Testimony of

Mr. Nathan P. Myhrvold

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Mr. Chairman and members of the Subcommittee, my name is Nathan Myhrvold. I am very pleased to share to my views as a scientist and inventor on the patent system with the Subcommittee. My personal history is relevant to my remarks today, so permit me to introduce myself.

Background

As long as I can remember, I have been fascinated with science and technology. I pursued science in school, earning a bachelor's degree in mathematics, and master's degree in geophysics and space physics, both from UCLA. I continued exploring other disciplines, getting another master's degree in mathematical economics and a PhD in mathematical physics from Princeton University. I would have finished school much earlier if I had focused on one topic, but I never met a kind of science I didn't like. This obsession with schooling might have consumed half my life, but for the fact that I started early, entering college at 14, and completing my PhD by age 23.

After Princeton, I was hired by Cambridge University in England, working directly for Professor Stephen Hawking. My research area was quantum field theory in curved space-time, perhaps one of the most obscure and esoteric scientific disciplines. At that point in my life, I would have told you that I'd be an academic researcher. But life has a way of throwing us curve balls. I took a three month leave of absence from working with Hawking to go to the San Francisco Bay Area to help some friends from graduate school on a software project. Before I knew it, I was caught up in entrepreneurial fever.

The year was 1984, and the software industry was still tiny. I became the CEO of Dynamical Systems, a software start-up with less than a dozen full-time employees. After two years of struggling to keep our heads above water, we were acquired by Microsoft. I spent the next 14 years as a Microsoft employee, reporting directly to Bill Gates as Microsoft's first Chief Technology Officer. I could scarcely believe that I went from esoteric theories in physics to what would become the largest software company in the world.

At Microsoft, I championed the development of new technology. Microsoft had zero patents and just two patent applications at the time I joined the company. I advocated increases in R&D spending, and patent filing, greatly increasing each of these. In 1991, I convinced the Microsoft board of directors to create Microsoft Research, the first major industrial research lab to be started in more than a generation. Laboratories like Bell Laboratories, GE Research Labs, Xerox PARC, and IBM Research have made a tremendous contribution to America's pre-eminence in science and technology. Unfortunately, these institutions were founded 30 to 100 years ago, and there aren't many recent examples. Very few of the new giants of technology have bothered to invest in research or create similar research organizations. Microsoft Research now employs over 700 researchers in seven laboratories, and is ranked as one of the leading research institutions in the world.

Invention - The Next Software

I retired from Microsoft in 2000, and founded Intellectual Ventures, a company dedicated to investing in invention. We have two lines of business. In one, we provide both business expertise and financing to inventors. The inventors receive funding and, in return, get a share of the profits from what they create. This is similar to venture capitalists funding entrepreneurs - the difference is that we seek to create great, new inventions, rather than new companies. Some of our inventors are full-time employees (including yours truly). Others work with us part-time and have day jobs as professors, or in their own small companies.

We file over 300 patents per year in highly technical disciplines such as solid state physics, computing, and medical devices. This rate should make us roughly the 25th largest inventing organization in America.

Our other line of business invests in existing inventions, similar to the way that private equity funds will invest in businesses. Creative inventors often come up with ideas that they are ill-equipped to commercialize. That's true regardless of whether the inventor is in a big company, a university or works independently on his or her own. We take a risk on these investments, and work hard to make them successful - just as private equity firms do - the difference is that we invest in inventions rather than companies.

In both of our businesses we have the same goal - provide capital, expertise and incentive to the invention process. That stimulates more invention - just as the existence of venture capital in Silicon Valley stimulated new companies. Invention is the fundamental foundation of America's innovation based economy. We live in a world where clever new ideas can be more valuable than any physical commodity.

When I first entered the software industry in 1984, the very idea of basing a business on software was novel. At the time, there was only one publicly traded software company . Virtually all software programmers worked for hardware companies. Software was considered a radical and unproven thing as the foundation for a business model. I know that seems bizarre from our vantage point today, but it really was the case.

People were uncomfortable with the idea that you could base a business on an intangible piece of intellectual property like software. You could get a hardware guy to admit that software was important - but only in the context of a "real" product - which meant hardware. How could you make a business based just on software? It didn't make sense. It also threatened the hardware companies - they viewed software as a component or piece part, not something that should be center stage.

An additional reason they were skeptical was the fear that people wouldn't respect copyright. This was a very real concern, and in the early days of the software industry there was widespread theft of software. The software industry mounted a two-pronged campaign. First, it educated people that this was wrong; popularizing the notion that misappropriation of software was "piracy." The industry made the argument that piracy was bad and buying software was good because it would lead to more features and better software. Second, it mounted a very aggressive litigation program to go after people that violated software copyrights. It was a classic combination of the carrot and the stick.

Today, we know that software can be an incredibly good business - in fact, it is much better business when you separate it from hardware. Most people in this country now appreciate the value of software, and know that piracy is ultimately a bad idea. The gamble that I made in 1984 to get into software paid off for me, and for thousands of others like me who built an incredible industry that is a tremendous asset to this country.

When I tell people that my company is based on invention, I get almost exactly the same reaction that I got about the software business in 1984. They're willing to admit that invention is good, and patents can be valuable. But surely, they say, it only makes sense in the context of a company with a "real" product. It's the same reaction hardware gave about software - invention is nice, but only as piece part, not on center stage.

Like the software case, I think that invention is actually a better business if you focus on it exclusively, rather than trying to do it in the context of a company with other goals. Most things in life can be done better if you focus and specialize on being very good at them, rather than treating them as a sideline. Invention has that attribute - the best inventors may not be the best businessmen, or the best product engineers.

Also like the software case, this vision is threatening to some people. The established order sees inventors as a piece of the value chain - but a very small piece. The idea of bringing inventors and their inventions to the forefront (and giving them a large piece of the action) is threatening. Companies that do not use patents in their own business model are suspicious of those that do.

