc., unpublished (2005) (available at http://fedcir.gov/opinions/04-1152.pdf).

22 35 U.S.C. § 103 (2007); *Brief of Twenty-Four Intellectual Property Law Professors as Amici Curiae in Support of Petitioner*, KSR International CO. v. Teleflex INC., et al., U.S. No. 04-1350.

23 Arti K. Rai, *Addressing the Patent Gold Rush: The Role of Deference to PTO Patent Denials*, 2 Wash. U. J.L. & Pol'y 199, 221–26 (2000).

24 *KSR International Co. v. Teleflex, Inc., et al.*, Supreme Court No. 04-1350 (*cert granted* June 26, 2006; *argued* November 28, 2006).

Implement a Strong Post-Grant Opposition Procedure

The idea of a strong post-grant opposition procedure is a good one. In most respects, such a procedure would serve the public interests by helping to ensure that undeserved patents are proven invalid as quickly and as efficiently as possible after their issuance. Of course, it should be the goal of the patent system to improve the patent issuance process so that no undeserving patent is ever issued. However, until that goal is achieved, implementing effective mechanisms for nullifying undeserved patents will provide significant benefit, so long as they are not seen as being satisfactory solutions to the problem of patent quality, because even with an effective post-grant opposition procedure, the amount of public harm caused by undeserved patents will still be significant.

In order to be a valuable and efficient tool to perform quality assurance on issued patents, the public must be enabled to bring post-grant oppositions at any time they are threatened by a patent. Although the mere existence of a patent poses a grave threat to the public, meaning that the public should be free to bring a post-grant opposition against any patent throughout its life, at minimum, whenever a patent is affirmatively asserted by its owner it should be eligible for post-grant review.

Some characteristics of a post-grant opposition proceeding that have been proposed may cause it to have a detrimental effect on the public's interests. First, any time limit on when oppositions could be filed, especially one as short as nine months or a year, would vitiate a substantial amount of the post-grant opposition procedure's ability to route out undeserved patents. This is because many patents do not begin to cause significant public harm until years after their issuance. For instance, pharmaceutical patents often issue years before any product covered by the patent is brought to market due to the need to perform clinical trials to prove that the product is safe and effective. In information technology industries, many technologies covered by patents do not become marketable for several years after their issuance because they require some complimentary hardware or service that is not yet available or affordable. Further, many patents are sold to new owners during their term who are much more aggressive in asserting the patent against the public than the previous owner.

Thus, it is not always possible to determine within nine months or a year of a patent's issuance whether or not it is worth opposing. Forcing the public to make such decisions too soon by implementing a narrow window during which opposition proceedings could be initiated would lead to substantial waste resulting from inefficient decisions. It would also cripple the post-grant opposition procedure's ability to protect the public from the harm caused by undeserved patents. Further, if there was only a limited window during which opposition proceedings could be

initiated, some patentees may choose to game the system by not asserting their patents until after the window for opposition had closed.

Some patent holder representatives claim that maintaining post-grant opposition eligibility for the entire term of an issued patent would be undesirable. This ignores the fact that patents can be reexamined at any time during their term and that the filing of an opposition proceeding would not impact the patent holder's ability to assert the patent or receive compensation for infringement. However, if compromise is sought on this point, perhaps patent owners can be given the opportunity to prevent the filing of any opposition against their patent during any period of time that they attest not to assert it. That way, if a patent owner wants so-called "quiet title", they can provide it themselves. However, if a patentee wishes to assert her patent against members of the public, it is indefensible that the patent not also be eligible for an efficient and quick check of its validity through post-grant review.

Another possible compromise is to provide a second window of eligibility for filing an opposition triggered by any assertion of the patent by the patent owner. A second window of eligibility upon assertion is fair because the public should be free to avail itself of a proceeding to efficiently check the validity of a patent that is being aggressively brandished by its owner. It is, of course, requisite that eligibility to file an opposition be open to the entire public, just as with reexamination proceedings, because an undeserved patent harms the entire public, regardless of whether it is only being directly asserted against one specific party. This is especially true if the parties against whom a patent is being directly asserted either cannot afford to represent themselves in an opposition proceeding or do not dare do so for fear of retribution by the patentee.

Negate the Federal Circuit's Super-Presumption of Validity

Another area for attention is the presumption of validity accorded to issued patents. The Federal Circuit has placed a very high burden of proof on defendants to overcome the statutory presumption of patent validity, requiring that parties challenging the validity of a patent must do so with "clear and convincing" evidence.[25] This is a much higher standard than reasonably justified by the state of patent quality today, and it also ignores the fact that the statue is nothing more than boilerplate administrative law language whereby administrative actions are presumed valid and the burden of production is on the party challenging the action.[26]

Instead of the Federal Circuit's super-presumption of validity, a more sound standard would only

25 *35 U.S.C. § 282 (2007); Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360 (Fed. Cir. 1984).
26 *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 415 (1971).

require a party challenging the validity of a patent to come forth with a "preponderance of evidence" proving the patent invalid. Not only is a preponderance of evidence standard for patent invalidity more normatively and statutorily correct, it also comports with the standard used by the PTO in reviewing patent applications and patents under reexamination.

It is especially nonsensical to apply a higher burden for proving a patent invalid in litigation in light of prior art that was not reviewed by the PTO during the application process. There is absolutely no justification for applying a super-presumption of validity in the face of new art against which a patent has never been reviewed. Therefore, I urge you to amend the Patent Act to expressly state that the presumption of validity accorded to issued patents shall only require that a party challenging a patent must come forth with a "preponderance of evidence" showing that it is invalid.

Clarify Patent Boundaries By Checking Patent Validity Against the Broadest Reasonable Scope of the Claims and By Awakening and Strengthening the Rule Against Indefiniteness

The process of discerning the precise scope of a patent's claims is known as claim construction. This process exists because patent claims almost always contain words of arguable or ambiguous meaning. Roughly ten years ago, the courts chose to define claim construction as a matter of law to be resolved by a trial judge and reviewed *de novo* on appeal.[27] Unfortunately, the *Markman* process has resulted in less predictability and certainty regarding a patent's scope because, until a *Markman* hearing takes place, no one knows what a patent does or does not cover. This is the fuzziness of patent boundaries issue I discussed above as one of the prime causes of poor patent quality.

Many patentees exploit this uncertainty by alleging their claims are extremely broad only to later argue their patent claims are narrow when faced with a strong invalidity challenge. Since it is possible for a court to interpret a patent's claims broadly, the public is forced to abstain from practicing anything that could conceivably be considered covered by an unconstrued patent's claims. If a court later interprets the claims more narrowly, then the public needlessly avoided practicing technology that is not within the court's construction but that was within the broadest reasonable construction of the claims.

To avoid this wasteful chilling of permissible activity, the PTO uses the broadest reasonable interpretation possible when examining the validity of patent claims. This is the same standard courts should use when construing a patent for validity because the extent to which the public is chilled by a patent is, until its claims are construed by a court, generally the broadest reasonable

27 *Markman v. Westview Instruments, Inc.*, 53 F.3d 967 (Fed. Cir. 1995), aff'd, 517 U.S. 370 (1996).

construction of the claims possible. Thus, when a patent's validity is challenged, that is the same breadth against which it should be made to withstand.

In addition, the legal standard for indefiniteness applied by the courts and to Patent Office review permits unreasonably vague claim language to be used. The current standard for impermissible indefiniteness under Section 112 of the Patent Act requires the claim to be "insolubly ambiguous" before it can be found invalid for failing to particularly describe the invention. This extremely lenient – almost impossible to violate – standard prevents the Patent Office and the public from readily determining a patent's scope. As such, to address the problem caused by fuzzy patent boundaries, the rule barring indefinite claim language should be strengthened – perhaps by invalidating any claim with terms found to be ambiguous or reasonably capable of more than one interpretation – and more routinely enforced.

Further, the Patent Office rarely places on record its broadest reasonable construction of the patent claim or requires patent applicants to clarify the terms of their patent claims. Either of these steps would give the public a better – more reliable and more clear – understanding of the scope of the patent. Because the Patent Office is already required to consider and apply the "broadest reasonable construction" standard to evaluating patent validity, it should impose no additional burden on it to require examiners to document that interpretation in any Office Action, including Notices of Allowance, that they issue. To the extent an applicant wishes to further illuminate the meaning of her claim terms, she should be free to do so.

OTHER ISSUES THAT SHOULD BE THE FOCUS OF PATENT REFORM

In addition to patent quality, there are other aspects of the patent system that are in need of reform as well. First, inventions should be made available to the public as quickly as possible, regardless of whether the patentee does so herself or not. Second, although they serve a critical public policy goal, patents should not be allowed to restrict the exercise of Constitutional rights or the performance of technological research. Third, the statutory limitations on what things may be patented, which have been eviscerated by the Federal Circuit, should be revived. Lastly, the doctrine of willful infringement no longer serves any beneficial purpose and, as such, should be abolished.

Make Inventions Available to the Public as Quickly as Possible

The patent system's ultimate purpose is to advance technology, not line the pockets of patent holders. Although these ends are typically aligned, there does come a point at which over rewarding patent holders can in fact retard technological development. This is why the patent right is limited, such as by a finite term. Similarly, if a patent holder is not itself making its

invention available to the public, courts should take great pause before issuing an injunction against another party that desires to do so.

Opponents of the proposition that inventions should be brought to the public as quickly as possible argue that there is a more important need to create greater incentives for invention. But encouraging invention is not an end to be achieved at the sacrifice of more important goal of the patent system, which is bringing to the public technological advances as quickly as possible. Further, as Thomas Jefferson correctly stated, patents are "not [a] natural right, but [are] for the benefit of society."[28] Our patent system is an economic tool to coordinate technological development that is designed to ensure inventive effort is *adequately* rewarded and quickly adopted to benefit the American people. Thus, when a patentee does not deliver her invention to the public, she should not be allowed to stand in the way of others willing to do so if they can compensate her fairly for the advance she identified. Allowing her to deny the American people a significant advance incorrectly places her private right above the needs of the public.

For example, a patent holder with a valid patent on the cure for AIDS who does not make that technology available to the public should not be allowed to prevent others from doing so. While it is true that there are a small number of cases where a permanent injunction was not issued because of public health concerns, such as would likely be involved with the hypothetical, we should not wait and rely on courts to do the right thing in the most dire cases. The public concern triggered by not having such issues resolved before they arise was highlighted during the Anthrax attacks with respect to the patent on Cipro, where it was uncertain whether the patent owner would have been able to successfully prevent the American people from defending themselves with the best technology available.[29] More recently, concerns over the production of the cure for Avian Flu have also been raised do to the patent holder's monopoly on that product.

Further, the principle of not withholding technological advances from the public applies to all technologies, even if the immediate impact of denying the public access to the advance is not as significant as with public health technologies. For example, but a few years ago, this House was concerned with a patent that could be used to enjoin an electronic communications device of importance to Representatives.[30] That was indeed a legitimate concern and it highlights the necessity that technological advances not be kept from the American people because of patents. Anytime a technological advance is kept from the American people, the public suffers unnecessary and unjustified harm.

28 Thomas Jefferson, Letter to Isaac McPherson, August 13, 1813 ("... the exclusive right to invention as given not of natural right, but for the benefit of society.")

29 Shankar Vedantam & Terence Chea, *Drug Firm Plays Defense in Anthrax Scare*, Washington Post, October 20, 2001, A04.

30 Jonathan Krim, *House Makes a Plea To Keep BlackBerrys*, Washington Post, January 17, 2003, E01.

So long as patentees are guaranteed adequate compensation by the courts, the only complaint they can be heard to made regarding a rule that they not be allowed to deny the American people access to technological advances is that they would not be able to use injunctions to get more than they deserve from the marketplace. But, allowing patentees to get more financial reward than they deserve would result in a corresponding economic harm to the American public and, as such, is not sound public policy.

Protect Civil Liberties and Research

Patent law should not trump Constitutional rights nor be used to impede its own goal of advancing technology. Unlike copyright and trademark law, under current patent law there is no exemption from infringement liability for exercising Constitutional rights. Although perhaps previously not as relevant to the exercise of individual freedoms as those other forms of intellectual property, patent law today impacts many, if not most, of our most sacred rights, including speech, privacy, religious expression, assembly, and voting.[31] This is partly because patent eligibility has been expanded by the Federal Circuit to include anything and partly because everyday life is becoming increasingly dependent upon technology. As such, there should be a statutory exemption from patent infringement for the exercise of Constitutional rights.

Further, since the mission of the patent system is to advance technology, it seems perverse to subject scientific research to the risk of infringement liability. Historically, scientific research was, in fact, excepted from patent infringement liability. Unfortunately, however, the Federal Circuit has interpreted the experimental use exception so narrowly – effectively excluding any and all research of a technological or scientific nature – that legislative action is now required to restore the proper balance between the private rights of patent holders and the public interest in advancing technology. As such, there should also be an exemption from patent infringement for scientific research.

Revive Limits on Patentable Subject Matter

Since its creation, the Federal Circuit has continually expanded the category of subject matter eligible for patenting. The CAFC's decisions interpreting Section 101 of the Patent Act, which sets forth the scope of patentable inventions, have gone well past what the statute allows. As the Supreme Court has recognized, Section 101 implements a substantive standard to ensure that skilled patent draftsmanship is not capable of overcoming one of the core principles of patent law that "[a] principle, in the abstract, is a fundamental truth; an original cause; a motive; these

31 John R. Thomas, *Liberty and Property in the Patent Law*, 39 Hous. L. Rev. 569 (2002).

cannot be patented, as no one can claim in either of them an exclusive right."[32]

That fundamental limitation on the scope of what can be patented is needed to protect the public domain of science and nature from being appropriated through private property rights. To assure that the limitation is respected, the Supreme Court issued decisions in the early 1980s establishing the rule that patentable subject matter requires significant physical application of any newly discovered scientific phenomena or mathematical principle. Because it was not enough to simply come up with a trivial or ephemeral application, software, either by itself or reduced to a storage medium, and business methods were generally understood to be unpatentable.

Through a series of decisions, the CAFC has abandoned the substantive based standard for determining patentable subject matter and replaced it with a more expansive formalistic approach that looks only to see whether a patent claim contains some structure or has some minimal practical utility. The Federal Circuit's form-over-substance approach has come to include virtually anything within patentable subject matter. This has resulted in an encroachment of patents into fields where they should have never been allowed.

Software, for example, which is nothing more than a set of instructions – an algorithm – to be performed by a computer in order to solve some mathematical problem, is subject matter that should not be patentable. Economists have studied the impact of extending patents to software and found that such has not increased investments into research and development, while it has, of course, contributed to the significant increase in patent litigation.[33]

Business methods are another field where expansive CAFC policy has introduced patents to the detriment of the commercial actors within those industries. As such, it would be wise policy to revive the limits on patentable subject matter intended by Section 101 through an amendment to that statute specifically requiring a substantive standard for patent eligibility and expressly precluding both software and business methods from patentable subject matter.

Eliminate Willful Infringement

The willfulness infringement doctrine, which allows for the trebling of damages upon a finding

32 *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175 (1853); *Gottschalk v. Benson*, 409 U.S. 63, 67 ("[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work").

33 Bessen, James E. and Hunt, Robert M., *An Empirical Look at Software Patents*, (March 2004). FRB of Philadelphia Working Paper No. 03-17. Available at SSRN: http://ssrn.com/abstract=461701 or DOI: 10.2139/ssrn.461701.

that an infringer failed to comply with a duty of due care to avoid infringement, has no beneficial impact on conduct. This is largely due to the fuzziness of patent boundaries, which makes it virtually impossible to know what a patent does and does not cover, and the ready availability of patent attorneys to provide opinion letters to be used as a defense to the charge of willfulness. Making the doctrine even less supportable is the fact that the duty of care requirement has no basis in the patent damages statute or the legislative history. There is also a significant Constitutional issue regarding whether the due care requirement is consistent with Supreme Court precedent that states punitive damages can only be awarded in situations where the conduct is reprehensible.[34]

The only benefit provided by the willfulness infringement rule today is to patent holder's counsel in litigation, who can use it to intrude into the defendant's attorney-client relationship, because disclosure of the attorney opinion letter by the defendant as a defense to the charge for willfulness waives all right to protect privileged communications between that client and attorney. The doctrine also encourages patentees to target smaller firms, to whom the cost of obtaining a patent attorney opinion letter – not atypically in the range of $20,000 to $40,000 – is burdensome. As such, since the doctrine has no redeeming value except as an abusive tool of patent holders, it should be abolished in its entirety.

CONCLUSION

Thank you, Chairman Berman, Ranking Member Coble, and Members of the Subcommittee, once again for inviting me to make these remarks about our current patent system and the need for patent reform. I look forward to continuing to assist your efforts to ensure the patent system achieves its Constitutional purpose of advancing technology.

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34 *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GMBH v. Dana Corp.*, 383 F.3d 1337, 1348 (Dyk, J., concurring-in-part and dissenting-in-part) (Fed. Cir. 2004).

Mr. BERMAN. Well, thank you very much.

It is the Chair's intent to recognize, as a general matter, for the future, people who are here in the order of seniority at the beginning of the hearing and then as they come in, in that order.

Assuming the witnesses don't have flights to catch, I am hoping to have at least two rounds of questions and, if everyone else leaves, maybe six or seven rounds for myself. [Laughter.]

But I yield myself 5 minutes.

Dr. Myers, in your testimony, you list a number of reasons for declining patent quality. One of the reasons you list, without elaborating, is that patent approval rates are higher than in some other major nations' patent offices.

First, I might add that I have been told recently that actually the U.S. Patent Office rate of approval is starting to go down.

But why do you think the U.S. PTO issues more patents than other offices and just what is the problem with that?

Mr. MYERS. I am not certain of the differences between the European patent and the United States, because, in fact, there are actually so many different patent systems within Europe and Japan, as well.

What I think, though, is we had a great expansion of patenting in the technology period of the 1990's. At the same time, we did not increase the number of patent examiners proportionate to the workload and it is, frankly, seen, in part, as productivity, that is to say, yielding more patents for the amount of examiner hours.

And I think what Mr. Ravicher, I think it was, referred to the incentive to——

Mr. BERMAN. The grant.

Mr. MYERS. Yes. There is a high incentive to grant in that period and I think that that was at play within the United States system.

Mr. BERMAN. If both Mr. Ravicher and Professor Jaffe could comment on this. Much opposition to an additional re-examine or a robust post-grant opposition proceeding, a lot of the opposition to the post-grant opposition is that it would impact on the ability for a patent-holder to maintain quiet title.

Mr. Ravicher, you addressed this issue in your testimony. I would appreciate if you could expand on that.

And, Mr. Jaffe, I would also be curious about you commenting on the economic impact of the instability in the market resulting from that kind of a review process.

Mr. RAVICHER. I understand the desire of patent-holders to want quiet title. It is important and valuable to them and their investors, and I believe they can provide it for themselves.

If they are willing to agree to not assert their patent against the public, then there is no reason for the public to be worried about the existence of the patent.

But so long as the patent is issued, the current Patent Act says that all the public must abide by it and avoid infringing it.

Mr. BERMAN. I don't understand. Why would you want a patent that you couldn't assert?

Mr. RAVICHER. Well, you can change your perspectives on that. Cisco is one large company that generally is known to have a no first strike policy. IBM has licensed hundreds, if not thousands of

their patents for free use, so long as no one sues them for patent infringement.

A lot of large companies, Microsoft, et cetera, sign these cross-licensing agreements which are, in effect, agreements not to assert against one another, because of the transaction costs that would be involved if they did have these numerous fights of patent challenges.

So the same principal, why would someone do that amongst their large competitors, why wouldn't they do it, generally speaking, there are the same incentives.

But so long as a patent is issued, the public must abide by it and respect it. So, therefore, if there are questions about its validity, a post-grant review procedure which is efficient and fair should be eligible at any time of its validity.

Mr. BERMAN. Dean Jaffe?

Mr. JAFFE. I think I have a slightly different perspective on this and I am going to talk about this like an economist, not a lawyer, because I am not a lawyer.

I think there is a tension here. On the one hand, it is vital that holders of valid patents can, in some sense, in an economically meaningful sense, rely on the patent protection that they believe that they have gotten.

And, therefore, that is why, for example, I don't agree with the recommendation that the Federal Trade Commission made about changing the fundamental notion of the presumption of validity, because I think once a patent really has been issued, if it has been subjected to a process that we are confident in to ensure that it should have been granted, I think it is important that patent-holders have that presumption of validity so that they can rely on that in investing in their technology.

But I think the flipside of that then is if you are going to have a presumption of validity, we have to have a review process that is a logical basis for presuming that these things really are valid once they have been issued.

And I think given that we have hundreds of thousands of applications a year, it is simply not practical to have an examination process which, in the first instance, is sufficiently thorough to guarantee the level of validity that would, as a logical matter, not as a legal matter, but as a logical matter, would support a presumption of validity.

So in my view, some kind of post-grant review is the logical resolution of that tension. Once it ultimately comes out of the patent office, we need to be able to presume that it is valid.

But on the other hand, we can't afford to have the kind of thorough review of every patent that would guarantee that.

And so to say we will review the patents, if someone wants to, in some way, ask for re-examination, there will be that re-examination and, therefore, patents which have either survived such a re-examination or for which no one has asked for it, there will be a logical basis for presumption of validity.

And that is why I do think, again, I would disagree with Mr. Ravicher at this point. It is not unreasonable for there to be some time period in which that post-grant review or re-examination or whatever you are going to call it ought to occur, because that is the

way in which people who really do have a valid patent can in some way get to the point where they can rely on the fact that their patent has been granted, either has been challenged and survived or it has not been challenged, and, therefore, they can go about their business and rely on then protection that the patent offers.

Mr. BERMAN. The time has expired.

Mr. JAFFE. That is because I am longwinded, I am sorry.

Mr. BERMAN. No, no, no. It was very interesting.

I recognize the gentleman from Florida, Mr. Feeney, for 5 minutes.

Mr. FEENEY. Thank you, Mr. Chairman.

First, Professor Jaffe, as an economist, I remember one wit, and it may well have been an economist, once saying that there was a direct correlation and he could give you a prediction of the relative prosperity of a nation based on the number of patents that issued in that country.

And he specifically cited, for example, that the number of scientists born in India that came to America and established patents far exceeded by multiples of hundreds or thousands the number of patents that had been issued at that time, which was some years ago, in India.

Number one, if that historical correlation was roughly accurate, if it ever was, when did we get to the point where the concerns were more about the quality and the mechanisms for enforcement as opposed to the raw number of patents issued, telling us how prosperous we are likely to be?

Mr. JAFFE. I don't know if I can give you a comprehensive answer to that, but I would say from 1836, which was the time that the patent system, in roughly its current form, was established in this country, until 1985, the number of patents granted in the U.S. increased at about 1 percent a year, quite steadily, which is less than the population.

So over the entire 19th and first three-quarters of the 20th century, a time of tremendous technology development in this country, we were actually producing fewer and fewer patents every year relative to the population.

And then what happened is 1985, almost to the day, there was a radical upward shift in that trend. So that the number of patents has increased dramatically since 1985, at a rate of more like 6 percent a year.

Now, my colleagues and I in the scholarly profession have actually wasted a lot of computer time and a lot of paper trying to dissect that increase into the portion that may be attributable to a true acceleration in innovation and the portion that seems to be attributable to a change in the practice at the patent office and the answer seems to be it is some of both.

So I think the last 2 decades, something really has changed and what we have seen—I am not claiming innovation has stopped, obviously. There is still a lot of innovation in this country and much of it is patented and some of it is supported by the patent system.

But what we have seen is an increasing loosening of the connection and an increase in the amount of patenting that is not connected to true innovation.

Mr. FEENEY. Well, I think that is the best you can do about a comprehensive question.

I wanted to know, of all the witnesses, and I will just be brief here, but there are some key issues.

Could anybody raise their hand if they do not agree with the following statement, because there seems to be unanimity that all the witnesses agree that resources at PTO is a problem.

Raise your hand if you disagree.

There seems to be unanimity that the obviousness standard needs to be reinvigorated or reinserted. There seems to be some agreement that the Federal circuit's decisions have impacted the effective mechanism for enforcement.

Now, there is disagreement that the willfulness standard has utility.

Mr. Ravicher, you don't believe it has any meaningful utility.

Anybody else agree with Mr. Ravicher?

Mr. Myers?

Mr. MYERS. In our report, we did not believe that the willfulness was useful at this stage.

Mr. FEENEY. So there are some differences in the panel on that.

I also wanted to ask Dr. Myers, you talk about harmonizing Europe, the Japanese and the American patent examination system and that will be an interesting subject for a whole variety of reasons.

But one of the things I would like to ask you is how would that impact some of the more egregious countries that fail to protect property rights in an increasingly flat global world? I am thinking especially China and Russia, but there are many more.

I mean, the fact that we harmonize, does that put us at a relative advantage or disadvantage with people that aren't doing a good job at all?

Mr. MYERS. Well, those are, in fact, interrelated, but separable issues. In fact, if we take a look at the weight of the innovation processes at the present time, that Europe, Japan and the United States are, in fact, by far the most innovative of these economies.

Clearly, China is coming up, but still is far behind. And what we argue is that as we make changes in our system, we should, in fact, make them in such a way to make a harmonization possible and not to put remedies in place that remove us away from harmonization.

I have worked for years for our global corporation, American-based global corporation, of which we produce products in 41 different economies in the world and that having a common base of intellectual property to be able to move our products in the world would be an extraordinary benefit to American-based corporations.

Mr. BERMAN. The time of the gentleman has expired.

The gentleman from Virginia, Mr. Boucher.

Mr. BOUCHER. Thank you very much, Mr. Chairman. I want to commend you, Mr. Chairman, for your leadership in this very important policy area.

It has been my privilege to work for what has now been 5 years with Chairman Berman as we have constructed now two separate bills in two separate Congresses to address the need for better patent quality.

We started 5 years ago out of a concern about business method patents and the fact that some of the ones issued were so broad that they were effectively walling off entire areas to commerce and instead of enhancing innovation, actually retarding innovation, because fewer people could get involved in the business and in the process of innovation.

And the more we looked into the matter, the more we decided there were really deeper problems and those deeper problems were the need for better patent quality.

So now, over two Congresses, we have introduced two bills and, under the Chairman's leadership and sponsorship, we will be putting a third one in very shortly, hopefully within the next month.

But I am still concerned about business method patents. I read in the New York Times back in the fall that now business method patents are being awarded for tax strategies.

And I know the CPA profession is very concerned about this and I guess all of us, as taxpayers and clients of the advising profession on tax strategies should be worried about it, too.

And I am worried about it generally in terms of whether or not this fact and the award of patents like that perhaps means that the patent office is not doing what they represented to us they were doing.

They told us a couple of years ago that they had instituted something called the second look policy and that the second look policy was designed to apply a tighter screen and greater care on the patent examiners in reviewing and passing on business method patents and they have talked about a decline in the relative awards of business method patents as compared to the numbers of applications filed.

But if they are issuing awards for things like tax strategies, I have to question how effective that screen and that new second look really is.

So what I would ask each of you is to give me your thoughts on business method patents generally. Is the second look at the patent office working? Are we seeing business method patents that are too broad being issued?

And while our bill doesn't address that, because we were relying on this second look to solve the problem, do you think we perhaps ought to go back to where we started and add to our patent quality bill provisions addressing business method patents, either restricting the scope of them or, as a few people have suggested, eliminating them all together?

Who would like to begin?

Mr. JAFFE. Well, I have thoughts on that.

Mr. BOUCHER. Mr. Jaffe?

Mr. JAFFE. I think I share many of your concerns, but I think that at the end of the day, I would like to encourage you to stay where you are as opposed to go back to where you started or something like that.

I think that the problem with business method patents is the fundamental problem of the obviousness standard and the operation of the patent office and its inability to get the appropriate information from the people who really know about what really is novel and what really is obvious.

I think that the danger with trying to, from a statutory perspective, somehow create a special standard for business method patents or, alternatively, remove patent protection from that category is that it is very difficult once you go down the road of trying to have a patent system that is different for different kinds of inventions to make that work in the public interest, and the example that you cite of the extra look is a case in point.

My coauthor, Josh Lerner, has actually done some empirical work looking carefully at what has actually happened to patents that generally relate to business since the patent office implemented this second look approach.

And what he has shown is that there has, in fact, been a significant decline in patents in what are categorized as business methods and a corresponding increase in patents in closely related fields that are not subject to the second look.

Basically, what applicants have figured out how to do is, at least to some extent, to craft their applications so that they get around the tighter scrutiny that is imposed on business methods.

Mr. BOUCHER. Sounds like campaign finance reform.

Mr. JAFFE. I have no opinion on campaign finance reform.

I would submit that that same kind of difficulty would crop with intensity with the statutorily, which is to say the world out there is just too complicated.

Mr. BOUCHER. I don't disagree with you. We basically decided not to put provisions in our bills relating to business methods for many of those reasons.

I will have to confess, though, some measure of concern seeing the kinds of broad business method patents, such as tax strategies, that now apparently are getting through the screen.

Let me just quickly, and I know my time has expired, see if anyone else wants to comment on business method.

Mr. RAVICHER. I would actually like to argue that expanded patentable subject matter was not caused by the PTO.

In fact, if you look at the PTO's history, they have generally fought very hard against the expansion of patentable subject matter.

It has been the Federal circuit that has actually done all the——

Mr. BOUCHER. I am aware of the State Street Bank case.

Mr. RAVICHER. And I am very concerned about introducing patents in a field where they have no economically positive effect.

Mr. BOUCHER. So your recommendation?

Mr. RAVICHER. Is that software should not be patentable subject matter and neither should business method.

Economists have studied his and found that it doesn't enlarge investments and it actually increases the costs, transaction costs of patent litigation and hiring patent attorneys. So there is a negative effect on the industry.

Mr. BOUCHER. Mr. Chairman, it is up to you as to whether we carry this on. There are others who want to respond.

Mr. BERMAN. Let's take an additional minute.

Mr. MYERS. Both software and business method patents, I treat them the same way. What I find is the European thinking on this subject attractive, is that there has to be an inventive step and I

generally look for technical advances in the underlying inventive step.

Then it becomes less ambiguous to me that it actually should be a patent.

Mr. BERMAN. Let's move on to the gentleman from Virginia, who has also been very involved in this, Mr. Goodlatte.

He is gone, all right. I think Mr. Cannon was here next.

Mr. CANNON. Thank you, Mr. Chairman.

First of all, I appreciate your having this hearing. It is a very important topic, and we spent a lot of time last year working on it, and I hope we make some progress this year.

It is a complicated debate, and I believe what we are doing intellectually is the most important production in America today, and we need to take care of that.

One of the issues we dealt with extensively last year was venue. And, of course, there are a number of articles about venue and about the issues and about the filing of patent cases in Marshall, Texas, as a way to game the system.

I am supportive of the language that would limit the ability of true patent trolls to pick forums with which neither party has any connection and where no evidence concerning the case could be found.

So I would like to ask the panelists generally, each of them, do you perceive any problems of having venue language expressly establishing a de minimis context standard for the filing of a patent suit, while the limiting the ability to game the system by, for example, assigning the patent to a shell entity located in a particular forum, or should these disputes be heard where the real parties of interest are located?

And what would be the benefits or problems of attempting to create such a standard?

I am not sure if all of you have—you have various backgrounds here, and, frankly, an economics approach to this is as important to me as the legal approach.

But I suspect that, Ms. Michel, you were making notes and you are a lawyer and you might want to take a first cut at that.

Ms. MICHEL. Actually, Congressman, I am aware of the debate surrounding the venue issue. However, it was not part of the FTC's study or part of the FTC's report. So I won't be able to comment on that.

Mr. CANNON. Thank you.

Do we have any comments on venue from others?

Well, it is sort of a legal technicality. I hate to bug you with this, but what it really does is it distorts the market by having judges chosen by people whose interests may not be as substantial and getting into a long process that never gets booted out of court and, in fact, the party may win.

Mr. BERMAN. Would the gentleman yield?

Mr. CANNON. Certainly.

Mr. BERMAN. It has been a great boon to the hotel and restaurant industry in the area.

Mr. CANNON. I know. I am trying to figure out where this argument was going, because maybe we can do something in Utah along those lines for economic development.

Although I hasten to add that because we have a lot of intellectual property, our unemployment rate is like 2.6 percent, 2.7 percent in Utah. So we are not complaining we don't need this industry.

Mr. Ravicher, do you have any ideas on this issue?

Mr. RAVICHER. Well, my only concern is that everyone gets a fair day in court and that right is deserved by patent-holders as much as defendants.

So a venue statute, a change in venue may work to balance more fairness in the playing field, but I would just want to encourage that we don't go too far and make the court of choice determined by the venue statue to be too favorable to defendants.

It should just be fair. And I agree with you, there are lots of concerns about the eastern district of Texas at this point. Hopefully, that will work itself out over time, but a venue statute might also help address that more quickly.

Mr. CANNON. You know, the fact is that it is very complicated. If you go too far, you really foul up. And so that is the key to be balanced. But we have had some excesses and people with no—I don't know how you even describe what we often call trolls, getting an exceedingly great advantage based upon a choice of venue.

Mr. Myers, do you have comments on that?

Mr. MYERS. No. That was not part of our study and I do not have personal knowledge to contribute to this.

Mr. CANNON. Mr. Jaffe, do you have an input?

Mr. JAFFE. Sorry, I really haven't looked at it.

Mr. CANNON. One of the problems here with, if I can just give my own perception here for the record, one of the problems with this issue is this is a very complicated issue and how you do what you said, Mr. Ravicher, how you balance this so you don't go too far in any direction is very, very important, involves many things that some parties would like that are dramatically opposed by other parties.

Some of the simple rules may be the best way to actually deal with that.

Maybe, Mr. Jaffe, you could address this to some degree. We have had this proliferation of patent cases on the Supreme Court docket.

Does that signal a need for us to do more here in Congress to clarify things?

Mr. JAFFE. From my perspective, I don't think the Supreme Court taking these cases signals one way or the other. I think that a number of the cases that they have taken offer the potential for them to do some good on some of the issues that we have talked about, but I don't think anyone thinks that those cases are going to solve all the problems.

So I think the issues that we have talked about are neither—that neither makes them more urgent nor less urgent. They are there and they need to be dealt with.

Mr. CANNON. The rumbling in the background, we hope someday somebody will invent a round wheel to solve that problem.

I see that my time has expired, Mr. Chairman. I yield back. Thank you, Mr. Chairman.

Mr. BERMAN. If the Subcommittee will allow me, I am going to go out of order and recognize the gentlelady from California.

Ms. LOFGREN. Thank you, Mr. Chairman.

I really want to commend you for scheduling this hearing and I am really very excited about the prospects for successful action in this Congress on a bipartisan, bicameral basis.

I just sense that we are going to be able to achieve a useful reform in this Congress and that is good news.

It has been interesting to hear you, Mr. Ravicher. I have not run into you before.

But just thanks to all the witnesses. What you have done, actually, all of you, has helped to bring us here today. I mean, the National Academy report really had a profound influence on my thinking and I think the thinking of all of us.

And, Professor Jaffe, your book came out and we are all reading it and it really was a major impact on helping us to understand issues.

Obviously, we may not agree on every single recommendation, but it was a very useful publication. And, certainly, the FTC report, also, very, very helpful.

I was interested, when I read your book, Professor Jaffe, about the impact—I wasn't in the Congress when the Federal circuit court was devised, but certainly the impact was different than anybody intended.

And I am thinking about how all of you are familiar with the various things that we have had in the various bills. I am haunted by the fact that really the best of intentions had unintended consequences in terms of the Federal circuit.

Do you see any of the various remedies that we have considered in the various bills having that kind of unintended outcome, such as the circuit court?

Is that fair to ask, Professor, or any of you?

Mr. JAFFE. Well, it is always fair to ask. I always tell my students there are no bad questions, there are only bad answers.

I guess what I would say is, obviously, you could never know for sure. I think what I would urge you to try to think about to avoid that, I think with the benefit of hindsight, but I think perhaps there could have been foresight there, what went wrong with the court of appeals for the Federal circuit is that Congress viewed the problem as purely an administrative one and thought about it as an issue of what will make the administrative system, the court system, work best on its own terms.