In the long run, I believe that invention has the potential to become a huge industry in its own right. Invention has been around for a long time - just as software has been around for 30 years prior to the creation of a software industry. If I am right, it will be a tremendous asset to the US economy, and help keep us competitive as a nation.

Of course, I could be wrong about this. The only way to find out is to make a bold bet and try it out. That is what we are doing: betting that invention is the next software.

It's About Property and Culture

Like any other part of the free enterprise system, the patent system offers economic incentive by enabling and protecting private ownership. Simply put, the patent system enables inventions to be a part of capitalism.

The patent system is an enormously successful component of US competitiveness, and has played that role since the founding of the Republic. The system that encouraged and sustained great inventors like Thomas Edison, Alexander Graham Bell and the Wright brothers is a critical component of America's 21st Century goals to lead the world in computing, biotechnology, nanotechnology and dozens of other exciting fields.

Why then have we gathered here to talk about patent reform? And why are there such strong views on both sides of the issue?

It is a complex topic, but there are some simple principles that explain much of the patent reform debate. It's all about company culture and how companies use patents.

In some industries, patents are vital to the business model of the company - it is how they stay in business. This is true in industries like pharmaceuticals, biotechnology, medical devices and many others. In these industries the culture of patents is embedded deeply. While companies may argue (or even litigate) over a specific patent, they all respect the patent system because it is vital to them.

The "tech industry," by which I mean computer software and hardware, networking, ecommerce and semiconductors, has a very different cultural attitude toward patents. Simply put, for most tech companies, patents have never been important; they have not been a way to make money.

Instead, the path to riches in the tech world is to fiercely compete for dominant market share, making your products become a de-facto standard. The typical situation is that one or two companies own 90% or more of the market. This position of dominance - some would call it monopoly - is how big tech companies got big in the first place, and it is also why they remain some of the most profitable companies on earth.

There are interesting exceptions. Qualcomm in particular is a high tech company that deeply respects patents - because their business model is based on patents. This shouldn't be surprising - companies that are based on the value of a brand, are sensitive to brand issue. Companies that make money on patents are sensitive to patents. Software companies and media companies are highly sensitive to copyright law. Meanwhile, companies that never made a dime from patents generally do not respect them.

In the rough and tumble race to dominant market share, patents are, at best, a distraction. Most tech companies have made a deliberate decision to ignore the patent system. It works like this. The tech company will hire smart people and put them under huge pressure and lucrative incentives to create state of the art products. They send people to technical conferences, and encourage them to read scientific papers so they can learn the latest techniques. Yet, they do not allow them to read patents - not even patents by the same people whose research papers they use, or patents of the institution from which they hire employees. In most tech companies it is vehemently against company policy for engineers to read patents. This is based on a "see no evil, hear no evil" theory that it is better to feign ignorance than to find you're infringing. The do not check their products to see if they infringe anybody else's patents - a common practice in other industries, known as patent clearance. Nor do they have established programs to license outside patents on a proactive basis.

This R&D strategy is very effective because you don't spend any time worrying about other people's property rights. It inevitably leads to infringing many valid patents. It's the engineering equivalent of driving at high speed, with the accelerator pedal mashed to the floor, but not looking to see if there are other cars around.

There are several variations of this approach. Very young firms, such as most of the "dot com" Internet companies, were too busy scrambling for dominance. So in their early years they did not even bother to file any patents. Even today, most Internet companies have tiny patent portfolios. Their strategy is simple - "get big fast," own the market and, if there is a patent problem, sort it out later.

Older and larger tech firms have large portfolios of their own patents, which they use in what's called "defensive" use. Here's how it works. If a company builds a big enough portfolio of its own patents, then if somebody comes after them, it can counter sue using its patents against the challenger. It's like the theory of mutually assured destruction in nuclear warfare strategy. Sometimes it leads to a formal agreement between the companies, called a cross-license agreement, which is analogous to a treaty between countries. In other cases, it results in a strategic stalemate - neither company takes action against the other because they don't know where the suits and countersuits will lead.

"Defensive" use may sound like a benign use of patents, but, in reality, it is just another way to play corporate hardball in the pursuit of making lots of money. While the use of the patents in a suit is purely defensive, the infringement that precedes it isn't. Defensive use is another way to say: if you have enough patents, then you can steal any other product company's ideas with impunity. If they push back, you can threaten them with your "defensive" portfolio. A company with a strong defensive portfolio has little to worry about in lawsuits from its competitors. Often such a company will tell its engineers not to worry about using other people's patents. Go ahead and infringe because our defensive portfolio will buy us a compromise with the property owner.

The problem for defensive use companies is that this approach only works against an adversary that has a product, because it's the other guy's product that you target with your defensive portfolio. If the patent holder is a university, independent inventor or other entity without a product, then this approach does not work.

These diverging interests are behind the great schism in patent reform. Companies that see patents as their life blood are largely on one side. I'm the first to admit that I'm in this camp, along with other small inventors.

Companies that make deliberate decisions to infringe - or at least to take huge infringement risks - are on the other side. That includes a set of large and powerful tech companies. They know that they infringe thousands of valid patents. They may not know exactly which patents they infringe - but they know they have a problem. This gives them a powerful motive to attack the patent system, with a particular focus on the rights of small inventors who are immune to their defensive portfolios.

The situation is reminiscent of the battle to fence the American West in the 19th Century. Cattlemen wanted to drive their cattle across a frontier unfettered by fences; while farmers sought the sanctity of private property they could call their own.

The analogy is apt because the tech world was a lot like the Wild West when I started in 1984. New companies sprouted up to take advantage of technology trends. They built operating systems and databases and network routers - things that most people had never heard of. There was a pervasive Wild West mentality as brash teams of young men and women joined start ups hoping to strike it rich in what became a technological gold rush. They challenged the longstanding mainframe computer industry with the fervor of rebels fighting the "personal computer revolution." That Wild West attitude included roaming across the open range of ideas, with little thought to whose intellectual property they infringed.