And what an economist would say is what you always need to think about is how the people out there are going to respond. What incentives are you creating for them to act differently than they were acting before?

And I think that if you try to keep in the front of your mind the incentives that you are creating for the people in the economy, inventors, lawyers, companies, and how you are changing their incentives, I think you at least increase the chances that you will avoid some unintended consequences.

I do think there is a danger; we have already talked about it, so it is not like it is unseen. Congress is right to be concerned that the changes that it makes to deal with patent quality will create

opportunities for people who simply want to make trouble for those who really have invented something and are trying to get a valid patent to make it harder for them.

I think we all recognize that there is a balance there and that is something that we need to be conscious of in designing these changes.

Ms. LOFGREN. Dr. Myers?

Mr. MYERS. Well, the unintended consequence that I would hope that we would avoid is to take acts of reform that, in fact, would make harmonization more difficult.

Ms. LOFGREN. Well, I was wondering, I was intrigued by your comment and I think of all the things that we might want to do, directly stepping up on harmonization is probably politically one of the more difficult things to achieve.

Mr. MYERS. Yes.

Ms. LOFGREN. But are there any of the remedies, and they are really litigation remedies more than anything else, that you think we should look at and probe as a potential barrier to eventual harmonization?

Mr. MYERS. Well, one of those that we need to act on is to align ourselves with the rest of the world and to resolve the issue of first to invent versus first to file.

Ms. LOFGREN. That may be one of the harder things to do.

Mr. MYERS. That is one of the hardest. But if we cannot get there, we never can get started.

Ms. LOFGREN. I agree with you and actually I agree with where we need to be ultimately on that, but are there any set of remedies that, if we were to adopt them, that we have considered, would put us farther away rather than closer to eventual harmonization?

Mr. MYERS. Yes. To the extent that we tailor remedies to specific industries, we will make it harder to, in fact, have a uniform harmonization.

Ms. LOFGREN. The TRIPS issue.

Mr. MYERS. Right, and the TRIPS issue. I might just add, with respect to your comment, one of the things, though, that the importance of the Supreme Court acting on a number of these cases, to the extent that they consider the obviousness standard, that is not something that we can achieve through legislation.

And the obviousness standard could be treated at the Supreme Court, which would have significant impact on the——

Ms. LOFGREN. My time is over.

I agree, I am eager to see. Of course, we will know probably before we act what the court is going to do on that.

I recall Mr. Berman saying, I think in the last Congress, on the injunctive issue, maybe we should just re-enact the statute and say this time we mean it.

So some of this is really not as easily subject to legislation.

And I appreciate the gentleman for recognizing me.

Mr. BERMAN. It is funny you should raise that, because we looked at that statute, we were all talking and we said, "This is what we think it says," even though the Federal circuit has said something else and then the Supreme Court, in its infinite wisdom, said it did say what we thought it said.

Mr. Issa?

Mr. ISSA. Thank you, Mr. Chairman, and thank you for continuing the work begun so many years ago and with new vigor.

It is not often that I have local inventors and people interested in a hearing so much that we have endless e-mails requesting that I ask specific questions.

So I have culled through the many questions to just one, which you can respond to very, very quickly and/or in writing, then I will have met my obligation at least in one part of many.

That is that I have a constituent who is convinced and says that the 30 to 35 percent invalidity that is found on patents when they are litigated today is actually lower than the 55 percent or so that had all or part struck down in the 1970's and 1980's.

I couldn't find validity in that. Is there anyone that has knowledge that could give me the fact that apparently we are actually lowering the amount of striking of claims in current litigation versus previous litigation?

Mr. RAVICHER. Those numbers are absolutely correct. There was a much higher rate of finding patents invalid in litigation prior to the creation of the Federal circuit and that was one of the reasons for the creation of the Federal circuit.

Mr. ISSA. Okay, so we are not going to pooh-pooh the Federal circuit anymore today. They have done at least that amount of good.

Let me move on to a few of my own questions and some of them also mirror constituent questions.

I guess, first of all, let's establish something maybe as a common ground. What this Committee has looked in legislation at is the question of post-grant re-examination or post-grant opposition.

But can we all agree that today the patent office, during the entire life of a patent, has an unlimited amount of time in which it can re-examine based on submittals of ex parte information or information it obtains directly, it can choose to re-examine patents? Is that correct? Am I missing something?

So those would argue that they want certainty don't have it today. Is that correct?

Second question—and that is a "yes," by the way, for the notetaker.

Mr. BERMAN. Yes, it sounds like yes.

Mr. ISSA. The second question would be, do we all agree that re-examination, as it is today, is not well-appreciated or regarded by the outside world and that that has at least partially led to the PTO changing from the examiner re-examining oneself to the board that they are now beginning to implement?

Is that pretty well-agreed that it was dissatisfaction with the quality of re-examinations that led to this? It is okay not to have an opinion, but if I have missed something, I want to know.

Mr. RAVICHER. Well, I will agree that there is a general—not a lot of safe in the re-examination process being as successful for challengers to patents as other methods of challenging the patent.

Mr. ISSA. Then because I have draft legislation that we have been working on in our office, I am going to ask the next question, because I really want the answer.

Is there any reason that any of you can find that we wouldn't try to combine post-grant, which was in the previous two Congresses, and the re-examination process and make a robust workable sys-

tem that recognizes that if there is significant new information in the current re-examination, we already have the ability to look as many times as an independent body believes that there is significant new material to be re-evaluated, if we hybrid that, in a sense, with post-grant, but make it have higher certainty and higher credibility, is that ultimately an acceptable goal for legislation this body may come up with?

Ms. MICHEL. If I could address that, Congressman.

There are other concerns, though, with the current inter parte re-examination procedure that we think a post-grant opposition procedure might remedy, that being, for instance, the current inter parte procedure before the patent office doesn't allow the challenger to raise some important issues of validity.

Mr. ISSA. Right, and I have no problem with—and I would like to have that in writing, because as we craft, assuming that no one has any objection to the idea that you have a post-grant re-examination process.

People just don't like it or believe in it or feel that it is fair or feel that it has the certainty and they don't like that it isn't really truly effectively binding on the court.

So it doesn't resolve anything if you are proceeding to a district court. It doesn't necessarily bring you the finality you would like to have and it certainly doesn't bring you an automatic appeal to the fed circuit.

Assuming many of those things might be in the follow-on legislation, I would ask each of you that has information on how you would like to see it, please submit it in writing.

My reason for it and the reason I am sure the Chairman will look forward to seeing it is that the hope is that there is something between one of the biggest stumbling blocks we had in the previous two Congresses on this legislation, which was everyone—if you will indulge me for a second, Mr. Chairman—believing, wait a second, post-grant, that is somehow new, when I said it and said, "No, wait a second."

I have done a re-examination of a patent against my own company that was more than a decade old. Actually, it was near expiring and we succeeded. It is not uncommon.

So knowing that that existed is why I hope that all of you could respond with if we assume we are going to consolidate into one effective system in our legislation, if the Chairman allows it to be entered, that we would like to have as much information into it.

If you will, the theme of it is "mend it, don't end it."

Thank you, Mr. Chairman. I yield back, even though I have 4,000 more questions.

Mr. BERMAN. Thank you very much.

The gentleman from California, Mr. Schiff?

Mr. SCHIFF. Thank you, Mr. Chairman.

Thank all of you for being here. This has been a struggle for us for a number of years to get a bill that we could all agree on. But I am confident that our Chairman, who is a master of the legislative process, will find a way to make it happen.

Mr. BERMAN. Mastery of the legislative process?

Mr. SCHIFF. If it can be done, you are the person who could do it. I am sure it will be correctly placed in the record.

One of the obstacles, on a very kind of macro level, we had and still have is disagreement among industries about the proposed reforms. Since they use the patent process in different ways, the technology and software industries, patents having many sub-patents in them.

Pharmaceuticals may be relying on one patent for a drug or a small number of patents.

Do you have any suggestions about how to reconcile those conflicts, since there have to be reforms in order—to any inventor and legitimate patent-holder's benefit, there ought to be a common ground that we can find that don't have either unintended consequences or reduce the potential for unintended consequences or that represent simply a tradeoff of one industry's advantage for another.

Do you have any thoughts on how to bridge that problem that we have wrestled with?

Ms. MICHEL. I will take a stab. It is the $64,000 question here.

But I actually believe that there is quite a bit of common ground between both industries, that they are both—I don't mean to say both industries, there are certainly more than two involved.

But certainly I think all industries that use the patent system are deeply committed to improving patent quality. There is a wide range of agreement that there ought to be some kind of post-grant opposition procedure and that the disagreement really comes down to the details on that one.

I can't give you an answer on how to reconcile their disputing views, but they do agree there should be some kind of procedure there.

The other big area of disagreement was the injunction issue and I think, at this point, with the Supreme Court's eBay decision and with the district courts dealing with that decision right now and approaching it, the Federal circuit has not yet taken a case, that probably the best procedure there, in my view, would be to just wait and see what happens.

So that area of disagreement is off the table and that leaves a lot less.

Mr. SCHIFF. Thank you.

Anyone else care to jump in?

Mr. MYERS. The big difference that has been, say, between the pharmaceutical industry and the electronics industry, the pharmaceutical industry still is built around the notion of blockbuster patents, a single patent creating an entire drug, and the electronic industry, as Intel might have thousands of patents that would be composed of a single product.

Where I see that all of these technologies are going will be complex systems. And so the drug industry will, in fact, I think move into what looks very much like what the electronics information industry is today.

And so when we talk about bioinformatics, it is biology, traditional pharmaceutical, but informatics is information technology. And so I think it is going to become an increasingly shared space.

Mr. SCHIFF. So we are going to see in this area what we have seen in the entertainment industry with content providers becoming tech providers becoming pipeline companies.

Mr. MYERS. Yes.

Mr. SCHIFF. Let me ask you, since you mentioned the post-grant opposition being one of the remaining potential issues, what are the unintended consequences?

For the people out there, Professor, as you describe them, how are they either going to take advantage of a post-grant opposition, game a post-grant opposition or otherwise make good economic use out of post-grant opposition?

How should we look at the incentives that would create with an eye to preventing abuse?

Mr. JAFFE. Well, from my perspective, I guess, as Suzanne said, the details do matter and people are going to argue over the details and it may be difficult to know exactly how that is going to play out or how that is going to affect people.

But conceptually, from my perspective, what the post-grant opposition is about is creating a system in which people who have information about the novelty and obviousness of patents that have been applied for and recently granted are induced to bring that information to the patent office, because the patent office itself, no matter how much you give it resources, if it remains in a mode of operating in Washington and interacting with the applicant and the applicant's representatives and trying to decide what technology is new and what technology is not obvious, is not going to be able to do a good job at that.

The world is just too complicated and changing too fast.

Mr. SCHIFF. And what is the nature of an incentive you would suggest?

Mr. JAFFE. The incentive is that if my competitor is about to get a patent on something that I don't think is really new, that is going to hurt me and if I really have the information that shows that it is not new, what we need to do is create an environment in which I am not so handicapped by sharing that information with the patent office that it is not in my interest to do so.

My understanding of the current inter partes re-examination procedure is that people in the world feel that the way the procedure is established, that given what they might hope to get out of it relative to the disadvantages it creates for themselves in later litigation if they bring information to the patent office, just choose not to use it, because the lawyers advise them that you are better off waiting and seeing the guy in court.

So what we need to do is we need to create an environment in which they don't feel that way, in which everybody recognizes that if there is a true dispute about the potential validity of a patent, it is in everyone's interest to get it resolved early so that the uncertainty can go away and people can go on with the real business of innovating.

So that is the key is to have a process where people who are the holders of the relevant information feel that it is in their economic interest to bring that information forward and give it to the patent office, so that it can be brought to bear at that stage, rather than having the patent issue, having a lawsuit, having lots of uncertainty and lots of expense to resolve that issue in Federal court with a jury who doesn't really have a clue what these guys are actually arguing about.

Now, the balance to that is you don't want to create an incentive or competitors to say, "A-ha, Mr. Schiff is about to get this great patent on a really good idea that is going to make my life difficult, let me muck up the works for him. Let me come in and throw all kinds of mud at the wall and see what sticks."

Mr. SCHIFF. Thank you, Mr. Chairman.

Mr. BERMAN. The gentleman from Florida, Mr. Wexler?

Mr. WEXLER. Thank you very much, Mr. Chairman.

I was wondering if I could ask Dr. Myers and any of the other panelists, if they wish.

The Committee that you chaired identified, of course, that the second compelling issue that should be addressed, the harmonization issue, and you have talked about it a good bit this afternoon, I was curious if you have had an opportunity to familiarize yourself, maybe very much so, with Chancellor Merkel's proposal to harmonize the regulatory schemes between the United States and Europe and create a far-reaching economic non-tariff-based agreement between the United States and Europe, which obviously is much broader than patents, so even just intellectual property.

But Germany has identified this as one of their key principals of their E.U. presidency, and I was curious if you had any thoughts as to whether or not this presents a rather unique opportunity to potentially harmonize patent issues with Europe.

And if you do, what role do you think Congress should seek to play in that process?

Mr. MYERS. This was not part of our study. First is I think harmonization will be difficult with or without some overriding impetus such as this.

But the impetus that I feel at this moment that Congress should place is to move in such a direction in reform which will not make unintended consequences of making harmonization more difficult.

That, I think, would be the first prudent direction for Congress to consider.

Mr. WEXLER. If I may, Mr. Chairman, just quickly, I think just in hearing the comments and so forth and given what appears to be the relative degree of importance of harmonization, we have this extraordinary, I think, opportunity where, arguably, the most important leader in Europe has come forth with a proposal to harmonize regulatory schemes, one of which would be the patent scheme, and it is being debated all over Europe as a major proposal and not a peep in America, which maybe says something about us. I don't know.

But I think it would probably be a worthy topic at least to think about what role we might be able to play, what you might be able to lead on this Committee, given the environment that exists in Europe in terms of the energy that is being put behind the issue.

Mr. BERMAN. You are seeing the convergence of a long-time and interested Member of the Intellectual Property Subcommittee and the Chairman of the Europe Subcommittee of the House Foreign Affairs Committee talking about an issue that I was—I was in Germany last weekend and their vision of sort of the dynamic direction of the trans-Atlantic relationship, at least on economic issues, was very much this regulatory harmonization, which very much included within it the intellectual property and patent area.

Thank you, Mr. Wexler, and we will think about how to do that. Do you think the Commerce Committee will let us?

Mr. WEXLER. They don't know about it yet.

Mr. BERMAN. I recognize the gentleman from California, Mr. Sherman.

Mr. SHERMAN. Harmonizing with Europe is probably easier than harmonizing with the Commerce Committee.

I am new to this Committee, new, of course, to this Subcommittee and just learning at this point. I look forward to reading some of the materials.

I have served on the Financial Services Committee and talked to a number of those engaged in financial services, banking, mortgage lending, et cetera, where they describe a particular horrible scenario.

They, over the years, develop business procedures and eventually they end up with an organization chart to lend mortgages with 50 different State laws, et cetera, and then somebody becomes aware of what their paper flow or information flow system is and patents it.

Now, it strikes me that it is unlikely to be novel if you learned about it by talking to friends at a mortgage lending company.

There is also this discussion of first to invent versus first to file. Is the current patent system to the point where I can file for a patent on somebody else's business system and then have them pay me royalties if they want to keep doing business the way they have been doing business?

Professor Jaffe? That is what you get for being the one nodding while I was asking the question.

Mr. JAFFE. Right. It is not supposed to be. As you indicated, in the scenario you described, the patent application is for something which is not novel.

And without going into the details of first to file versus first to invent, that is actually not directly relevant here. I mean, the fact that the organization has not filed for a patent on its organization doesn't bear on the fact that it is still not novel, if they, in fact, have been doing it for a period of time.

The difficulty is, and I am not going to speak to the specifics that you have addressed, because I don't know, but I think the generic difficulty the patent office has is in these new areas, it is harder for them than in other areas to learn as to whether things really are novel, because there aren't patents for them to go look at to see what has been done before.

And that is why I think the problem is not patents on financial services or business models, the problem is a system where things that are not novel won't get through because people will make sure the patent office knows that.

Mr. SHERMAN. Now, some experts perceive a problem with the way damages are calculated in patent infringement cases. Their concern is that courts will award to a patent-holder damages amounting to the entire market value or entire profit of a good, even when the producer of that good has infringed the patent unintentionally and, in fact, the patent that they have unintentionally infringed represents just one aspect of the patent.

Should we allow courts to determine awards based upon the entire product and the entire profit to be generated in selling that product and is there some other measure of damages that would be more fair?

Mr. RAVICHER. Well, the Patent Act says that the damages you are entitled to are equal to the higher of either reasonable royalty or your lost profits and there is very well-documented case law on how you calculate lost profit.

Sometimes you get a hybrid result. So the statute is quite fair in its language. It has been interpreted by some courts, including the Federal circuit, to be a little bit larger, a little bit more favorable for patent-holders and perhaps that statute should be clarified to better define the term "reasonable royalty" and that that royalty is not based off the value of the entire product of which one small component infringes your patent, but the reasonable royalty related to that component which you added.

Mr. SHERMAN. So it is the higher of your reasonable royalty or what was the other standard?

Mr. RAVICHER. Lost profit.

Mr. SHERMAN. Lost profit. Well, my lost profit is you have to conjure up the idea that I somehow went from the patent to having the whole product, the factory, the marketing plan, et cetera.

Do the courts engage in that kind of fantasy or do they look in a situation like that to some sort of fair royalty?

Mr. RAVICHER. Well, to get your lost profits, you have to come in with some good evidence of what is called convoyed sales, that you actually lost sales to the infringer.

So it is not as ephemeral as your——

Mr. SHERMAN. So if I don't even have a product that I am marketing, I focus only on the royalty.

Mr. RAVICHER. But the real penalty in damages is the trebling of damages under willfulness and the right to get attorney's fees. That is where you are really exposed and that is where you increase your likelihood of being willing to pay even more than you should pay because of your extra exposure provided by the willfulness doctrine.

Mr. SHERMAN. So you might end up setting for well more than is fair because you are afraid that a court will determine that you infringed intentionally, even though, in fact, it was unintentional.

Mr. RAVICHER. Absolutely.

Mr. SHERMAN. I yield back.

Mr. BERMAN. Thank you.

We will have a second. I will recognize myself for 5 minutes. Just a couple of loose strands here.

Mr. Issa raised the issue of findings of invalidity in court cases in the 1970's compared to now. I think to properly look at it in context, you would also have to deal with the issue of settlements that came as a result of litigation to get a comparative handle on that.

Just two other notions. One, the notion that injunctions now off the table, post-grant is a big issue. There are other issues. Mr. Sherman just raised one.

The National Academy of Sciences has talked about these what they call sort of subjective tests, best mode, inequitable conduct,

willfulness and all those are going to sort of come into play in what changes we make in all of this.

But I would like to ask a few questions. Maybe I will start again with Dr. Myers and Ms. Michel.

The obviousness issue, do you think the KSR case is going to have the potential to resolve your concerns?

I guess this is a bit of a speculative question, but at least conceivably could or do you think we in Congress are going to have to deal with that? Although let me also just interject here, and I guess this is really for the whole panel.

Do notions like formalizing sort of third-party submission of prior art, aren't those the kinds of things that are going to reduce mistakes on the obviousness issue and the novelty issue or at least have the potential to reduce it, as well as post-grant?

Mr. MYERS. Well, first is that when the Supreme Court, as it considers the KSR case and obviousness is part of that determination, I think that is vitally important to the lower courts with respect to standard-setting. It will have an influence.

Now, the specific concerns that we had raised were a couple biotechnology cases and certain areas such as business methods, which are not exactly at issue in this particular case.

Generally, though, we do not propose a legislative action to deal with the obviousness. I think that that is a court and probably the PTO administrative process that will have to deal with that.

Mr. BERMAN. And would the submission of prior art, giving the examiner more information——

Mr. MYERS. Giving the examiner more information is clearly helpful, yes.

Ms. MICHEL. Chairman Berman, I think you have identified two very important issues related to patent quality, but it is also helpful to keep them separated.

One is what is the standard of obviousness, and that is the issue that the KSR case is dealing with. I would agree that that case does have the potential to address many of the concerns the FTC talked about in its report with the obviousness standard.

The FTC participated in formulating the Government's position and the VSG put in a brief to the Supreme Court arguing that the standard of obviousness was currently too low in the way that the Federal circuit was interpreting it.

Mr. BERMAN. Now, the word "too low" means?

Ms. MICHEL. Too easy to get a patent, that is right. The Government did argue before the Supreme Court——

Mr. BERMAN. Too high to find obviousness.

Ms. MICHEL. Too high, that is correct. It is too easy to get a patent under the current standard of obviousness.

The other related issue, the patent quality, is does the patent office have the information it needs to make a good determination.

Now, the patent office needs to follow the law as set out by the Federal circuit. And so even when the PTO has all the right information, if the standard of obviousness makes getting a patent too easy, just not getting the information to the PTO won't fix everything.

So we do need to attack this other issue.

And you mentioned a couple of mechanisms for getting the right information to the PTO, because the way the system is set up, only the patent applicant is dealing with the patent office and it is sometimes competitors of the patent applicant that will really have the best information on prior art.

So one way to do that is post-grant opposition. Another way to do that would be to allow third parties to submit prior art to the patent office during prosecution.

The FTC did look at this issue in its report. We heard some comments at the hearings that perhaps third parties would not use that procedure as much as we would like if it were available, because when a third party just submits the art to the patent office, without any ability to make a comment and point out the significance of the art to the patent examiner, there is concern that if the examiner then allows the patent in spite of that prior art, that competitor is then in a weaker situation later in litigation.

So although it could be a useful mechanism, I think it is unclear how much it would be used.

Mr. BERMAN. And, of course, the problem is you end up creating a pre-grant opposition that certainly doesn't go in the way of harmonization.

Mr. RAVICHER. Mr. Chairman, may I just make two quick comments.

On KSR, legally, it will not resolve the problems with obviousness. Politically, it might.

Legally, it won't, because it only addresses one of the so-called secondary considerations that the Federal circuit has made preeminent on the obviousness inquiries, specifically the suggestion, motivation or teaching to combined secondary consideration.

There are other secondary considerations, such as commercial success, failure of others, teaching, that the Federal circuit has made preeminent.

All those secondary considerations need to be relegated back down to the correct level, that they are not the preeminent focus of an obviousness inquiry.

Politically, they may see the signals on the wall that they have gone too far in lowering the obviousness bar. So they may fix that on their own, but I still think legislative action would be merited.

On prior art for examiners, the examiners do a really good job. They find good prior art.

The problem is continuations allow the applicant, even when the examiner has made a rejection, made it final, the applicants can just pay a fee and keep the argument going. I have seen examiners do it six, seven, eight, nine times in a row, rejecting, with good prior art.

But the availability of filing continuations just defeats their ability to actually end the case, end the matter, and get it over.

Mr. BERMAN. Mr. Feeney?

Mr. FEENEY. Thank you, Mr. Chairman.

Again, for the witnesses, we are really grateful.

We heard about the problem, I am sure this maxim is in the public domain of unintended adverse consequences. I have to tell you that I have had dozens of individuals and groups come to me in my

office and talk about patent reform and they are all in favor of it, as long as they get to write the details.

I would like to copyright one of Feeney's maxim about legislating, and that is, that no situation is so bad that Congress can't make it worse and I think all of us want to be careful that we do the best we can to think about what reforms we do put in place and what the consequences will be.

One of the issues that hasn't been talked about a lot here today, but is talked a lot about when you speak to people that are trying to be creative and put useful products out on the market, is, after all, Professor Jaffe said it is not the innovation and creativity so much as the usefulness of that to our consumers that is the goal of the patent process.

We hear a lot about patent trolls out. I am a real estate lawyer by background and if Bill buys Black Acre from Mary, Bill has the same bundle of rights under real estate theory as Mary did, and that is part of Mary's bundle, what makes it valuable.

Presumably, when Michael Jackson writes and sings a song and has the ownership rights, he has the same interest when the guys the Beatles' music and the rights to it as the stuff that he created, and that is important to the Beatles and other would be music creators.

The problem with patent trolls that has been identified, and I would like to ask you whether this is fair, is that you have somebody who is not an inventor, is or knows some very successful and capable litigators, that buys existing technology, puts it on a shelf somewhere, and denies the use of that, as a practical matter, to anybody that would put it out on the streets, because he warehouses it, hoping that he or she, I am talking about the patent troll—do we need to define what a patent troll is?

Is the problem of patent trolling real? And what are your thoughts about what patent reform ought or ought not to do about so-called patent trolls once we define them?

Mr. JAFFE. I will go on that. And at some point, you will decide you don't need to keep asking me questions, because I give the same answer to every question, which is to say I don't think that patent trolls, in and of themselves, are a problem.

I agree with you, someone who buys a patent from someone else has the same stature and ought to have all of the same rights to enforce that patent as an inventor has.

The problem that——

Mr. FEENEY. Why do you assume that that person is called a patent troll?

Mr. JAFFE. Well, different people use the word in different ways. I think to the extent that there is a problem with patent trolls, the problem is patents that people think are invalid and a legal system that doesn't create the right incentives for people to be able to oppose——

Mr. FEENEY. But, Professor, on those incentives—if I could, I will let you continue.

Would it make sense if we would adopt Mr. Ravicher's suggesting of getting rid of treble damages? Would that diminish the incentive for somebody to take some small piece of technology that could be

useful on the streets later as part of a big product and then just dumping it in a warehouse and hoping he gets lucky?

Would it reduce the incentive to warehouse technological pieces or components if we adopted Mr. Ravicher's suggestion?

Mr. JAFFE. Yes. And I think more generally, if you have good quality patents and you have a balanced litigation system——

Mr. FEENEY. We are all in favor of that.

Mr. JAFFE. I am just saying then there isn't a separate problem of patent trolls. People can call people trolls if they want to, but from a public policy perspective——

Mr. FEENEY. Does Dr. Myers or anybody else want to comment?

Mr. MYERS. Yes. First is that I think that there will be a market in intellectual property, that is to say, which will mean that the originator of the intellectual property will sell that and it can be sold multiple times.

I don't think that will be harmful. In fact, I think that can be helpful.

But we do have to keep in mind that this, though, is a grant to the public to, in fact, innovate. So that just withholding intellectual property from the public good, I think at some point, has a negative impact, because, in fact, as we are offering a monopoly right so that people will pursue the development of a needed value to society.

So it is not just an economic collection right, it is a right to serve the public in some beneficial way.

Ms. MICHEL. If I could address the question, also.

I think the problem is not so much a patent-owner warehousing its technology, because then the patent-owner is not making any money.

The business model is actually to go out and seek licenses to obtain royalties on those patents and the complaint is more based in that firms feel they are paying unjustified royalties on poor quality patents.

So, then, again, we always get back to patent quality. But reason they do that is because of the high cost of litigation and the uncertainty of litigation.

Therefore, a post-grant opposition procedure that serves as a faster, less expensive alternative to litigation is one possible way to address the problem.

The other big problem you hear in this context is that you have a patentee coming after a firm and that patent might cover only one little tiny piece of the chip, the computer chip or whatever, and the accused infringer can't take that risk of being completely shut down because of this one patent.

And, therefore, even though maybe the chance of being shut down if it is a poor quality patent, the result would be catastrophic and, therefore, you get the firm paying, again, perhaps unjustified royalties and raising its cost.

Mr. BERMAN. Mr. Issa?

Mr. ISSA. Thank you, Mr. Chairman.

Boy, so much. I am a little perplexed on two things, many things, but these two in particular.

First of all, the idea that it seems like this panel tends to agree that we should let the court continue to legislate, continue to change the rules, for example, as to obviousness.

The Constitution gives a very broad simple statement to what it means and, after that, it leaves it all to this body to create laws as to how to promote.

So it appears as though the House, with the acquiescence of the Senate, we trust, and the president, we are supposed to promote these inventions and works of art and we have done that repeatedly and the Supreme Court, in copyright, showed incredible deference to us making the inducement of 100 years or so on Michael Jackson's portfolio, if he lives a little longer.

So I am a little confused on why in the world we would say that figuring out what the obviousness standard is, in other words, figuring out what is patentable as useful and promoting that should be left to the courts.

Why in the world shouldn't we change the standard if the standard has been ambiguous and difficult? And you seem to all agree that basically they are producing poor patents and then doing a relatively difficult job of running it through the courts.

What am I missing?

Ms. MICHEL. I will take a stab at that. Any determination of patentability is necessarily going to involve a judgment call where you are applying inherently ambiguous language to a highly technical question.

Mr. ISSA. But let's take a stab at it for a second. Right now, we look at the case law that is built up on 102 and 103 and we look at an incredible amount of what has been objected to by the PTO, which is combinations of combinations of combinations of combinations of unpatentable material.

And I just call them combination patents, because you will find 5,000 claims that put together different things that individually are not patentable and each and every single one is granted another claim, sometimes dependent, sometimes independent.

Now, if we take the standard or the bias of the PTO and buy legislative act change that bias, which I think is the only way you are going to do it effectively, and we say, look, as the courts have done for us in the case of discovery, they say, look, you—I watch "Law and Order," like most of America seems to.

If there is inevitable discovery that I would have discovered the smoking gun in the bad guy's house, then it is admissible, even if I originally got it another way, because I can show I would have gotten it anyway. One standard.

We could change it to that. We could also change it to likely discover, likely if there are two patents that include all the claims and all the elements and they reference each other in the patents and then somebody comes up with these claims and puts them together in a different way and gets another patent.

Certainly, if we gave a likely discoverable standard, we would dramatically reduce the court's job and the PTO's job of limiting the amount of things which are patentable.

Do you all agree with that? And isn't that something that would require us to say there is a different standard? Because the courts had a bunch of whacks at it.

Okay, I like the nodding heads, that is always good. And before the Chairman nods——

Mr. BERMAN. I am just wondering, is there a reaction to that?

Mr. JAFFE. I confess to having nodded my head. I am not a lawyer.

Mr. ISSA. Did you think nodding your head doesn't count if you are not a lawyer?

Mr. JAFFE. No, I was just going to say I was similarly puzzled at the notion that Congress can't write the statute, but I can't tell you how to do it.

Mr. ISSA. We provide guidance for a lot of other things.

Ms. MICHEL. I didn't mean to suggest, Congressman, that Congress could not write the statute. Certainly, absolutely, that guidance would be welcomed.

Mr. BERMAN. We are not talking about war powers here.

Ms. MICHEL. No. My point was only that I think any written standard which will be general enough to apply to all technologies will never eliminate the individual judgment calls for an individual patent.

And so we will always have——

Mr. ISSA. Sure, I can agree that if we seek to reduce the amount of patents by making obviousness more likely to be declared, then we will only reduce the number, we will not eliminate the in betweens.

Let me go on to a couple more questions, because I know the Chairman has limited indulgence.

I am hearing, look, eBay says you got a license, essentially, if it stands the way it is, and, Daniel, you basically said you want to give it willfulness.

To me, isn't that catch me if you can and pay me only what you would have paid, at most, if I had taken a license to begin with?

Mr. RAVICHER. I agree with you that actual damages, if you eliminate willfulness, as I propose, you may need to modify actual damages by some factor in order to create the sufficient disincentive that you want to, such as in antirust law, where the actual damages are trebling whatever actual harm there was.

So you may want to up actual damages if you eliminate willfulness damages to try to make it the right amount.

Mr. ISSA. So it is "mend it, don't end it" on that. I was a little concerned that we were simply going to tell everyone, "Don't bother until you are done in court."

Since this is the last round, if I can just ask one more quick question.

Mr. RAVICHER. I am sorry. Just to go back to your Federal circuit issue.

Without politically opining about it, the Federal circuit, in my opinion, is quite a judicially activist court and part of that is because they historically have seen themselves as being asked by Congress to do that.

They seem themselves as having been created in order to build out a good patent policy for whatever reason. So they feel that that is part of their charter is to be slightly more aggressive with their interpretation and implementation of policy than your regular circuit courts of appeals.

Mr. ISSA. I think Justice Breyer would agree with you.

And as a general rule, I don't think we disagree that we like the fact that they look at this and go a little further than some courts will as technology advances.

The last question, though, is if we change the standard, if you will, to inevitable discovery, that these things would have come out, and we changed the bias and, at the same time, we improved the courts, which this Committee has moved out a piece of legislation we hope the Senate will take up quickly, then my real question still comes back to how really hurt are we going to be if we don't make the huge changes, but rather pick up a couple of significant changes?

Improve the existing patents by literally reducing the likelihood of getting as many claims, particularly combination claims, coming up with a post-grant re-examination that effectively is, if you will, fixing the non-functional re-examination process, improving the courts they go before, including administrative remedies, if possible, that dramatically reduce the burden to the court, but are appealable to the fed circuit, because the Chairman, rightfully so, wants to move a very large piece of legislation.

But if we do this relatively small things, do you believe that we can do a wait-and-see or do you believe there are dramatic other ones that are in the major legislation that still absolutely need to be done, is the broad question.

But it begs the question of we talk about little things that mean a lot. Do you need other bold ones and are there unintended consequences?

Mr. RAVICHER. I think one of the most critical problems to address that wasn't enumerated in your list is the fuzziness of patent boundaries or the indeterminateness of patent boundaries, because there is incentive to have arguable or ambiguous language in your claims, because you want to be able to argue at the patent office that it is narrower than the prior art.

Then once it is issued, you want to have that freedom as a plaintiff to argue that it is much broader.

So there is this incentive to have ambiguous claim terms and it is hard to know whether I am trespassing or not if I don't know where the border is between what is in the public domain and what is covered by the patent.

Mr. ISSA. I certainly agree with you, but when the courts really limited considerably means plus function and said, "Look, you only get what is there" and the walls are very hard and you can't break through them, they did a lot to one type of statement of what I am doing.

Again, if we take measures to provide language to the PTO and ultimately to the courts that similarly restricts the four walls, in other words, it is an invalid patent if it is ambiguous, therefore, if you want to re-expand what you narrowed, you, by definition, invalidate your patent, would that get past your concern?

Because, again, we are looking at patent quality on this Committee as much as we are looking at every other part of the patent process.

Mr. RAVICHER. Section 112's prohibition against indefiniteness I think has been missed and should be reawakened, as I said in my opening statement.

Mr. ISSA. Anyone else? Mr. Chairman is being indulgent.

Thank you.

Mr. BERMAN. I think for my last sort of questions, I would like to go back to the underlying picture. What is large versus what is small is sort of in the eyes of the beholder.

I have a feeling, for maybe 400 Members of Congress, this is all pretty small. It is certainly not exciting in the traditional sense of the word, or in almost any other sense of the word.

But is it important? Can you, in some terms—perhaps quantifying is not the thing to do.

If we just walk away from this issue and leave the system sort of as it is, what are the costs for not dealing with issues of an alternative less expensive quicker procedure for determining validity, gathering more prior art, clarifying things which are now perhaps not serving any particular useful purpose, but are leading to lots of litigation and controversies, creation of these sort of settlements that maybe aren't based on real issues, but just on avoiding the expense of litigation?

What are the costs in terms of the economy as a whole as opposed to a particular company or individual? Is there a real cost here? It is sort of why should we care?

Mr. MYERS. First is that increasingly our standard of living will be dependent upon how innovative we are as a society and we are talking about a key part, not the only part, but a key part of our innovation system is the intellectual property system.

What we have to keep in mind is we have talked about validity, to actually determine validity today takes about 12 years. It is the 12 years it takes to go through the court processes to finally determine the validity of a patent going through all the legal challenges.

Under any circumstance, in a shortening time constant of technology life cycles, that is just totally inconsistent with respect to an innovation process.

I can't quantify what the impact of that is, but we know that we have a system that is now out of synch and that this is what I think we have to—all of the panel members and the questions I have heard, there is a recognition that that problem exists.

Mr. BERMAN. Anybody else?

Ms. MICHEL. Well, we certainly know we are living in the knowledge-based economy, where innovation is an extremely powerful driver in the economy and the ability to increase standards of living.

I wouldn't say the sky would fall, but on the other hand, this is an extremely important area and it is difficult to quantify the benefits of patent reform, and, yet, I think the FTC has made a case that they would be there.