At one point, things seemed to be calming down with the personal computer revolution, until a new gold strike was discovered. The Internet revolution promised even more impact, and even faster riches. So, once again, Silicon Valley was thrown headlong into a Wild West style gold rush.

It's long past the Wild West phase in the tech industry. Some of the brash young companies failed, but the survivors turned into multibillion dollar behemoths. The one-time revolutionaries are now the established giants. But they haven't lost the cultural heritage of their origin.

A culture of infringement was second nature during the heady Wild West gold rush days. Like the old cattlemen, they want to continue to drive their products across the property lines of people who play by the rules and disclose their inventions to the patent office.

This may seem like paranoid speculation on my part, but it is a history that witness and participated in. I used to be a senior executive for a large technology company and, in that role, discussed this strategy with many other firms in earlier rounds of patent reform in the late 1990s.

Patent Litigation in Perspective

It's hard to come to Capitol Hill and say "I'm one of the wealthiest companies on earth. I made a deliberate decision to risk infringing some valid patents held by honorable inventors, and now I don't want to pay them." So, that's not how they put it.

The first step is to exaggerate the size of the problem. Despite what you may have heard, there is no "crisis" or explosion in patent litigation. The number of new patent lawsuits filed actually declined between 2004 and 2005. If you look back over the last 20 years, the number of filings has grown, but so have all forms of lawsuits. Over the last 20 years, patent lawsuits have consistently been in last place among the three forms of intellectual property lawsuits - trademark, copyright and patent.

Patent litigation has also grown more slowly than the number of patents. As a result, the likelihood of a patent issued today being involved in litigation is smaller today than at any point since 1995.

Filing a lawsuit is just the start of a multi-year process. In the vast majority of cases - 96.2% in 2005 - the cases settle before reaching trial. Filing a patent suit is, as a practical matter, a tool that companies use in negotiating a settlement. In fact, 30.8% of suits that terminated in 2005 did so without the court taking any action whatsoever - merely the act of filing a lawsuit prompted settlement. In the end, just 3.8% of the suits that terminated in 2005 did so in court.

The number of lawsuits that actually reach trial is thus a very small number, and one which is relatively consistent over the years. In 1998, just 104 patent lawsuits went to trial in the United States. In 2004, it was 96 lawsuits, and, in 2005, it was 107. These numbers are hardly indicative of a crisis.

Some people may protest that there are still "too many" patent lawsuits. Which begs the question - what is the "right" number of lawsuits? If there were zero patent lawsuits then it would mean that the patent system probably had no value! Rights that are not worth squabbling over probably aren't worth much at all. I don't pretend to have a figure for the correct number of patent lawsuits - but neither do the people who say there are too many.

If the number of lawsuits is down, what about the amount of money being paid. Isn't that out of control?

Although there are some high profile settlements, they are rare. Even the largest companies are not stung very often. Meanwhile their revenues and profits are enormous also. How do the dollars tally up?

We did a study of four leading high tech companies (all of them active in patent reform), and looked at publicly available SEC reports to see what they spent in patent lawsuit settlements from 1993 through 2005. In total, these companies paid $3.7 billion in patent settlements over that period. However, they also raked in an astounding $1.4 trillion dollars in revenue. This puts the cost of patent lawsuits and settlements at just 0.26% of revenue. That's an average over the companies, but it is fairly consistent. The company with the highest number of lawsuits was still only 0.51% of revenues. $3.7 billion is a lot of money, and that's why these companies are complaining, but when you put it in perspective, paying between a quarter and a half a percent of revenue to patent holders is hardly a crisis.

The decision to risk infringement looks like it is working pretty well. All that revenue and just 0.26% in cost. The strategy of "catch me if you can" works well if you are rarely caught. The $3.7 billion number is large enough to

motivate complaining on Capitol Hill, but on a percentage basis the strategy is working just fine. The financial incentive to infringe is massive.

One could criticize these numbers by saying that there are many small settlements that are not reported to the SEC. In addition, there are legal costs involved. Nevertheless, the total number can't be too different. Sarbanes-Oxley and other accounting rules prohibit companies from underreporting losses like this unless they are truly "not material," both individually and in aggregate. If there are a lot of large secret patent losses out there -- either individually or in aggregate -- then they have been concealed from the SEC, and somebody should point them out.

It's impossible to talk about patent litigation without tripping over the colorful term "patent trolls." Part of the strategy of complaining about patents is to blame the "problem" on this sinister sounding group. The trouble is, nobody knows what a "troll" is. The definitions vary, and you can't seem to pin anybody down. For example, trolls are usually described as litigious. My company is sometimes called a "troll," yet we have never filed a patent lawsuit. If I'm a troll, I must be the dumbest and least effective one of all!

If the term "patent troll" has any meaning at all, it should be reserved for people who manipulate or abuse the intent of the patent system. However, the intent isn't to make the world safe for tech monopolies. The intent is to reward genuine inventors with the incentive of private property. It's perfectly proper for every inventor to want to come up with the next big thing and to be able to get a return on their investment of time and resources. That's what the system is supposed to be about: providing real incentives for disclosure of one's intellectual creations. There is no requirement to build a product, because the patent system protects inventions, not products.

There are some genuine cases where abuse of the system occurs, just as there are people who manipulate or abuse every other legal system. Real patent law abuse is not common, yet the patent reform propaganda machine makes it sound rampant, yet there is absolutely no proof of this.

Since true abusers are hard to find, the patent reform lobby has focused, instead, on patent holders that don't make products, as if that is a problem. Yet even here, the numbers are exaggerated. Reviewing patent litigation data, we've found that about 2% of all patent lawsuits are due to companies that license patents rather than create products, and half of those suits are due to just one litigious company. It is important to note that the vast majority of patent holders who don't make products are perfectly honorable. Also, such patent holders have long been a part of America's engine of innovation.

So why is there so much talk about "trolls" if they are so uncommon? When confronted by a puzzle like this, a good bet is to follow the money. If you look at where the big tech companies pay patent lawsuits and settlements it turns out that the vast majority goes to perfectly upstanding companies and institutions. This includes universities, small companies that were genuine innovators, or companies like AT&T, Lucent, Digital Equipment, Wang, and Unisys. A common pattern is that a genuine innovator will fall on hard times and need cash. This might be a troubled start up, or a former industry giant, but either way they need the money. So they seek to get paid for inventions they own, which other companies have appropriated. This isn't an "attack of the trolls" - it's capitalism in action.

Here's the rub. Legitimate patent holders, like those that collect most of the money from big tech companies, would have their patent rights severely weakened by many of patent reform proposals. It's a clever bait-and-switch maneuver to blame the dastardly "trolls" as way to sneak in changes that hurt the legitimate patent holders.

The campaign to label patent reform as an issue with patent "trolls" is clever because it seeks to blame a set of bad guys, and make this seem like a sort of tort reform. The tort reform message resonates well in Congress, so it is a good way to frame the issue. But the reality is that the patent reform dispute is not about bad actors misusing the court system - it's about taking property rights away from inventors.

Indeed, almost all of the things that the "trolls" are accused of are also done by the same large tech companies doing the "troll" name calling. As one example, some people are upset that patents are bought and sold. Yet every other asset in capitalism is bought and sold - why should patents be any different? In the case of software companies, their whole life is about selling software - an intangible intellectual property asset. Yet many software companies are fiercely anti-patent and are quick to use the "troll" label. How could be it wrong to buy and sell patents, but OK to buy

and sell copyrights? When Hollywood studios buy and sell portfolios of feature films, nobody seems to mind. What is so awful about patents changing hands?

Irrespective of the name calling, every major tech company behind patent reform buys patents. They also do the other things that trolls are accused of - they file patent lawsuits on patents in areas where they don't have products, they extract payment using techniques as hard knuckled as anybody else.

One irony about the "troll" debate is that all the blame seems to land on one of the parties. It's like saying that the divorce rate is too high, and just blaming one of the spouses. As the old saying goes "it takes two to tango." The fact is that many of the large high tech companies have been convicted in court time and time again of patent infringement, or have paid huge settlements to avoid conviction in cases they know they'll lose. Abuses of the system by these convicted serial infringers are at least as big a source of litigation as the plaintiffs filing the suits.

These convicted serial infringers should be held responsible for their patent lawsuits. If a tech company infringes a patent and refuses to deal with the patent holder, so that he or she is forced to take legal action, who's to blame? Blaming the patent holder amounts to blaming the victim.

A typical example is a leading Silicon Valley tech company which between 1993 and 2005 has been involved in 41 patent disputes. In 26 cases, the dispute started when they were sued for infringement - just over 2 cases per year. The majority of these settled for results too small for them to record with the SEC, but, in four cases the company paid a multi-hundred million dollar settlement. Mostly this company wisely avoids trial by settling, but not always. The company has been convicted of infringement, and the conviction was upheld on appeal.

So, this company has been sued twice a year for infringement. It has been found guilty of infringement. About every three years, it has had to pay a gigantic settlement to get out of an infringement suit. I'd say it's pretty clear that these folks have an infringement problem - this company is a committed serial infringer.

This isn't at all surprising since it has openly stated that it does not check products for patent infringement. It does not they allow its engineers to read other people's patents. Instead, it is a big proponent of "defensive" use of patents, and believe that they defensive portfolio is the answer.

In addition, this company has initiated patent lawsuits as the plaintiff, suing other companies 13 times, or about once year, fully half as often as it has been sued. So besides being a serial infringer, the company is a highly litigious plaintiff!

Yet, the company is also very quick to label others as "trolls" and is one of the leading proponents of patent reform. Well, of course, the company is in favor of it! It's like asking convicted criminals to opine on shorter sentences.

This isn't an isolated instance - many of the large tech companies active in patent reform have similar records. If Congress is going to take up patent reform to solve the "troll" problem, it is only fair that the serial infringer problem be considered as well.

The focus on trolls, like the illusion of a "crisis" in patent litigation, is a red herring that may distract Congress from the real task of patent reform. The issue shouldn't be about demonizing one group of patent holders. Instead, Congress should focus patent reform on creating a fair and balanced set of rules for all players.

Reexaminations & Post-Grant Review

This brings us to the important issue of post-grant review. I have no sympathy with invalid patents. The strength of the patent system is based on having strong and valid patents. If a mistake is made and a patent is granted that shouldn't have been, then the system should correct it with post-grant review.

In general, the patent office does a reasonably good job of reviewing patents. Most bad patents are stopped by the examiner in the patent office. Claims that there are tons of bad patents are completely unproven. No objective study has shown that there is a systematic problem with bad or invalid patents being issued.

Instead, critics of the patent office like to showcase a few silly patents - like a patent granted on a peanut butter and jelly sandwich - to ridicule the system. It sounds like the height of folly - how could the USPTO grant such a thing? Once you dig into the fine print, the real story comes out. The patent isn't really on PB&J in a general sense - it is about a specific manufacturing process for a packaged food product. It wasn't created by a "troll" - the patent was owned by J. M. Smucker Co., a major food company that used the process covered in this patent in a very successful product called Uncrustables which generates annual sales of over $60 million per year. Given these additional facts, it doesn't sound quite so silly.

The real story of the PB&J patent actually shows how well the current system works. Smucker sent a cease and desist letter to Albie's Foods, a small Michigan food service company. Albie's won a government contract for supplying PB&J sandwiches to an Oregon school lunch program, which brought them to Smucker's attention. Albie's filed an ex parte reexamination, which resulted in rejecting all claims of the patent. Smucker appealed to the US Court of Appeal for the Federal Circuit which upheld the rejection. So, far from showing that the patent system is broken, examples like this show the fundamental strength of the patent system and how well it works.