Mr. BERMAN. By the way, just to interrupt myself, some people say FTC, they are focused on competition issues and don't like monopolies and concentrations of power and here we have, as Mr. Feeney indicated, the beginning of a constitutionally mandated system of exclusivity.

The FTC is a biased source to be opining on this issue, because they are coming from a perspective that is really about challenging what the founding fathers wanted to do.

What say you?

Ms. MICHEL. Well, thank you for allowing me to clarify. I think there is a misconception in that competition policy, antitrust policy really shares the same goal as the patent system and that is to enhance consumer welfare.

And the antitrust law and competition policy have done an excellent job in the past stretch of time, past few years, of taking the power of innovation to enhance consumer welfare into account when formulating competition policy.

And, therefore, I don't see really any conflict between the patent laws and the antitrust laws, because they are both aiming for that goal.

I think what the FTC brings to this discussion is the viewpoint of consumers and what consumers want is to maximize innovation, because that is the way that we are going to do the best job at enhancing consumer welfare.

And this is not about being contrary to the patent system. It is really about maximizing innovation.

Mr. BERMAN. Anything else?

Mr. JAFFE. Can I mention one thing? I actually think what Dr. Myers and Dr. Michel mentioned are the most important things, but I wanted to mention one other thing we haven't talked about today.

Coming down on the plane, I read the PTO's new strategic plan, which talks about hiring over 1,000 new examiners a year basically every year and contemplates that despite that, by 2010, they might have a million patents at any given time in the pendency pool.

And what is going on here is this is basically unsustainable, that we can't throw enough—we have all agreed with Mr. Feeney that they need more resources, but we can't give them enough resources to deal with the system under the existing rules.

And one of the things we haven't talked about is part of that increase in the number of applications is precisely the fact that it has gotten easier to get a patent, which encourages people to apply for patents that they wouldn't otherwise be applying for.

So if we can recalibrate this system, we will eventually discourage those frivolous applications and deal with what otherwise is going to eventually become a just completely unmanageable system.

Mr. BERMAN. So your notion basically is people aren't applying for patents for the fun of it, they are applying for it because they think they can get it pretty easily and make it a more rigorous test.

The other way is just to raise the fee so high no one could afford to apply for a patent.

Mr. JAFFE. I would not support that.

Mr. ISSA. Mr. Chairman, that was already tried two Congresses ago. We fought that, remember?

Mr. Chairman, if I could make one closing statement, just 10 seconds, just to opine on the 1985 increase.

After considerable research, I realized that it was the advent of the PC, IBM and others, that created the ability to so easily make so many claims and submit them and I would only suggest that if we go back to requiring IBM Selectrics with the courier element on it, that it be hand-typed, we could easily roll back this growth.

With that, I would yield back.

Mr. BERMAN. The downside of innovation.

Mr. ISSA. Yes.

Mr. BERMAN. Mr. Feeney?

Mr. FEENEY. Well, thanks. And, again, thanks for participating in the hearing.

Congressman Issa has indicated he has some 40,000 questions for the panel and, by my count, that means he has still got 39,900-some to go.

But I will make these my last questions, but I really do appreciate it. This certainly has been helpful, in my first hearing, in formulating some of the key issues in front of us.

I do want to raise a constitutional issue and this is not the Constitution Subcommittee, but we are the Judiciary Committee and now and then we touch on the Constitution here and there.

Dr. Myers brought up the interest in harmonizing U.S. patent law. Again, article 1 gives plenary authority to the Congress to establish patent protections and I guess it would be an interesting constitutional query.

Could we delegate, temporarily or otherwise, to some international organization and if the 110th Congress does decide to delegate some organization to, say, the E.U. and Japan and the U.S. and other appropriate parties, whether or not the 111th Congress would have the power, treaty or otherwise, just to simply ignore it, given the fact that protecting patent rights is not something that the three branches share equally in.

It is a plenary authority, the way I read article 1, that vests in the Congress.

So, anyway, it is a question. As we talk about harmonizing, we will have to get some better constitutional minds than myself involved in thinking about it.

I want to go back, because there was a discussion about Congress's role versus the role of the courts here.

Clearly, each individual court case where these matters are ultimately resolved is a decision where the courts are going to have to apply between parties A and B and maybe multiple parties, but Congress can go as far as we like in terms of establishing what those criteria are.

And the question is where to draw those lines, in my view.

Dr. Myers, you suggest, on number five of your proposals, that we ought to modify or remove the subjective elements of litigation, including things like obviousness.

And when we talk about standards like new and obvious, it seems like reasonable minds could agree on what is new or obvious and we could have an objective as opposed to a subjective standard.

But I guess I would suggest that reasonable minds can differ over what issues reasonable minds might different over and, in fact, we have had now the Federal circuit court differ about what

is or isn't new or obvious from reasonable minds on the U.S. Supreme Court.

So I think probably is appropriate for Congress to at least explore the advantages of giving additional guidance on these and other issues and certainly leaving the courts to a vacuum.

Sometimes it works, if you can establish a clear standard and give everybody guidance, but ultimately it is our prerogative to decide whether things are working well or not and I think, for the most part, people agree that things are not working as well as they could.

Does anybody want to comment? Because I know we had a discussion about this earlier, but in light of all that.

Mr. MYERS. What basically our first point of maintaining a unitary patent system, which is really the legislative level, and that whatever is legislated we believe should apply to all of the sectors, the business sectors that the patent system covers.

The courts will make differentiations around individual cases and I think that that would be appropriate because of the circumstances of those cases.

But I think we would not recommend making individual obviousness standards with respect to pharmaceuticals versus electronics in a legislative way, try to maintain the legislation.

Mr. FEENEY. But you think the courts can differentiate.

Mr. MYERS. The courts, on an individual case, or the PTO, in some of their procedures, to adapt to peculiar or special situations.

Mr. FEENEY. Thank the witnesses.

I will yield back the balance of my time.

Mr. BERMAN. Thank you.

And I want to thank all of you for your testimony. It did occur to me, given the gentleman's comments about harmonization and sovereignty, that the other alternative is to try to extend U.S. patent law extraterritorially and impose sanctions on anyone who doesn't go along.

I want to thank the witnesses for the testimony.

Members may have additional written questions to you, for which we will forward them to you and ask that you answer them as promptly as possible.

And the hearing record, because of the upcoming recess, will remain open until the close of business next Thursday, February 22, for submission of any additional materials.

This has been a helpful hearing for me and, I think, for the other Members.

And with that, the hearing is adjourned. Thank you.

[Whereupon, at 4:15 p.m., the Subcommittee was adjourned.]

APPENDIX

MATERIAL SUBMITTED FOR THE HEARING RECORD

PREPARED STATEMENT OF THE HONORABLE SHEILA JACKSON LEE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS, AND MEMBER, SUBCOMMITTEE ON COURTS, THE INTERNET, AND INTELLECTUAL PROPERTY

Mr. Chairman, I move to strike the last word.

Thank you, Mr. Chairman for holding this hearing. Let me congratulate you also on your election as Chairman of this very important subcommittee. Congratulations also to you Mr. Coble, on assuming leadership of this panel for the minority. I am confident that working together, we can achieve great things for the American people. We have much work to do and I look forward to working with all members of the subcommittee to address the real challenges facing our country in the areas of patent reform and protection of intellectual property.

Let me also welcome each of our witnesses. I look forward to their testimony.

The subject of today's hearing is "American Innovation at Risk: The Case for Patent Reform." This hearing could not be more timely, Mr. Chairman.

This hearing will explore the necessity of comprehensive patent reform is required, and will address whether inadequacies in the current patent system hamper innovation and hurt the American economy. As the Blackberry litigation demonstrated, deficiencies in the current system have the ability to paralyze America. Indeed, the New York Times noted that "[something] has gone very wrong with the United States patent system." The Financial Times opined that "[i]t is time to restore the balance of power in U.S. patent law."

The Constitution mandates that we "promote the progress of science and the useful arts . . . by securing for limited times to . . . inventors the exclusive right to their . . . discoveries." In order to fulfill the Constitution's mandate, we must examine the system periodically to determine whether there may be flaws in the system that may hamper innovation, including the problems described as decreased patent quality, prevalence of subjective elements in patent practice, patent abuse, and lack of meaningful alternatives to the patent litigation process.

One important place to look is U.S. Patent and Trademark Office ("PTO"). In order to determine whether to grant a patent, PTO examiners must ascertain whether a discovery is of patentable subject matter, useful, novel, nonobvious, and accompanied by an adequate description. The PTO requires an adequate number of examiners and easy access to information resources in order to process the high number of patent applications filed each year. Because each year the PTO must wait to see whether it will be appropriated all of the funds it collects, it cannot plan the hiring of staff or the implementation of quality initiatives in advance. While the quick efforts of the Subcommittee averted the fee diversion this year, there is no guarantee that the PTO will receive its user fees next year.

Some attribute the lack of resources at the PTO as the cause of the deterioration of patent quality, which has wasted valuable resources by sanctioning frivolous third-party court challenges and ultimately discouraging private-sector investment. As the world's technology leader and center of innovation, America must set a higher bar to ensure that undeserving inventions to not pass through the patent process. To that end, the PTO needs more guidance so that it only issues patents to discoveries that are truly inventive.

Once the PTO issues a patent of questionable quality, it is easier for unscrupulous patent holders to engage in abusive practices that hurt the economy. American inventors should no longer receive threatening licensing letters containing vague patent infringement accusations from patent holders, raising the specter of treble damages if they do not give in to the senders' demands. In striking a proper balance between patent holder rights and the prevention of abusive practices, a rejuvenated patent system would protect and reward the hard work of American inventors, but

would also ensure that "patent trolls" do not stop the American economy in its tracks.

The availability of meaningful and low-cost alternatives to litigation for challenging patent validity would provide an additional quality check. Such alternatives could include giving third parties a window to submit "prior art" to patent examiners before the issuance of a patent, creating a post-grant opposition procedure that would allow administrative challenges to patent validity instead of the current option of going to court, and by relaxing estoppel and inter-partes re-examination requirements to make them more available as options for opposing patent validity.

Taken together, these improvements would bring the American patent system up to speed for the twenty-first century and may also harmonize American law with that of foreign countries. Instead of remaining a hindrance to innovation and economic growth, the patent system should work for inventors and with competitive market-forces, ensuring America's patent system remains the best in the world and prevents risks to innovation.

Again, thank you Mr. Chairman for holding this hearing. I look forward to hearing from our distinguished panel of witnesses. I yield back my time.

PREPARED STATEMENT OF THE HONORABLE STEVE COHEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TENNESSEE, AND MEMBER, SUBCOMMITTEE ON COURTS, THE INTERNET, AND INTELLECTUAL PROPERTY

Today the Subcommittee considers a matter that is of critical importance to the nation's intellectual and commercial development. Most agree that some degree of patent reform is needed, though I recognize that there is disagreement concerning the nature and extent of the changes that are necessary. In considering all arguments regarding any specific patent reform proposal, I will keep my focus on what is best for the public interest. In serving the public interest, any reform in the patent system will also be what is best for business interests, regardless of the specific industry at issue. I look forward to hearing from the witnesses today to help us obtain a better grasp of the issues at stake.

TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY

EXECUTIVE SUMMARY

Innovation benefits consumers through the development of new and improved goods, services, and processes. An economy's capacity for invention and innovation helps drive its economic growth and the degree to which standards of living increase.[1] Technological breakthroughs such as automobiles, airplanes, the personal computer, the Internet, television, telephones, and modern pharmaceuticals illustrate the power of innovation to increase prosperity and improve the quality of our lives.

Competition and patents stand out among the federal policies that influence innovation. Both competition and patent policy can foster innovation, but each requires a proper balance with the other to do so. Errors or systematic biases in how one policy's rules are interpreted and applied can harm the other policy's effectiveness. This report by the Federal Trade Commission (FTC) discusses and makes recommendations for the patent system to maintain a proper balance with competition law and policy.[2] A second joint report, by the FTC and the Antitrust Division of the Department of Justice (DOJ) (forthcoming), will discuss and make recommendations for antitrust to maintain a proper balance with the patent system.

Competition and Patent Law and Policy Promote Innovation and Benefit the Public.

Competition through free enterprise and open markets is the organizing principle for most of the U.S. economy. Competition among firms generally works best to achieve optimum prices, quantity, and quality of goods and services for consumers. Antitrust law, codified in the Sherman Act, the FTC Act, and other statutes, seeks "to maximize consumer welfare by encouraging firms to behave competitively."[3]

Competition can stimulate innovation. Competition among firms can spur the invention of new or better products or more efficient processes. Firms may race to be the first to market an innovative technology. Companies may invent lower-cost manufacturing processes, thereby increasing their profits and enhancing their ability to compete. Competition can prompt firms to identify consumers' unmet needs and develop new products or services to

[1] Federal Reserve Board Vice Chairman Roger W. Ferguson, Jr., Patent Policy in a Broader Context, Remarks at 2003 Financial Markets Conference of the Federal Reserve Bank of Atlanta (April 5, 2003), *at* http://www.federalreserve.gov/boarddocs/speeches/2003/20030407/default.htm.

[2] The Federal Trade Commission issues reports pursuant to Section 6(f) of the Federal Trade Commission Act, 15 U.S.C. § 46(f).

[3] 1 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW : AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶100a at 4 (2000).

satisfy them.

Patent policy also can stimulate innovation. The U.S. Constitution authorizes Congress "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries."[4] To obtain a patent, an invention (that is, a product, process, machine, or composition of matter) must be novel, nonobvious, and useful. Moreover, a patentee must clearly disclose the invention. A patent confers a right to exclude others from making, using, or selling in the United States the invention claimed by the patent for twenty years from the date of filing the patent application.

This property right can enable firms to increase their expected profits from investments in research and development, thus fostering innovation that would not occur but for the prospect of a patent. Because the patent system requires public disclosure, it can promote a dissemination of scientific and technical information that would not occur but for the prospect of a patent.

Like competition policy, patent policy serves to benefit the public. "The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility."[5] The public disclosure of scientific and technical information is part of the consideration that the inventor gives the public.[6]

Competition and Patents Must Work Together in the Proper Balance.

Competition and patents are not inherently in conflict. Patent and antitrust law "are actually complementary, as both are aimed at encouraging innovation, industry, and competition."[7] Patent law plays an important role in the property rights regime essential to a well-functioning competitive economy. For example, firms may compete to obtain the property rights that patents convey. Patents do not necessarily confer monopoly power on their holders,[8] and most business conduct with respect to patents does not unreasonably restrain or serve to monopolize markets. Even when a patent does confer monopoly power, that alone does not create an antitrust violation. Antitrust law recognizes that a patent's creation of monopoly power can be

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[4] U.S. CONST. art. I, § 8. Other sections of this constitutional provision authorize copyright law.

[5] *Brenner v. Manson*, 383 U.S. 519, 534-35 (1966). The consideration an inventor gives in return for a patent "is the benefit which he confers upon the public by placing in their hands a means through the use of which their wants may be supplied." 1 WILLIAM ROBINSON, THE LAW OF PATENTS FOR USEFUL INVENTIONS § 22 at 305 (1890), *cited in* ROBERT P. MERGES & JOHN F. DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS 361 (3d ed. 2002).

[6] *See* James E. Rogan, *Prepared Remarks of James E. Rogan, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office* (2/6/02) 2, *at* http://www.ftc.gov/opp/intellect/rogan.htm.

[7] *Atari Games Corp. v. Nintendo of Am.*, 897 F.2d 1572, 1576 (Fed. Cir.1990).

[8] ROBERT L. HARMON, PATENTS AND THE FEDERAL CIRCUIT § 1.4(b) at 21 (5th ed. 2001) ("Patent rights are not legal monopolies in the antitrust sense of the word. Not every patent is a monopoly, and not every patent confers market power.").

necessary to achieve a greater gain for consumers.

Analogously, the Supreme Court has recognized the importance of competition to the patent system.[9] "[F]ree competition" is "the baseline" on which "the patent system's incentive to creative effort depends."[10] By limiting the duration of a patent, "[t]he Patent Clause itself reflects a balance between the need to encourage innovation and the avoidance of monopolies which stifle competition without any concomitant advance in the 'Progress of Science and useful Arts.'"[11] The patentability requirements for novelty and nonobviousness "are grounded in the notion that concepts within the public grasp, or those so obvious that they readily could be, are the tools of creation available to all."[12]

A failure to strike the appropriate balance between competition and patent law and policy can harm innovation. For example, if patent law were to allow patents on "obvious" inventions, it could thwart competition that might have developed based on the obvious technology. *See* Box 1. Conversely, competition policy can undermine the innovation that the patent system promotes if overzealous antitrust enforcement restricts the procompetitive use of a valid patent. *See* Box 2.

Box 1. ***An Invalid Patent on an Obvious Invention Can Harm Competition.***

In 1895, George Selden obtained a U.S. patent with a claim so broad that "it literally encompasse[d] most automobiles ever made." Yet the basic invention covered by that claim – putting a gasoline engine on a chassis to make a car – was so obvious that many people worldwide thought of it independently as soon as the most primitive gasoline engines were developed. The association that licensed the Selden patent collected hundreds of thousands of dollars in royalties – raising costs and reducing the output of automobiles – before Henry Ford and others challenged the patent, and the patent claim was judicially narrowed in 1911. *See* MERGES & DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS at 644-46.

The FTC/DOJ Hearings Examined the Balance of Competition and Patent Law and Policy.

To examine the current balance of competition and patent law and policy, the FTC and the DOJ held Hearings from February through November 2002. The Hearings took place over 24 days, and involved more than 300 panelists, including business representatives from large and small firms, and the independent inventor community; leading patent and antitrust organizations; leading antitrust and patent practitioners; and leading scholars in

[9] *See Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989) (federal patent laws embody "a careful balance between the need to promote innovation and the recognition that imitation and refinement through imitation are both necessary to invention itself and the very lifeblood of a competitive economy.").

[10] *Id.* at 156.

[11] *Id.* at 146.

[12] *Id.* at 156.

Box 2. ***Overzealous Antitrust Enforcement Can Undermine the Innovation that Patents Promote.***

In the 1970's, antitrust enforcers viewed grantbacks (*e.g.*, when a licensee has improved patented technology, it "grants back" to the original patentee access to the improvement) as automatically illegal. More recently, antitrust enforcers recognize that "[g]rantbacks can have procompetitive effects," for example, by encouraging a patentee to license its patent in the first place, thereby enabling the licensee's improvement. Antitrust enforcers now evaluate likely procompetitive and anticompetitive effects of grantbacks. Past antitrust rules may have deterred some procompetitive grantbacks, however, thus deterring some innovations using patented technology. *See* U.S. Department of Justice and Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property § 5.6 (Apr. 6, 1995), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,132, *available at* http://www.usdoj.gov/atr/public/guidelines/ipguide.htm.

economics and antitrust and patent law.[13] In addition, the FTC received about 100 written submissions. Business representatives were mostly from high-tech industries: pharmaceuticals, biotechnology, computer hardware and software, and the Internet.[14] This report discusses Hearings testimony and independent research, and explains the Commission's conclusions about and recommendations for the patent system.

CONCLUSIONS AND RECOMMENDATIONS

I. Although Most of the Patent System Works Well, Some Modifications Are Needed to Maintain A Proper Balance of Competition and Patent Law and Policy.

The patent system does, for the most part, achieve a proper balance with competition policy. The statutory standards of patentability appear largely compatible with competition; properly interpreted, they tend to award patents only when necessary to provide incentives for inventions, their commercial development, or their disclosure. Congress has enacted new statutes that protect competition by, among other things, facilitating disclosures of patent applications. The Court of Appeals for the Federal Circuit, the sole court for most patent law appeals, has brought stability and increased predictability to various elements of patent law. This has reduced legal uncertainty and facilitated business planning. The Patent and Trademark Office (PTO) has implemented initiatives to deal with new types of patents and has released a Strategic Plan for the 21st Century to improve patent quality (*i.e.*, reduce errors) and streamline procedures.[15] Hearings participants found much to praise in the current patent system.

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[13] The Commission thanks the DOJ and the Patent and Trademark Office for participating in many of the panels at the Hearings and for recommending many of the participants in the Hearings. For providing facilities to allow some of the Hearings to be held on the West Coast, the Commission thanks the Competition Policy Center and the Berkeley Center for Law and Technology at the University of California at Berkeley.

The Commission wishes to note the expertise and time contributed by Hearings participants. For all of their contributions, the Commission conveys its thanks.

[14] *See* Appendices A and B.

[15] *See* United States Patent and Trademark Office, The 21st Century Strategic Plan, *at* www.uspto.gov/web/offices/com/strat21/index.htm.

Nonetheless, many participants in and observers of the patent system expressed significant concerns that, in some ways, the patent system is out of balance with competition policy. Poor patent quality and legal standards and procedures that inadvertently may have anticompetitive effects can cause unwarranted market power and can unjustifiably increase costs. Such effects can hamper competition that otherwise would stimulate innovation. This report makes several recommendations for the legal standards, procedures, and institutions of the patent system to address such concerns.

II. Questionable Patents Are a Significant Competitive Concern and Can Harm Innovation.

A poor quality or questionable patent is one that is likely invalid or contains claims that are likely overly broad. Hearings participants raised concerns about the number of questionable patents issued.[16] Such patents can block competition, *see* Box 3, and harm innovation in several ways.

A. Questionable Patents Can Deter or Raise the Costs of Innovation.

One firm's questionable patent may lead its competitor to forgo R&D in the areas that the patent improperly covers. For example, firms in the biotech industry reported that they avoid infringing questionable patents and therefore will refrain from entering or continuing with a particular field of research that such patents appear to cover.[17] Such effects deter market entry and follow-on innovation by

Box 3. ***Blocking Patents***

The patents of others can block a patentee's ability to exploit its own invention. For example:

"[S]uppose that Admiral Motors obtains a patent on an internal combustion engine for use in automobiles. Later, Betty Beta purchases an automobile marketed by Admiral Motors that embodies the patented invention. Beta experiments with her new car and develops a dramatically improved fuel injector useable only in the patented Admiral Motors engine. Even if Beta patents her improved fuel injector, she cannot practice that technology without infringing Alpha's basic patent. . . . Unless one of the parties licenses the other, Beta must wait until Admiral Motors' patent expires before practicing her own patented improvement invention." ROGER E. SCHECHTER & JOHN R. THOMAS, INTELLECTUAL PROPERTY: THE LAW OF COPYRIGHTS, PATENTS AND TRADEMARKS § 20.1.1 at 462 (2003). If the blocking patent is invalid or overbroad, then no public benefits exist to justify its effects on follow-on innovation.

[16] For example, software firms raised concerns about patents that they believed should not have been granted, because the inventions were obvious based on preceding work in the area. While praising patents as the basis for their industry, biotech firms also raised concerns that some overbroad patents may discourage further innovation in some biotech areas. *See generally* Chs. 2 and 3.

[17] *See, e.g., FTC/DOJ Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, David J. Earp Testimony Feb. 26, 2002*, at pages 290-91, 238 (hereinafter, citations to transcripts of these Hearings state the speaker's last name, the date of testimony, and relevant page(s)); Blackburn 2/26 at 296; Caulfield 3/19 at 161.

competitors and increase the potential for the holder of a questionable patent to suppress competition.

If a competitor chooses to pursue R&D in the area improperly covered by the questionable patent without a license to that patent, it risks expensive and time-consuming litigation with the patent holder. If the competitor chooses to negotiate a license to and pay royalties on the questionable patent, the costs of follow-on innovation and commercial development increase due to unjustified royalties.

Another option is to find a legal means to invalidate the patent. PTO procedures allow only very limited participation by third parties, however. A lawsuit in federal court may not be an alternative, because a competitor may not sue to challenge patent validity unless the patent holder has threatened the competitor with litigation. If the competitor is not on the verge of marketing an infringing product, the patent holder may have no reason to threaten litigation. In these circumstances, as one biotech representative complained, "there are these bad patents that sit out there and you can't touch them."[18] If litigation does take place, it typically costs millions of dollars and takes years to resolve. This wastes resources.

B. In Industries with Incremental Innovation, Questionable Patents Can Increase "Defensive Patenting" and Licensing Complications.

In some industries, such as computer hardware and software, firms can require access to dozens, hundreds, or even thousands of patents to produce just one commercial product. One industry representative from a computer hardware firm reported that more than "90,000 patents generally related to microprocessors are held by more than 10,000 parties."[19] Many of these patents overlap, with each patent blocking several others. This tends to create a "patent thicket" – that is, a "dense web of overlapping intellectual property rights that a company must hack its way through in order to actually commercialize new technology."[20]

Much of this thicket of overlapping patent rights results from the nature of the technology; computer hardware and software contain an incredibly large number of incremental innovations. Moreover, as more and more patents issue on incremental inventions, firms seek more and more patents to have enough bargaining chips to obtain access to others' overlapping patents.[21] One panelist asserted that the time and money his software company spends on creating and filing these so-called defensive patents, which "have no . . . innovative value in and of themselves," could have been better spent on developing new

[18] Blackburn 2/26 at 295-96.

[19] Detkin 2/28 at 667-68.

[20] Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting*, *in* 1 INNOVATION POLICY AND THE ECONOMY 119, 120 (Adam Jaffe et al. eds., 2001).

[21] The forthcoming FTC/DOJ joint report will discuss the proper antitrust evaluation of licensing techniques used in such situations.

technologies.[22]

Questionable patents contribute to the patent thicket. In the context of a patent thicket, questionable patents can introduce new kinds of licensing difficulties, such as royalties stacked one on top of another, and can increase uncertainty about the patent landscape, thus complicating business planning. Questionable patents in patent thickets can frustrate competition by current manufacturers as well as potential entrants. Because a manufacturer needs a license to all of the patents that cover its product, firms can use questionable patents to extract high royalties or to threaten litigation.[23] For example, a questionable patent that claims a single routine in a software program may be asserted to hold up production of the entire software program. This process can deter follow-on innovation and unjustifiably raise costs to businesses and, ultimately, to consumers.

C. Recommendations to Improve Patent Quality and Minimize Anticompetitive Costs of the Patent System.

One recent article argues persuasively that because most patent applications involve claims of little economic significance, "it is much cheaper for society to make detailed [patent] validity determinations in those few cases [in which patents are challenged] than to invest additional resources examining patents that will never be heard from again."[24] Accordingly, the FTC's recommendations focus first on procedures and presumptions used in challenging questionable patents, because such challenges are more likely to involve patents of competitive significance.

Recommendation 1:

As the PTO Recommends, Enact Legislation to Create A New Administrative Procedure to Allow Post-Grant Review of and Opposition to Patents.

The PTO discusses patent applications only with the patent applicant. Until recently, third parties could only bring certain relevant documents to the attention of, and, in limited circumstances, file a written protest with, an examiner or to request the PTO Director to reexamine a patent. To address this situation, Congress passed legislation to establish limited procedures that allow third parties to participate in patent reexaminations. Recent amendments have improved those procedures, but they still contain important restrictions and disincentives for their use. Once a questionable patent has issued, the most effective way to challenge it is through litigation. Litigation generally is extremely

[22] Greenhall 2/27 at 377, 420.

[23] "Large and small companies are increasingly being subjected to litigation (or its threat) on the basis of questionable patents." *United States Patent and Trademark Office Fee Modernization Act of 2003: Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Property of the House Comm. on the Judiciary*, 108th Cong. 2 (2003) (Statement of Michael K. Kirk, Executive Director, American Intellectual Property Law Association), *available at* http://www.aipla.org/html/Legislative/108/testimony/FeeLeg.htm.

[24] Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. L. REV. 1495, 1497 (2001).

costly and lengthy,[25] and is not an option unless the patent owner has threatened the potential challenger with patent infringement litigation.

The existing procedures attempt to balance two perspectives. On the one hand, third parties in the same field as a patent applicant may have the best information and expertise with which to assist in the evaluation of a patent application, and therefore might be useful participants in the process of deciding whether to grant a patent. On the other hand, the limited involvement of third parties in the issuance and reexamination of patents reflects genuine concern to protect patent applicants from harassment by competitors. This remains an important goal. To continue to protect against the possibility of competitors harrassing patent applicants, any new procedure should be available only after a patent issues.

Because existing means for challenging questionable patents are inadequate, we recommend an administrative procedure for post-grant review and opposition that allows for meaningful challenges to patent validity short of federal court litigation. To be meaningful, the post-grant review should be allowed to address important patentability issues.[26] The review petitioner should be required to make a suitable threshold showing. An administrative patent judge should preside over the proceeding, which should allow cross-examination and carefully circumscribed discovery, and which should be subject to a time limit and the use of appropriate sanctions authority. Limitations should be established to protect against undue delay in requesting post-grant review and against harassment through multiple petitions for review. The authorizing legislation should include a delegation of authority permitting the PTO's conclusions of law to receive deference from the appellate court. Finally, as is the case with settlements of patent interferences, settlement agreements resolving post-grant proceedings should be filed with the PTO and, upon request, made available to other government agencies.

Recommendation 2:

Enact Legislation to Specify that Challenges to the Validity of a Patent Are To Be Determined Based on a "Preponderance of the Evidence."

An issued patent is presumed valid. Courts require a firm that challenges a patent to prove its invalidity by "clear and convincing evidence." This standard appears unjustified. A plethora of presumptions and procedures tip the scales in favor of the ultimate issuance of a patent, once an application is filed. In addition, as many have noted, the PTO is underfunded, and PTO patent examiners all too often do not have sufficient time to evaluate patent applications fully. These circumstances suggest that an overly strong presumption of a patent's validity is inappropriate. Rather, courts should require only a "preponderance of the evidence" to rebut the presumption of validity.

[25] A biotechnology case, for example, can cost between five and seven million dollars and take two or three years to litigate. *See* Ch. 3.

[26] At a minimum, patent challengers should be able to raise issues of novelty, nonobviousness, written description, enablement, and utility.

The PTO works under a number of disadvantages that can impede its ability to reduce the issuance of questionable patents. Perhaps most important, the courts have interpreted the patent statute to require the PTO to grant a patent application unless the PTO can establish that the claimed invention does not meet one or more of the patentability criteria. Once an application is filed, the claimed invention is effectively presumed to warrant a patent unless the PTO can prove otherwise.

The PTO's procedures to evaluate patent applications seem inadequate to handle this burden. The patent prosecution process involves only the applicant and the PTO. A patent examiner conducts searches of the relevant prior art,[27] a focal point of the examination process, with only the applicant's submissions for assistance. The patent applicant has a duty of candor to the PTO, but that duty does not require an applicant to search for prior art beyond that about which the applicant already knows.[28] If the patent applicant makes assertions or files documentary evidence regarding certain facts, the PTO does not have facilities with which to test the accuracy or reliability of such information.

Moreover, presumptions in PTO rules tend to favor the issuance of a patent. For example, "[i]f the examiner does not produce a *prima facie* case [of obviousness], the applicant is under no obligation to submit evidence of nonobviousness."[29] Similarly, "[o]ffice personnel . . . must treat as true a statement of fact made by an applicant in relation to [the asserted usefulness of the invention], unless countervailing evidence can be provided that shows that one of ordinary skill in the art would have a legitimate basis to doubt the credibility of such a statement."[30] Likewise, "[t]here is a strong presumption that an adequate written description of the claimed invention is present when the application is filed."[31]

The PTO's resources also appear inadequate to allow efficient and accurate screening of questionable patent applications. Patent applications have doubled in the last twelve years and are increasing at about 10% per year.[32] With yearly applications approximating 300,000,

[27] "Prior art" consists of materials – often patents and publications, although affidavits and testimony also may present prior art – that reflect one or more of the features or elements of the claimed invention. An invention is "obvious" if it does not represent a sufficient step beyond the prior art.

[28] The PTO's Manual of Patent Examining Procedure (MPEP) states that the agency "does not investigate" duty of disclosure issues and "does not . . . reject" applications on that basis. *See* United States Patent and Trademark Office, *Manual of Patent Examining Procedure* § 2010 (8th edition 2001) (explaining that such PTO determinations "would significantly add to the expense and time involved in obtaining a patent with little or no benefit to the patent owner or any other parties with an interest"), *available at* http://www.uspto.gov/web/offices/pac/mpep/mpep.htm (hereinafter MPEP).

[29] MPEP § 2142.

[30] United States Patent and Trademark Office, *Utility Examination Guidelines*, 66 Fed. Reg. 1092, 1098-99 (2001).

[31] United States Patent and Trademark Office, *Guidelines for Examination of Patent Applications under the 35 U.S.C. 112 ¶ 1, "Written Description" Requirement*, 66 Fed. Reg. 1099, 1105 (2001).

[32] Lerner 2/20 at 157; James Langenfeld, *Innovation, Competition, and Intellectual Property: Providing an Economic Framework* (2/20/02) (slides) at 6, at http://www.ftc.gov/opp/intellect/langenfeld.pdf.

they arrive at the rate of about 1,000 each working day.[33] A corps of some 3,000 examiners must deal with the flood of filings.[34] Hearings participants estimated that patent examiners have from 8 to 25 hours to read and understand each application, search for prior art, evaluate patentability, communicate with the applicant, work out necessary revisions, and reach and write up conclusions. Many found these time constraints troubling.[35] Hearings participants unanimously held the view that the PTO does not receive sufficient funding for its responsibilities.

Finally, the PTO grants patents based only on the "preponderance of the evidence." This standard applies in the context of an underlying presumption that the patent should be granted unless the PTO can prove otherwise. It does not seem sensible to treat an issued patent as though it had met some higher standard of patentability.

Defenders of the application of the "clear and convincing" evidence standard urged that a finding of patent validity by a neutral government agency using a knowledgeable examiner justifies placing a heavy burden on those who challenge a patent's validity. We disagree. Presumptions and procedures that favor the grant of a patent application, combined with the limited resources available to the PTO, counsel against requiring "clear and convincing evidence" to overturn that presumption. We believe the "clear and convincing evidence" burden can undermine the ability of the court system to weed out questionable patents,[36] and therefore we recommend that legislation be enacted to amend the burden to a "preponderance of the evidence."

Recommendation 3:

Tighten Certain Legal Standards Used to Evaluate Whether A Patent Is "Obvious."

Patent law precludes patenting if the differences between the claimed invention and the prior art[37] are such that "the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art."[38] "Nonobviousness asks whether a development is a significant enough technical advance to merit the award of a patent."[39] A proper application of this statutory requirement is crucial to prevent the issuance of questionable patents, including trivial patents and patents on inventions essentially already in the public domain. The courts have developed a variety of tests to evaluate the obviousness of a claimed invention. Two in particular –

[33] Chambers 2/8 (Patent Law for Antitrust Lawyers) at 86 (hereinafter 2/8 (Patent Session)).

[34] Chambers 2/8 (Patent Session) at 84.

[35] *See, e.g.*, Dickinson 2/6 at 64-65 ("Patent examiners need more time to examine."); Kirschner 2/26 at 242-43 (time available "clearly inadequate" for a meaningful examination of a biotech patent application); Kesan 4/10 at 100 (time constraints do not allow adequate search for software prior art).

[36] *See* T.S. Ellis 7/11 at 119-20.

[37] *See supra* note 25.

[38] 35 U.S.C. § 103.

[39] *See* MERGES & DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS at 644.

the "commercial success test" and "the suggestion test" – require more thoughtful application to weed out obvious patents.

a. In applying the "commercial success" test, 1) evaluate on a case-by-case basis whether commercial success is a valid indicator that the claimed invention is not obvious, and 2) place the burden on the patent holder to prove the claimed invention caused the commercial success.

The Supreme Court has advised that, in some circumstances, courts may consider the commercial success of a claimed invention to indicate that it was not obvious. For example, in some cases early in the twentieth century, courts found the commercial success of an invention that satisfied a long-felt need that had resisted the efforts of others to solve the problem tended to show the claimed invention was not obvious.

Commercial success can result from many factors, however, some of which have nothing to do with the claimed invention. For example, marketing, advertising, or an incumbent's unique advantages may cause commercial success. An undue reliance on commercial success to show nonobviousness can raise a number of competitive concerns. Commercially successful inventions may be more likely than others to occur even without the prospect of a patent. Patents on commercially successful products are more likely to confer market power than those on less successful products.