If there were lots of bad patents, as some people claim, then it should be easy to substantiate it. As one example, we should find that the existing re-examination procedures would find these bad patents. Yet, this is not the case. Only about 10% of the reexaminations completely eliminate a patent. In another 26% the patent comes through unscathed with no changes. The balance at 64% has some claims rejected or modified. These results show that patents in reexamination get serious attention. The majority of reexamined patents wind up modified in some way. But only a small number are totally thrown out. And it is important to note that the PTO takes reexamination very seriously. About a year ago the PTO created a special unit to perform reexaminations.

Similarly, statistics of patent litigation do not bear out any systematic weakness in the patent system. The pre-trial settlement rate for patent lawsuits is about 96%, which is comparable to the rate for most other business litigation. The University of Houston Law School compiled statistics for patent litigation results from 2000 through 2005 and found that on issues of patent validity, the patent holder won at trial on validity issues 58% of the time, the accused infringer prevailed 42% of the time. If there were tons of bad patents then surely the trial results would be overwhelmingly against the patent holder. But this is not the case.

So where are all these bad patents? Evidently, they aren't in the reexamination proceedings, and they aren't in the courts either. There probably are some bad patents out there - no system is perfect - but, if so, they don't seem to be hurting us all that much. A weak or questionable patent is unlikely to be the basis for a lawsuit for the very reason that it is weak.

The reason we hear about problems with patent quality goes back to the same cultural issues behind patent reform. It is awkward to complain that you don't want to pay for valid high quality patents. It's equally awkward to explain why you never check if you infringe other people's patents. So the people in this position rationalize their misbehavior by arguing that there are "lots of bad patents out there." Where is the evidence?

One reason for the trial statistics are as good as they are is success of the two forms of reexamination procedures that are used today. Ex parte reexamination was instituted by Congress in 1980. It is the cheapest, simplest and most widely used way to challenge a US patent after it issues.

Ex parte reexamination can be instituted by anyone, and done so anonymously. It may also be initiated by the Director. It is cheap and simple - you submit the prior art, and a legal brief explaining why the provided art invalidates the patent. This simple and inexpensive procedure is relatively popular. There were 524 ex parte reexaminations filed in 2005 - which is a rate that is five times the number of patent lawsuits that went to trial that year. Ex parte reexaminations handle more far more patents than the courts do, and are thus a highly successful form of post-grant review.

A key reason is that once the patent office accepts a reexamination request, it will proceed. The acceptance rate is 96%. Coincidentally, that is the same as the number of patent lawsuits that settle before trial. So, the big difference between reexamination and lawsuits is that 96% of reexaminations actually occur and the patent is judged, whereas it's just the opposite for lawsuits, 96% of which never wind up judging the patents. That's why ex parte reexamination winds up processing five times the annual caseload of the court system.

A primary criticism of ex parte reexamination is also one of its benefits - namely that it is a simple and cheap procedure. The party opposing the patent holder submits the prior art with a complete brief, but does not participate in further arguing the case. The opportunity to argue further greatly increases the cost to the challenger, but may allow them to make a better case. As we shall see, cost and simplicity are not the only factors in post grant review.

Inter partes reexaminations are a more recent creation, originating in the AIPA of 1999, in part to provide a means for the challenger to participate. The original act did not fully implement the system however - it was substantially modified in 2002 to fix flaws in the original statute. Inter partes reexaminations are effectively only three years old. In addition, Inter partes has a rather extreme limitation that they are only applicable to patent applications filed on or after November 29, 1999. Since the reexamination cannot occur until the patents issue, which takes on average 30 months, this means that the very first patents to issue would be in 2001. 2002 was the first full year when patents were available for inter partes challenge. The vast majority of all active patents are as yet unavailable for inter partes. Given these circumstances it is amazing that there are so many inter partes challenges. Clearly, then the number of patents even eligible for inter partes reexamination was very small at the beginning. How could the patent office have projected 400 per year?

The patent bar is conservative and it takes time to develop strategies for a new option like inter partes reexamination. Nevertheless, inter partes reexaminations have taken off. There were 21 filed in 2003, 27 in 2004 and most recently 59 filed in 2005. The rate of growth is very fast - indeed, if there is an "explosion" of anything involving patent litigation, it is the rapid growth of inter partes reexaminations, which more than doubled in the last year. The total number of inter partes reexaminations is still small compared to ex parte, but that is largely because ex parte reexamination has a 22 year head start, and thus applies to the entire base of patents - rather than just the last couple years worth.

The biggest challenge for the growth of inter partes reexamination is that it competes with both ex parte reexamination and trial courts. The range of conditions under which somebody would choose inter partes over the other three are real, and growing. However, it is only reasonable to expect that more options and choices means smaller market share for each one.

A more important comparison is that inter partes reexaminations already have 55% of annual caseload of patent lawsuits that go to trial. That is a very substantial percentage, and is likely already has substantial impact on the case load in Federal court. The clear trend is that inter partes reexaminations will find its niche and become an important part of post-grant patent review.

Despite this success, there is widespread feeling that inter partes reexaminations haven't worked. That is largely because the US Patent Office made an unreasonable projection to Congress that 400 inter partes reexaminations would be filed in 2000, and the number would grow at 10% per year . However, there was no basis for this projection. It would be unprecedented for a new legal strategy to be created and get that much use (more than one filing per day!) in its first year. As it turned out, the statute needed an overhaul in 2002 to be viable at all, further highlighting how silly the projections were.

It was irresponsible to set the expectation that inter partes reexaminations could possibly meet these wild projections. Instead of being a failure, inter partes reexaminations are an example of a successful launch of a new legal process to challenge patents in the patent office.