Certain patent experts and other Hearings participants expressed concern that courts and juries sometimes fail to use a sufficiently searching inquiry when they conclude that commercial success demonstrates a claimed invention is not obvious. Under current standards, if the patent holder shows that the claimed features of the patent are coextensive with those of a successful product, then it is presumed that the invention – rather than other factors – caused the commercial success. The burden shifts to the challenger to present evidence to rebut that presumption.[40]

This test fails to ask, first, whether factors other than the invention may have caused the commercial success. By contrast, the PTO properly requires that commercial success be "directly derived from the invention claimed" and not the result of "business events extraneous to the merits of the claimed invention."[41] Second, the judicial standard too easily shifts the burden to the challenger. The patent holder is the best source of information on what has caused the commercial success of its product and should be required to show that, in fact, the claimed invention caused the commercial success.

b. In applying the "suggestion" test, assume an ability to combine or modify prior art references that is consistent with the creativity and problem-solving skills that in fact are characteristic of those having ordinary skill in the art.

If the prior art already would have suggested the claimed invention, then the

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[40] *See* HARMON, PATENTS AND THE FEDERAL CIRCUIT at 169-70.

[41] MPEP § 716.03(b).

claimed invention is obvious. If not, then the claimed invention is not obvious. The "suggestion test" thus asks a helpful question – that is, to what extent would the prior art "have *suggested* to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success."[42] The Federal Circuit justifiably has sought to protect inventors from findings of obviousness based purely on hindsight. "Good ideas may well appear 'obvious' after they have been disclosed, despite having been previously unrecognized."[43] The Federal Circuit also has sought to ensure that the PTO provides an administrative record susceptible to judicial review.

Hearings participants expressed concern, however, with some recent applications of the suggestion test. To show that a claimed invention is obvious, some cases seem to require the PTO to point to particular items of prior art that concretely suggest how to *combine* all of the features of a claimed invention. Such an application of the suggestion test may have found that the claimed invention of the Selden patent – that is, putting a gasoline engine on a carriage – was not obvious, because there was no document that suggested that combination. The invention likely was obvious, however; "[c]verybody seemed to know that if you got a new engine of any kind, you would put it on a carriage."[44]

It is important to protect against the issuance of obvious patents that may confer market power and unjustifiably raise costs. Requiring concrete suggestions beyond those actually needed by a person with ordinary skill in the art,[45] and failing to give weight to suggestions implicit from the art as a whole and from the nature of the problem to be solved, is likely to result in patents on obvious inventions and is likely to be unnecessarily detrimental to competition. The Federal Circuit's most recent articulations of the suggestion test seem to signal greater appreciation of these issues and would better facilitate implementation of the test in ways sensitive to competitive concerns.

Recommendation 4:

Provide Adequate Funding for the PTO.

Participants in the Hearings unanimously expressed the view that the PTO lacks the funding necessary to address issues of patent quality. Presidential patent review committees have long advocated more funding for the PTO to allow it to improve patent quality.[46] As recently as 2002, the Patent Public Advisory Committee stated that the PTO "faces a crisis in funding

[42] *Brown and Williamson Tobacco Corp. v. Philip Morris*, 229 F.3d 1120, 1124 (Fed. Cir. 2000) (emphasis added).

[43] *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 956 (Fed. Cir. 1997).

[44] Duffy 7/10 at 132-33.

[45] *Cf.* Barr 10/30 at 53-54 (arguing that current obviousness standards fail to reflect the skill of his company's engineers, who "every day" independently invent things that have been deemed nonobvious).

[46] *E.g.*, THE ADVISORY COMMISSION ON PATENT LAW REFORM, REPORT TO THE SECRETARY OF COMMERCE (Aug. 1992), *available at* http://world.std.com/obi/USG/Patents/overview; REPORT OF THE INDUSTRIAL SUBCOMM. FOR PATENT AND INFORMATION POLICY OF THE ADVISORY COMM. ON INDUSTRIAL INNOVATION, REPORT ON PATENT POLICY (1979).

that will seriously impact . . . the quality of . . . issued patents."[47] The FTC strongly recommends that the PTO receive funds sufficient to enable it to ensure quality patent review.

Recommendation 5:

Modify Certain PTO Rules and Implement Portions of the PTO's 21st Century Strategic Plan.

a. Amend PTO regulations to require that, upon the request of the examiner, applicants submit statements of relevance regarding their prior art references.

Some Hearings participants asserted that, far from holding back information, patent applicants tend to provide an examiner with numerous prior art citations, resulting in lots of "information," but little "knowledge."[48] The 2002 version of the PTO's 21st Century Strategic Plan proposed requiring applicants that cited more than 20 prior art references to provide statements to explain the relevance of references, but the PTO has now withdrawn that proposal.[49] The FTC's proposal is more modest than the PTO's original proposal; it would require relevance statements only when the examiner requests them. These statements could materially enhance examiners' ability to provide quality patent examinations by drawing more fully on the patent applicant's knowledge base to identify the most relevant portions of prior art references.

b. Encourage the use of examiner inquiries under Rule 105 to obtain more complete information, and reformulate Rule 105 to permit reasonable follow-up.

PTO Rule 105 permits examiners to request "such information as may be reasonably necessary to properly examine or treat the matter [under examination]."[50] The Commission recommends that the PTO make a concentrated effort to use examiner inquiries more often and more extensively. As one panelist emphasized, "to get better quality and shrink the amount of work," there is a need to seek more knowledge in the possession of applicants, who typically "know more about the technology than the examiner does, and [know] where you might find something that might be relevant."[51] To be fully effective, however, Rule 105 should be amended so that applicants who reply that they do not know the answer to the examiner's inquiry, or that the necessary information "is not readily available to the party or parties from which it was requested" are *not* accepted as a complete reply,[52] as they are now, but rather are treated as responses on which the examiner may follow up.

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[47] PATENT PUBLIC ADVISORY COMMITTEE, ANNUAL REPORT 6 (Nov. 29, 2002), *available at* http://www.uspto.gov/web/offices/com/advisory/acrobat/ppacannual12-05-02.pdf.

[48] *E.g.*, Kesan 10/25 at 60-61.

[49] United States Patent and Trademark Office 21st Century Strategic Plan, *Mandatory Information Disclosure Statements (IDS)*, P-09 at 3 (June 3, 2002). *See* The 21st Century Strategic Plan, *available at* www.uspto.gov/web/offices/com/strat21/index.htm.

[50] 37 C.F.R. § 1.105.

[51] Kushan 4/11 at 89.

[52] *See* 37 C.F.R. § 1.105.

c. ***Implement the PTO's recommendation in its 21st Century Strategic Plan that it expand its "second-pair-of-eyes" review to selected areas.***

Second-pair-of-eyes review allows the PTO quickly to flag issues that need further attention by the examiner or the examiner's supervisor. The PTO first used this method to improve the quality of business method patents, and it received good reviews from participants in the patent system. The Commission believes that expanding this program to fields with substantial economic importance, such as semiconductors, software, and biotechnology, as well as other new technologies as they emerge, could help to boost patent quality in areas where it will make the most difference.

d. ***Continue to implement the recognition that the PTO "forges a balance between the public's interest in intellectual property and each customer's interest in his/her patent and trademark."***[53]

The PTO functions as a steward of the public interest, not as a servant of patent applicants. The PTO must protect the public against the issuance of invalid patents that add unnecessary costs and may confer market power, just as it should issue valid patents to encourage invention, disclosure, and commercial development.

[53] United States Patent and Trademark Office, *FY2002 Corporate Plan* 28 (2001) (describing role of PTO Under Secretary and Director), *at* http://www.uspto.gov/web/offices/com/corpplan/fy2002/index.html.

Recommendation 6:

Consider Possible Harm to Competition – Along with Other Possible Benefits and Costs – Before Extending the Scope of Patentable Subject Matter.

Section 101 of the Patent Act states, "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent."[54] Despite this broad mandate, courts have long held certain types of inventions unpatentable. Traditional common law exceptions include phenomena of nature, abstract intellectual concepts, mental steps, mathematical algorithms with no substantial practical application, printed matter, and, for many years, business methods.

Over the past twenty-five years, however, the scope of patentable subject matter has expanded significantly. For example, the Supreme Court, through two landmark decisions in 1980, held that both man-made, living organisms and computer software constitute patentable subject matter pursuant to Section 101. In 1999, the Federal Circuit ruled that business methods can be patented. Some Hearings participants claimed that patents on computer software and business methods are not necessary to spur the invention, commercial development, or public disclosure of

[54] 35 U.S.C. § 101.

software or business methods.[55] Others disagreed. Some Hearings participants contended that software and business method patents can raise significant competitive concerns and deter innovation, especially because so much of the innovation in those fields builds incrementally on preceding work. This may raise the potential for thickets of patents to hinder, rather than accelerate, innovation and commercial development.

The constitutional intention that patents "promote the Progress of Science and useful Arts" should be taken into account in interpreting the scope of patentable subject matter under Section 101. Decisionmakers should ask whether granting patents on certain subject matter in fact will promote such progress or instead will hinder competition that can effectively spur innovation. Such consideration is consistent with the historical interpretation of patentable subject matter, which implicitly recognizes that granting patent protection to certain things, such as phenomena of nature and abstract intellectual concepts, would not advance the progress of science and the useful arts. For future issues, it will be highly desirable to consider possible harms to competition that spurs innovation – as well as other possible benefits and costs – before extending the scope of patentable subject matter.

III. Other Patent Laws and Procedures Also Raise Competitive Concerns.

[55] *See generally* Ch. 3. *See also* Robert M. Hunt, *You Can Patent That? Are Patents on Computer Programs and Business Methods Good for the Economy?*, Q1 BUSINESS REVIEW 5, 14 (2001).

In addition to questionable patents, other portions of the patent system raise competitive concerns. This section briefly describes each issue and the Commission's recommendation(s) to address it.

Recommendation 7:

Enact Legislation to Require Publication of All Patent Applications 18 Months After Filing.

Until relatively recently, patents were published only when issued; patent applications were not published. During the time that would pass between the filing of a patent application and the issuance of a patent, an applicant's competitor could have invested substantially in designing and developing a product and bringing it to market, only to learn, once the patent finally issued, that it was infringing a rival's patent and owed significant royalties. This scenario disrupts business planning, and can reduce incentives to innovate and discourage competition.

A relatively new statute requires that most patent applications – all except those filed only in the United States – be published 18 months after filing. Patent applicants are protected from copying of their inventions by statutory royalty rights, if the patent ultimately issues. This new procedure appears to have increased business certainty and promoted rational planning, as well as reduced the problem of unanticipated "submarine patents" used to hold up competitors for unanticipated royalties. For these reasons, Hearings participants advocated expanding the 18-month publication requirement to include patents filed only domestically, because such

patents may well have competitive significance. Protection from copying similar to that already available for other published applications should be extended to those filing domestic patent applications as well, and any necessary protections for independent inventors also should be considered in terms of their likely costs and benefits.

Recommendation 8:

Enact Legislation to Create Intervening or Prior User Rights to Protect Parties from Infringement Allegations That Rely on Certain Patent Claims First Introduced in a Continuing or Other Similar Application.

After publication of its patent application, an applicant may continue to amend its claims. Through this claim amendment process, a patent that states broader claims than those published at 18 months can still emerge. If the applicant uses procedures such as continuing applications to extend the period of patent prosecution, the potential for anticompetitive hold up increases. Indeed, several panelists asserted that some applicants keep continuing applications pending for extended periods, monitor developments in the relevant market, and then modify their claims to ensnare competitors' products after those competitors have sunk significant costs in their products. Patent reform efforts have long focused on how to remedy opportunistic broadening of claims to capture competitors' products.

Legitimate reasons exist to amend claims and use continuing applications. Any proposed remedy for the opportunistic broadening of claims should also protect such legitimate uses. Creating intervening or prior use rights would most directly achieve this balance; it would cure potential competitive problems without interfering with legitimate needs for continuations. Such rights should shelter inventors and users that infringe a patent only because of claim amendments following a continuation or other similar application,[56] provided that the sheltered products or processes are developed or used (or the subject of substantial preparation for use) before the amended claims are published.

Recommendation 9:

Enact Legislation to Require, As a Predicate for Liability for Willful Infringement, Either Actual, Written Notice of Infringement from the Patentee, or Deliberate Copying of the Patentee's Invention, Knowing It to Be Patented.

A court may award up to three times the amount of damages for a defendant's willful infringement of a patent – that is, the defendant knew about and infringed the patent without a reasonable basis for doing so. Some Hearings participants explained that they do not read their competitors' patents out of concern for such potential treble damage liability. Failure to read competitors' patents can jeopardize plans for a noninfringing business or research strategy, encourage wasteful duplication of effort, delay follow-on innovation that could

[56] *See infra* Ch. 4(II)(C)(1) for a description of the types of filings that should be covered.

derive from patent disclosures, and discourage the development of competition.

It is troubling that some businesses refrain from reading their competitors' patents because they fear the imposition of treble damages for willful infringement. Nonetheless, infringers must not be allowed to profit from knowingly and deliberately using another's patented invention due to a low likelihood that the patent holder can afford to bring suit or obtain substantial damages. The FTC's recommendation would permit firms to read patents for their disclosure value and to survey the patent landscape to assess potential infringement issues, yet retain a viable willfulness doctrine that protects both wronged patentees and competition.

Recommendation 10:

Expand Consideration of Economic Learning and Competition Policy Concerns in Patent Law Decisionmaking.

The Supreme Court has made clear in several decisions that there is room for policy-oriented interpretation of the patent laws.[57] Indeed, to find the proper balance between patent and competition law, such policy-oriented interpretations are essential. Over the past twenty-five years, the incorporation of economic thinking into antitrust has provided significant insights that have substantially improved the development of antitrust law and competition policy. The Federal Circuit and the PTO may also benefit from much greater consideration and incorporation of economic insights in their decisionmaking.

IV. The FTC Will Pursue Steps to Increase Communication between Antitrust Agencies and Patent Institutions.

Many Hearings participants expressed concern that the patent and competition communities appear to exist in separate worlds, interacting infrequently at best. Patent practitioners and scholars further expressed concern that patent institutions do not always fully understand or accommodate economic learning or competition concerns. Increased interaction appears desirable to foster better understanding and communication between the patent and competition communities.

The FTC wishes to do its part to improve communication between the competition and patent communities. Accordingly, the FTC will pursue the steps listed below.

A. The FTC Will Increase its Competition Advocacy Role through Filing Amicus Briefs in Appropriate Circumstances.

The Commission will renew its commitment to the filing of amicus briefs in important patent cases that can affect competition, as well as in cases at the intersection of patent and antitrust law. When such cases have high stakes for the public, the Commission can serve the public interest by filing amicus briefs to present its perspectives regarding the implications of certain issues for consumer welfare.

[57] *See, e.g.*, *supra* notes 10-12; *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

B. In Appropriate Circumstances, the FTC Will Ask the PTO Director to Reexamine Questionable Patents that Raise Competitive Concerns.

A collective action problem may frustrate business challenges to questionable patents. Instead of challenging a patent's validity, many firms may simply license it, because no single firm has the incentive to finance an expensive legal challenge that would benefit all of the affected firms, not just the challenger. An enforcement agency, however, can consider the cost of a questionable patent to an entire industry and to consumers and can solve this coordination problem. In appropriately narrow circumstances, the FTC will do so.

C. The FTC Will Encourage Increased Communication between Patent Institutions and the Antitrust Agencies.

One means of improving interagency communication would be the establishment of a Liaison Panel between the FTC and the DOJ's Antitrust Division (collectively, the Antitrust Agencies) and the PTO. Such a panel could function as a practical, policy-oriented group designed to permit the exchange of views on important issues as they arise. Another means would be to establish an Office of Competition Advocacy within the PTO. Such an office could, when appropriate, advise PTO policymakers about the likely competitive impact and economic consequences of policy decisions. A final means would be to request that Congress amend the membership categories of the Patent Public Advisory Committee ("P-PAC") to include competition experts and economists.

V. Conclusion

Both patents and competition make significant contributions to innovation, consumer welfare, and our nation's prosperity. We recognize the importance of the patent system; the recommendations in this Report are designed to increase the likelihood that the valid patents are issued and upheld. There is broad consensus on the significant role that these patents can play to spur innovation and to encourage the disclosure and commercial development of inventions.

The importance of competition as a spur to innovation also should be recognized. More patents in more industries and with greater breadth are not always the best ways to maximize consumer welfare. A questionable patent can raise costs and prevent competition and innovation that otherwise would benefit consumers. The FTC looks forward to working closely with the PTO and other patent organizations to increase communication and include all parties in discussion and implementation of the FTC's recommendations.

Executive Summary

Since its creation more than 200 years ago, the U.S. patent system has played an important role in stimulating technological innovation by providing legal protection to inventions of every description and by disseminating useful technical information about them. With the growing importance of technology to the nation's well-being, patents are playing an even more prominent role in the economy. There are many indications that firms of all sizes as well as universities and public institutions are ascribing greater value to patents and are willing to pay higher costs to acquire, exercise, and defend them.

Throughout its history the patent system has had to adapt to evolving conditions, and it continues to demonstrate flexibility and responsiveness today. Since 1980 a series of judicial, legislative, administrative, and diplomatic actions have extended patenting to new technology (biotechnology) and to technologies previously without or subject to other forms of intellectual property protection (software), encouraged the emergence of new players (universities and public research institutions), strengthened the position of patent holders vis-à-vis alleged infringers domestically and internationally, relaxed antitrust constraints on the use of patents, and extended the reach of patenting upstream from commercial products to scientific research tools, materials, and discoveries.

Continuing high rates of innovation suggest that the patent system is working well and does not require fundamental changes. We generally agree with that conclusion, but it is clear that both economic and legal changes are putting new strains on the system. Patents are being more actively sought and vigorously enforced. The sheer volume of applications to the U.S. Patent and Trademark Office—more than 300,000 a year—threatens to overwhelm the patent examination corps, degrading the quality of their work or creating a huge backlog of

pending cases, or both. The costs of acquiring patents, promoting or securing licenses to patented technology, and defending against infringement allegations in court are rising rapidly. The benefits of patents in stimulating innovation appear to be highly variable across technologies and industries, but there has been little systematic investigation of the differences. In some cases patenting appears to have departed from its traditional role, as firms build large portfolios to gain access to others' technologies and reduce their vulnerability to litigation.