Post-Grant Review Won't Replace Most Litigation

A major topic of today's hearings is to discuss the need for further kinds of post-grant review processes, including the so called "first window" and "second window" challenge mechanisms. In order to address these, we have to step back and ask why is it that we think we need more post-grant review processes.

Post-grant review is usually posited as an alternative to litigation. The idea is compelling. If there were a way for a patent holder, and potential infringer to dispute the validity of a patent without going to court, we could all avoid the cost and time delay that litigation entails. So, the goal is to have a process for post-grant review that is fair and is streamlined to avoid the complexity and cost of a court trial. That should dramatically lower litigation rates.

It's a noble goal, but, unfortunately, it is doomed to failure.

The problem is the unexamined assumption that patent litigants actually want a method that is fair, fast and cheap. They key role here is played by the potential infringer because they are the ones making a decision to challenge a patent in post-grant review, not the patent holder.

Anybody who wants to challenge a patent is doing so because they have a commercial interest at stake - most often it is because they fear being found to infringe the patent, although there are other reasons. The stakes are very high for a potential infringer, so high that they are very likely to outweigh the legal costs. Challengers want to win, and they will pick the process that they think gives them the best likelihood of winning. Costs are at best a distant second. It would be a foolish economy for them to choose a cheaper option, and then lose. Getting a speedy result, which seems like a great goal, may actually be a negative factor - a potential infringer often wants to delay things as much as possible.

Streamlined post-grant procedures give a challenger fewer opportunities to win than a full blown trial. This is just common sense. In a court trial, one can use extensive discovery to come up with something useful you didn't know up front. Or you can use a silver tongued legal orator to charm a jury. The full panoply of tricks and techniques that a top legal team can deploy are available at trial.

Meanwhile in a post-grant review process, some of these maneuvers will not be available - if the system is streamlined. So, you give something up. What you get in return is a cheaper proceeding (which you may not care about) and faster results (which you may not want). As a result, most patent litigators will not advise their clients to use reexamination as an alternative to trial. Again, this is just common sense - why would a trial lawyer advise against a trial?

This isn't just self interest - many trials are won on the basis of arcane complexities that are not available in a post-grant review process. A good trial lawyer knows those tricks and uses them to a client's advantage. Why fight with one hand tied behind your back?

Of course, any post-grant process has the inherent unfairness that the patent holder has everything to lose (his patent) and nothing to gain. Meanwhile, in a lawsuit, both sides have some skin in the game - the patent holder could lose a patent (by having it ruled invalid or unenforceable), while the defendant could be found to infringe. So, by its very nature, post-grant review is a one-sided affair compared to a lawsuit.

The only way to create a process that a typical challenger would prefer would be to create one in which it is much more likely that the challenger will win. So, only a mechanism that was manifestly unfair to the patent holder would be chosen by a challenger in preference to the full range of options available at trial. It would have to have a huge advantage for the challenger to give up the ability to seek discovery and the other range of trial activities.

Once again, it is just common sense. If a challenger has to opt between two choices, and one of them has fewer available legal options, why make that choice? Cost isn't important to a serious infringer and speed can be a negative. So why would a majority of challengers take the post-grant review option?

Unfortunately, most discussions of post-grant review lack this common sense perspective. Instead, they focus on an idealistic view that a challenger will set aside its best interests. On top of that, the challenger's trial attorney would

have to set aside his or her best interests (as well as his or her client's) and advise that they'd be unable to accomplish more in a full trial. Why on earth would we expect this to happen a large fraction of the time?

Likelihood of winning is not the only factor. As we have seen from the litigation statistics, 96% of all litigation isn't about getting to trial. Instead, it is a process that the parties use to force each other to the table for settlement. Indeed, 30% of all cases settle before the court takes any action at all, so it is not even a question of using the court as a referee.

Filing a lawsuit is a useful tool in negotiation in part because the parties can control it if they come to terms. Upon settlement, a civil lawsuit is dropped no matter what the merits. That isn't what happens with either ex parte or inter partes reexamination. Once prior art is brought to the attention of the patent office, the reexamination will proceed. There is no way to "call off the dogs" if the parties settle during the reexamination process. This makes it very hard to use reexamination as a bargaining chip.

The reality is that post-grant review procedures will never be an alternative for a large fraction of patent litigation. This is a very key point for this committee to consider in deliberating on patent reform. Any scheme which aims to replace the bulk of patent litigation with post-grant review will run afoul of these simple common sense issues.

The point of post-grant review should not be to replace most litigation. Instead, post-grant review procedures offer a way to resolve a class of patent disputes that would be ill-suited to litigation. This isn't so much the cases that lead to existing lawsuits - instead. The existing reexamination proceedings do displace some lawsuits on the margin. Mostly this happens because when a reexamination takes a patent out of circulation no future lawsuits can stem from that patent. However, the goal of reexamination is not a one-for-one replacement of litigation. On the whole post-grant review procedures serve a different purpose - to improve patent quality and resolve disputes that are not well-suited for court.

The anonymous nature, and the low cost of ex parte reexamination makes it a valuable tool for many who want to challenge a patent. Anyone can file a reexamination request, which means that an interested party can challenge a patent without being an infringer. Generally speaking, you can't do that with a patent lawsuit - you must have been threatened with litigation expressly or implicitly by the patent holder before you can file for declaratory judgment. Ex parte reexamination can be thus be used by a potential infringer fearful of a patent in a manner that simply couldn't be done with a lawsuit.

These factors explain why there are five times as many ex parte reexaminations each year as patent trials. Ex parte is by far the most popular way to challenge a patent. Inter partes reexamination also has its place. The rapid growth of inter partes reexamination and the fact that it is already at the level of more half the rate of patent trials suggest that it too will find a role in patent disputes.

However, the current reexamination processes will never be a substitute for most patent lawsuits because of the fundamental point that a full blown trial is better for the challenger under many circumstances. The same is true for any proposed post-grant review process that is less than a full trial. New post-grant procedures are far more likely to enable a new kind of challenger than to supplant lawsuits for existing classes of challengers.