In light of these strains, now is an opportune time to examine the system's performance and consider how it can continue to reinvent itself. In spite of its pervasive influence, patent policy for the last 50 years has been the preserve of practicing attorneys, judges, patent office administrators, and legally trained legislators. The National Academies believe that patent policy will benefit from the additional insights of economists, scientists, and engineers in different disciplines, inventors, business managers, and legal scholars, and they appointed our committee to reflect that diversity of expertise.

We in turn benefited from the insights and data of nine groups of scholars supported by the National Research Council's Board on Science, Technology, and Economic Policy (STEP) to conduct a series of policy-related empirical studies. These are collected in this report's companion volume, *Patents in the Knowledge-Based Economy.* This work is part of a growing body of economic and legal research since 1980. Still, it is quite limited, and the range of industries examined in any detail is quite narrow. We do not know whether the benefits of more and "stronger" patents extend very far beyond a few manufacturing industries, such as pharmaceuticals, chemicals, and medical devices. It is even less clear that patents induce additional research and development investment in the service industries and service functions of the manufacturing economy. One obvious conclusion of our work is that we need a much more detailed understanding of how the patent system affects innovation in various sectors. But even without additional study we can identify areas of strain, inefficiency, excessive cost on the one hand and inadequate resources on the other hand that need to be addressed now.

CRITERIA FOR EVALUATING THE PATENT SYSTEM

In circumstances that at this stage defy a comprehensive evaluation of the patent system's impact on innovation, we identify seven performance criteria that are widely thought to be important if not necessary conditions for innovation and that are in some degree measurable.

First Criterion: ***The patent system should accommodate new technologies.*** The U.S. patent system has excelled at adapting to change because it is a unitary system with few *a priori* exclusions. The initiative to extend patenting to new areas lies in the first instance with inventors and commercial developers rather

than legal authorities, and the system, while formally neutral, has features that allow for somewhat different treatment of different technologies.

The incorporation of emerging technologies is not always seamless and rapid; indeed, it often generates considerable controversy. Moreover, case law recognizes limits to patenting, confining patents to inventions that can be expressed as products or methods and excluding patents on abstract ideas and phenomena of nature. Some, although not all, members of the committee are concerned that recent fairly abstract patents cross this indistinct line and have unwisely limited public access to ideas and techniques that are important to basic scientific research.

Second Criterion: ***The system should reward only those inventions that meet the statutory tests of novelty and utility, that would not at the time they were made be obvious to people skilled in the respective technologies, and that are adequately described.*** Over the past decade the quality of issued patents has come under frequent sharp attack, as it sometimes has in the past. Some critics have suggested that the standards of patentability—especially the non-obviousness standard—have become too lax as a result of court decisions. Other observers fault the performance of the U.S. Patent and Trademark Office (USPTO) in examining patent applications, variously attributing the alleged deterioration to inadequate time for examiners to do their work, lack of access to prior art information, or the qualifications of the corps of examiners.

The claim that quality has deteriorated in a broad and systematic way could be, but has not been, empirically tested. Therefore, conclusions must remain tentative. There are nevertheless several reasons to suspect that more issued patents are substandard, particularly in technologies newly subject to patenting. One reason to believe that quality has suffered, even before taking examiner qualifications and experience into account, is that in recent years the number of patent examiners has not kept pace with the increase in workload represented by the escalating number and growing complexity of applications. Second, according to recent estimates taking into account patent continuations, overall patent approval rates appear to be higher than officially reported, and at least in the past few years have been higher than in the European and Japanese patent offices. Third, changes in the treatment of genomic and business method applications, introduced as a result of criticisms of the quality of patents being issued, has reduced or at least slowed down the number of patent grants in those fields. And fourth, there might have been some dilution of the application of the non-obviousness standard in biotechnology and some limitations on its proper application to business methods patent applications. Although quality appears to be more problematic in rapidly moving areas of technology newly subject to patenting and is perhaps corrected over time, the cost of waiting for an evolutionary process to run its course may be too high when new technologies attract the level of investment exhibited by the Internet and biotechnology.

Third Criterion: ***The patent system should serve its second function of disseminating technical information.*** In the United States there are many channels of scientific interaction and technical communication, and the patent system contributes more than does the alternative of maintaining technical advances as trade secrets. There are, nonetheless, features peculiar to the U.S. patent system that inhibit information dissemination. One is the exclusion of about 10 percent of U.S. patent applications from publication, although universal publication 18 months after filing has been an international norm since 1994. A second U.S. idiosyncrasy is the legal doctrine of willful infringement, which can require an infringer to pay triple damages if it can be demonstrated that the infringer was aware of the patent before the infringement. Some observers believe that this deters an inventor from looking at the patents of possible competitors, because knowledge of the patent could later make the inventor subject to triple damages if there were an infringement case. This undermines one of the principal purposes of the patent system—to make others aware of innovations that could help stimulate further innovation.

Fourth Criterion: ***Administrative and judicial decisions entailed in the patent system should be timely, and the costs associated with them should be reasonable and proportionate.*** The elapsed time between the filing of a patent application and the patent examiner's first action on it and the time between filing and final disposition are lengthening, particularly in new technologies, although resolution takes longer in other countries than in the United States. By the same token, it takes an inordinately long time to resolve questions of patent validity in the courts, and the cost of the proceeding is escalating. The burden of costs and uncertainties, especially those entailed in challenging and defending patents, falls disproportionately on smaller, less experienced firms.

Fifth Criterion: ***Access to patented technologies is important in research and in the development of cumulative technologies, where one advance builds upon one or several previous advances.*** Faced with anecdotes and conjectures about restrictions on researchers, particularly in biotechnology, the committee initiated a modest, interview-based survey of diverse participants in the field to determine whether patent thickets were emerging or access to foundational discoveries was restricted. The results suggest that intellectual property in biotechnology is being managed relatively successfully. The associated costs are somewhat higher and research can sometimes be slowed, but it is rarely blocked altogether. There are, however, occasional cases of restricted access to foundational discoveries and to some diagnostic genetic tests. Universities have traditionally operated under an unwritten assumption that they would not be sued by patent holders for violating patents in the course of precommercial university research, but a ruling in 2002 by the U.S. Court of Appeals for the Federal Circuit made it clear that a university is not legally protected from patent infringement

liability. It remains to be seen whether this will change the behavior of patent holders toward university research, but universities are at greater risk.

Sixth Criterion: ***Greater integration of or reciprocity among the three major patent systems would reduce public and private transaction costs, facilitating trade, investment, and innovation.*** 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. These include differences with respect to assigning patent application priority, the requirement to disclose a technology's best implementation to qualify for a patent, the period, if any, allowed between publication of an invention and submission of a patent application, and whether all patent applications are published after 18 months.

Seventh Criterion: ***There should be a level field, with intellectual property rights holders who are similarly situated (e.g., state and private institutions performing research) enjoying the same benefits while being subject to the same obligations.*** In 1999 the Supreme Court struck down a law that denied a state's ability under the Eleventh Amendment to the Constitution to claim immunity against charges of infringing a patent or other intellectual property. Under the ruling a state institution such as a public university holding a patent could be in the position of asserting its patent rights against an infringer while successfully barring a patent holder from recovering damages for the university's infringement of a patent although the state institution might be enjoined from further infringement. A private university enjoys no protection from infringement suits. Although it is too soon to know what the effects of the Supreme Court decision will be, one possibility is that the disparity could influence decisions on where research is done.

RECOMMENDATIONS TO IMPROVE THE PATENT SYSTEM

The committee supports seven steps to ensure the vitality and improve the functioning of the patent system:

1. Preserve an open-ended, unitary, flexible patent system. The system should remain open to new technologies, and the features that allow somewhat different treatment of different technologies should be preserved without formalizing different standards, for example, in statutes that would be exceedingly difficult to draft appropriately, difficult to change if found to be antiquated or inappropriate, and at odds with U.S. international commitments. Among the tailoring mechanisms that should be fully exploited is the USPTO's development of examination guidelines for new or newly patented technologies, as has been done for computer programs, superconductivity, and genetic inventions. In

developing such guidelines the office should seek advice from a wide variety of sources and maintain a public record of the submissions, and the results should be part of the record of any appeal to a court so that they can inform judicial decisions.

This information could be of particular value to the Court of Appeals for the Federal Circuit, which is in most instances the final arbiter of patent law. Further, in order for the judges to keep themselves well informed about relevant legal and economic scholarship, the court should encourage the submission of amicus briefs and arrange for temporary exchanges of members with other courts. Appointments to the Federal Circuit should include people familiar with innovation from a variety of perspectives, including management, finance, and economic history, as well as nonpatent areas of law that could have an effect on innovation.

2. Reinvigorate the non-obviousness standard. The requirement that to qualify for a patent an invention cannot be obvious to a person of ordinary skill in the art should be assiduously observed. In an area such as business methods, where the common general knowledge of practitioners is not fully described in published literature likely to be consulted by patent examiners, another method of determining the state of knowledge needs to be employed. Given that patent applications are examined *ex parte* between the applicant and the examiner, it would be difficult to bring in other expert opinions at that stage. Nevertheless, the Open Review procedure described below provides a means of obtaining expert participation if a patent is challenged.

Gene sequence patents present a particular problem because of a Federal Circuit ruling whose practical effect was to make it difficult to make a case of obviousness against a biological macromolecule claimed by its structure. This is unwise in its own right and is also inconsistent with patent practice in other countries. The court should return to a standard that would not grant a patent for an innovation that any skilled colleague would also have tried with a "reasonable expectation of success."

3. Institute an Open Review procedure. Congress should seriously consider legislation creating a procedure for third parties to challenge patents after their issuance in a proceeding before administrative patent judges of the USPTO. The grounds for a challenge could be any of the statutory standards—novelty, utility, non-obviousness, disclosure, or enablement—or even the case law proscription on patenting abstract ideas and natural phenomena. The time, cost, and other characteristics of this proceeding should make it an attractive alternative to litigation to resolve patent validity questions both for private disputants and for federal district courts. The courts could more productively focus their attention on patent infringement issues if they were able to refer validity questions to an Open Review proceeding.

4. Strengthen USPTO capabilities. To improve its performance the USPTO needs additional resources to hire and train additional examiners and fully implement a robust electronic processing capability. Further, the USPTO should create a strong multidisciplinary analytical capability to assess management practices and proposed changes, provide an early warning of new technologies being proposed for patenting, and conduct reliable, consistent, reputable quality reviews that address office-wide and individual examiner performance. The current USPTO budget is not adequate to accomplish these objectives, let alone to finance an efficient Open Review system.

5. Shield some research uses of patented inventions from liability for infringement. In light of the Federal Circuit's 2002 ruling that even non-commercial scientific research conducted in a university enjoys no protection from patent infringement liability and in view of the degree to which the academic research community especially has proceeded with their work in the belief that such an exception existed, there should be limited protection for some research uses of patented inventions. Congress should consider appropriate targeted legislation, but reaching agreement on how this should be done will take time. In the meantime the Office of Management and Budget and the federal government agencies sponsoring research should consider extending "authorization and consent" to those conducting federally supported research. This action would not limit the rights of the patent holder, but it would shift infringement liability to the government. It would have the additional benefit of putting federally sponsored research in state and private universities on the same legal footing without revising the recent Supreme Court's ruling shielding state universities from damage awards in patent infringement suits.

6. Modify or remove the subjective elements of litigation. Among the factors that increase the cost and decrease the predictability of patent infringement litigation are issues unique to U.S. patent jurisprudence that depend on the assessment of a party's state of mind at the time of the alleged infringement or the time of patent application. These include whether someone "willfully" infringed a patent, whether a patent application included the "best mode" for implementing an invention, and whether an inventor or patent attorney engaged in "inequitable conduct" by intentionally failing to disclose all prior art when applying for a patent. Investigating these questions requires time-consuming, expensive, and ultimately subjective pretrial discovery, a principal source of soaring litigation costs. The committee believes that significantly modifying or eliminating these rules would increase the predictability of patent dispute outcomes without substantially affecting the principles that these aspects of the enforcement system were meant to promote.

7. Reduce redundancies and inconsistencies among national patent systems. The United States, Europe, and Japan should further harmonize patent examination procedures and standards to reduce redundancy in search and examination and eventually achieve mutual recognition of results. Differences that need reconciling include application priority ("first-to-invent" versus "first-inventor-to-file"), the grace period for filing an application after publication, the "best mode" requirement of U.S. law, and the U.S. exception to the rule of publication of patent applications after 18 months. This objective should continue to be pursued on a trilateral or even bilateral basis if multilateral negotiations are not progressing.

In making these recommendations the committee is mindful that although the patent law is general, its effects vary across technologies, industries, and classes of inventors. There is a tendency in discourse on the patent system to identify problems and solutions to them from the perspective of one field, sector, or class. Although the committee did not attempt to deal with the specifics of every affected field, the diversity of our membership enabled it to consider each of the proposed changes from the perspective of very different sectors. Similarly, in our deliberations we examined closely the claims made to us that one class of American inventors—individuals and very small businesses—would be disadvantaged by certain changes in the patent system. Some of our recommendations—universal publication of applications, Open Review, and shifting to a first-inventor-to-file system—have in the past been vigorously opposed on those grounds. We conclude that the evidence for such claims is wanting and believe that our recommendations, on balance, would be as beneficial to small entities as to the economy at large.

LETTER FROM COALITION FOR PATENT FAIRNESS TO THE HONORABLE NANCY PELOSI, SPEAKER OF THE HOUSE, UNITED STATES HOUSE OF REPRESENTATIVES; AND THE HONORABLE JOHN BOEHNER, MINORITY LEADER, UNITED STATES HOUSE OF REPRESENTATIVES

February 5, 2007

The Honorable Nancy Pelosi
Speaker of the House
United States House of Representatives

The Honorable John Boehner
Minority Leader
United States House of Representatives

Dear Speaker Pelosi and Republican Leader Boehner:

The Coalition for Patent Fairness, an alliance of companies and associations in the technology, financial services, energy and chemical, manufacturing and media industries, urges you to make modernizing the U.S. patent system a top legislative priority for the 110th Congress. Enhancing the U.S. patent system is necessary in order to maintain our nation's competitive advantage and spur economic growth, investment, job creation, technological progress and innovation. Moreover, patent reform is an issue with strong bipartisan support that is ripe for action this year. Your work to re-balance, strengthen and enhance the current patent system will enable cutting-edge innovation to continue to drive the U.S. knowledge-based economy.

The need for patent reform is unquestionable. The last comprehensive revision of U.S. patent law took place in 1952, a time when typewriter correction fluid was new technology, markets were not global, and the networked devices on which our economy now relies were more science fiction than everyday reality. In the past year, editorial boards from the *Los Angeles Times* and *The Wall Street Journal* have urged Congress to restore balance to the patent system, which has come under increasing pressure as the technological revolution transforms our way of life and business. The U.S. Supreme Court has also begun to weigh in. It is past time for the patent system to catch up with the 21st century high-tech economy.

Today, U.S. economic growth is slowed by patent disputes that drain billions of dollars that would otherwise be invested in jobs, innovation, consumer savings and shareholder value – and at a critical time when China, India and other emerging economies are gaining momentum. At the same time, consumer access to innovative, new products is hampered by unnecessarily arcane and complex rules that force companies to hedge against the risks of innovation rather than optimize the benefits to consumers and society as a whole. All too often, the patent system today operates as a disincentive to creativity and innovation of the sort it used to foster.

The costs created by patent abuse are partially rooted in poor patent quality. Despite their hard work, patent examiners are being inundated with record numbers of patent applications. On top of that, outmoded procedures, insufficient training, and lack of resources conspire to degrade the quality of the patents being granted. We support efforts to improve patent quality by improving operations at the U.S. Patent and Trademark Office.

But those improvements alone will not re-balance the incentives to innovate or remove the many disincentives of the current system. Truly comprehensive reform is clearly required to provide the protections for consumers and strengthening of our patent system that are necessary. The Coalition for Patent Fairness supports common sense measures to modernize and bring balance to the patent system. Specifically, we believe reform efforts should ensure that damages are proportionate to the value of the

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component in question rather than the entire product, which can include thousands of patented components. We believe that "willful" treble damages should be assessed only where there is truly egregious conduct. In addition, companies should not be held liable in U.S. courts for worldwide damages from acts of infringement that are claimed to have occurred in other countries. Finally, the practice of opportunistic "forum shopping" should end, ensuring patent disputes are resolved in courts that have a reasonable connection to the underlying claim. All of these important changes were included in the bipartisan Patent Reform Act of 2006, S. 3818, introduced by Senators Hatch and Leahy last year and strongly supported by the Coalition.

We respectfully urge you to make passage of comprehensive patent reform a top legislative priority in 2007. Your leadership on the issue will benefit all Americans—from small business owners to independent inventors to consumers of innovative, new products.

The Coalition for Patent Fairness looks forward to continuing to work with you on these issues as the legislative process moves forward.

Adobe
Agilent Technologies, Inc
Apple
Applied Materials
Aruba Wireless Networks
Atheros Communications
Autodesk
Avaya
Avid
Broadcom Corporation
Business Software Alliance
CA, Inc.
Cadence Design Systems
Charter Communications, Inc.
Chevron Corporation
Ciena Corporation
Cisco Systems
Computer and Communications Industry Association
Computing Technology Industry Association
Comcast
Copernio Holding Company
Countrywide Financial Corporation
Dell
eBay
EMC Corporation
Electrolux North America
Financial Services Roundtable
Hewlett-Packard
Illinois IT Association
Information Technology Association of America
Information Technology Industry Council
Intel
Intuit
Juniper Networks
Lenovo
Lexmark International
MasterCard Worldwide
McAfee, Inc.
Micron Technology
Microsoft
Napersoft
National Semiconductor Corporation
NCR Corporation
Network Appliance, Inc.
OpenAir, Inc.
Oracle
Palm, Inc.
RealPage, Inc.
Red Hat
Research in Motion
Salesforce.com
SAP
Seagate Technology
Securities Industry and Financial Markets Association
ShowingTime
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Sonnet Technologies
Software & Information Industry Association
SPSS Inc.
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Sternhill Partners
Sun Microsystems, Inc.
Sybase, Inc.
Symantec
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UGS Corp.
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