As a result, advocates of post-grant review have taken their proposals in several different directions. One is to make the post-grant review more and more like a full trial. An experiment in this direction is the patent opposition process used in the European Patent Office. An EPO opposition has many more features of a trial than the USPTO reexamination processes. In particular, the EPO allows discovery and oral arguments. Recent proposals in the House of Representatives are similar in that they increase the scope of post-grant review to bring more and more features of a full trial into the process.

The problem with making post-grant review more and more like a trial is that the closer you get, the less advantage there is in having a special mechanism. If you make it just as complicated and costly as a trial, what have you gained?

Indeed, a constitutional law expert would say that you have lost in this bargain. Why have one form of trial handled by the judiciary, and what amounts to another form of trial handled by the executive branch? There are serious constitutional issues here. There is also a common sense question of why have two different trial-like proceedings that could conflict? The closer one brings post-grant review to being a full trial, the more one begs these questions.

Alternately, if you leave the post-grant process significantly different than a trial, then you are back in the same position as before. A challenger will still be put in the position of asking, what gives me the best result? If the difference between a full trial and a reexamination is trivial, then they may well choose it, but what has been gained? Or, if the post-grant review is significantly different than a full trial, it won't be optimal for most challengers.

You can't have it both ways. A process that is more streamlined and efficient than a full trial must, by that very fact, have left out some significant complexity. More than likely, that complexity is a boon in some cases and challengers will opt out whenever they can. Fortunately, there is a way out of this mess, as we will discuss below.

Another direction is to not make post-grant review an alternative, but instead turn it into a new and additional way to harass a patent holder. The goal here is for an infringer to use post-grant review as something to do as part of a strategy that includes litigation. So, the challenger might throw some prior art at the patents in an anonymous ex parte reexamination, then it might file a declaratory judgment lawsuit to force the patent into a full lawsuit. Then if it loses in district court it might come back with an inter partes reexamination later on, with some prior art that it reserved for this purpose. During the appeal the (by then) convicted infringer can then trade on the excuse "wait, the patent office is reexamining the patent!" and ask to delay or stay the ruling of the court pending the completion of the reexamination. Of course, the only reason the reexamination was going on at that late date is the challenger deliberately avoided invoking the reexamination process until after it had lost.

This approach can be effective because it drains additional capital from the patent holder who is forced to fight a multi-front war. This is especially true when the infringer is a large company with nearly limitless resources. It has every interest in delaying justice and draining the resources from a small patent holder.

However, the effectiveness comes at a price. This approach subverts a fundamental principle of the American justice system - you shouldn't get to try the same case multiple times. It's like when kids try to shop a request to both Mom and Dad to see who gives the best answer. This may be unavoidable with five year olds, but it is irresponsible to allow this sort of behavior in a serious issue of patent law.

The estoppel provisions of today's reexamination procedures are designed to try and eliminate a type of double jeopardy, so to speak. However, the provisions have a serious flaw - they only work in one direction. There are estoppel limitations on evidence raised in a reexamination, preventing them from being used in a subsequent patent lawsuit in district court. However, there is no estoppel or waiver in the other direction - it is perfectly feasible to raise evidence in district court, lose on that evidence, and then subject the patent holder to a reexamination process all over again on the same evidence.

A more subtle but just as damaging abuse of the system comes from what one could call "evidence hiding." A company worried about infringing a newly issued patent may have knowledge of some prior art - for example, un-cited work done by one of its engineers. So, that means the company will submit it promptly in an ex parte reexamination, right?

Wrong! Today virtually any attorney would advise a client that was seriously concerned about the patent to hide the data and hold it in reserve. It's much like the question of whether to participate in a post-grant review, or instead to wait for a full trial. Most attorneys today would recommend hiding your best evidence on prior art or other validity issues, waiting to use it only in the context of a full trial or some other later action.

There are other reasons to hide evidence. As one example, the patent holder may go after your competitor first. Why help a competitor by busting the patent? The cynical old saw "the enemy of my enemy is my friend" drives this behavior. In fact, a company in possession of important prior art may not use the evidence at all - instead it may do a deal with the patent holder to license the patent cheaply, while burying the prior art. Competitors will have to pay full

price. And the public does not benefit from this hidden or "submersed" evidence conduct; the patent system is about disclosure which in turn promotes technical progress.

Indeed, this evidence hiding harms the entire patent system. While the individual entity doing the evidence hiding may benefit, everybody else suffers. If a patent is invalid, then it should be struck down. Leaving an invalid patent out there only raises the probability that somebody else, not in possession of the evidence, will run afoul of it. A well-designed post-grant review process will give a strong incentive for parties to use their evidence early rather than late.

Rather than having an incentive to come forward, the current system gives an incentive to sink the evidence and prevent justice from occurring. To see how widespread this practice is, all one has to do is look at legal articles about reexamination. One of the most criticized pieces of the current inter partes process is a provision that says a challenger is estopped from using any information in a later district court trial that it could have presented in the inter partes reexamination. This condition is explicitly trying to prevent evidence hiding. The fact that it is singled out for complaint isn't a weakness of inter partes - it shows the strength of a provision that is meant to be fair to both parties.

Unfortunately there is no similar evidence hiding provision in the other direction - requiring that a litigant use its best evidence in trial before a district court, by being estopped or waiving the right to pull it out during a later reexamination.

First & Second Windows

Much of the recent debate on post-grant review has focused on the issue of timing - should be there one point in time to do post-grant review (the so-called first window), or should there be a second time when the patent is about to be the subject of a dispute?

As explained above, I believe that existing reexamination procedures are effective and I question the utility of having yet another form of post-grant review alongside the existing ex parte and inter partes reexamination procedures. However, since the issue of timing is important to this committee I will address it.

In order to understand the timing issue, it is worth walking through the relevant stages of a patent's life. Most patent applications are published 18 months after being filed with the USPTO. At that point, the world gets to see the patents for the first time.

And, the world gets to start attacking them too. Publication of the application effectively puts the world on notice about the patent. In the case of my company, we've come to expect calls from venture capitalists and interested companies as soon as our patent applications hit the USPTO web site. Make no mistake about it - the world notices when a patent application is published.

Publishing opens the patent application up to several sorts of challenges. This includes third party submission of prior art to the patent office. Someone can also file interference proceedings to challenge inventorship. So, even before there is post-grant review, the world gets to take a shot at the patent while it is still in progress.

About 12 months after being published, the patent issues. The so-called first window period for post-grant review would begin at that point. I believe that it is vital for the first window to be a very limited duration. There are two reasons for this.

The first involves pendency - the amount of time it takes between filing a patent application and the patent issuing. Pendency today is 30 months on average, and the number is increasing. One of the few patent reform issues on which virtually everybody agrees is that the current pendency is too long and increasing it further could cripple the patent system.

The time period in which a challenger can file a first window review request is in effect, an addition to pendency. A small company that is counting on the patent to win additional financing from its investors, or to launch its product strategy can't know whether they really have the patent until it has gotten past the window period.

Patents that are challenged in the first window are immediately thrown into doubt and, for all practical purposes, can't be used or counted upon until the process is over. This further extends the effective pendency for those patent holders who patents are challenged. Rules must be instituted so there is proper recourse against challengers who unfairly us the post-grant review mechanism to harass a patent holder.

So, the length of the first window extends the effective pendency for all patents. For patents that are challenged (even if challenged without merit), we have to add the time for the review - which is probably another 2 years. In short, the first window is a recipe for greatly increasing effective pendency.

A patent holder who doesn't use patents as a pillar of its business strategy does not care about this. Defensive use of patents is not greatly damaged by this effective pendency increase. As long as you have a large defensive stockpile, adding to pendency does not substantially hurt you.

However, an increase in pendency is extremely damaging to any company that cares about its patents. It is particularly damaging to small companies. A start up company often pins all its hopes to a single patent. Delaying that process is extremely harmful.

Pendancy is already a huge problem within the patent office, which harms nearly every part of the patent system. Unless there is solution to pendency in hand it seems irresponsible to create a further negative impact on pendency.

The second reason to have a very short first window is to prevent evidence hiding. The only way to get people to share information is to give them a strong incentive to do so. That's why the minister says "speak now or forever hold your peace" in a wedding ceremony. There is great public benefit in encouraging challengers to come out with their best evidence as soon as they can.

Since average pendency today is 30 months, and the patent is published after 18 months, any challenger already has 12 months to study the patent application. That time period should give it ample notice to gets its ducks in a row for a challenge. A first window period of 6 months after issuance would seem ample to fine tune the request and submit it.

Note that I am not endorsing a first window. As explained above, it is far from clear that we need any new post-grant process. However, if there is a new post-grant review procedure, it should be limited to a window of 6 months from the date of issue of the patent.

This brings us to the "second window" proposals. In my mind there is no conceivable justification for adding a second window for extensive post-grant review.

Today, we already have two reexamination procedures which can be done during the entire life of the patent. Ex parte and inter partes reexaminations have no window restriction at all. Why do we need yet another one?

The reasoning, so far as I can follow it, is simply another way to try to devalue patents, particularly for small companies that cannot afford to plow through the multiple hurdles being thrown in front of them. Among other things, the existence of a second window encourages evidence hiding. There is no reason to have a first window if you allow a second one - who would bother to do it up front?

Conclusion: A Genuine Solution - Dedicated Patent Court

The fundamental dilemma posed by post-grant review is how to differentiate it from a trial court. On one hand, there is a strong pull to make post-grant review differ from trial, because that lets it be faster, cheaper and more efficient. On the other hand, there is an inexorable pull in the opposite direction towards adding all of the features found in a court trial.

This is a classic "slippery slope". Once you start adding more features of a trial to post-grant review, it is hard to stop. Look at the present debate. We have already created two forms of post-grant review (ex parte and inter partes). We're here today to talk about yet another form, which adds even more features of a trial.

There is a strong reason for this. Unless you have the features of a trial, the trial will be a preferred venue for many of the parties.

I believe the answer is not to fight this trend, but rather to embrace it. The dramatic way to reform patent litigation is to create a separate court to hear patent cases.

This is similar to what is done with Tax Court, or Bankruptcy Court. Instead of patent cases being heard in a Federal District Court they would be heard in Patent Court. Patent lawsuits are already heard by a dedicated court at the appellate level - the US Court of Appeals for the Federal Circuit. Why not do this at the district court level as well?

There are many reasons why this approach would benefit all parties involved in patents. When a patent trial is held in Federal District Court, it must compete on the schedule with the myriad other types of federal cases. Patent cases are highly technical and specialized; so many Federal judges are not as familiar with the complex legal issues as they would be if they only heard patent cases. That's the reasoning behind Tax Court and Bankruptcy Court, yet, if anything, it applies more to patents than to those areas.

By creating a special court for patent trials, we could greatly expedite them. Rather than competing with every other issue, patent cases would be tried by a dedicated resource. This would greatly speed justice and would also lower costs.

At the same time, having jurists experienced with patent law, doing nothing but patent cases, would give all parties more confidence in the outcome. It would also eliminate venue shopping, which is a highly contentious aspect of current patent litigation and itself a major topic of patent reform.

In effect, many of the post-grant review processes are a separate patent court in disguise. Once you allow discovery and oral arguments you have in essence set up a separate court system. The problem is that doing one such system in the Executive Branch, while leaving the current Federal District Court in place in parallel just begs for conflicts. Most proposals would put the US Court of Appeals for the Federal Circuit in charge of adjudicating the differences - but why set up a system ripe for conflict in the first place?

The existing reexamination processes instituted by the USPTO could remain in place. As explained above, they are popular, successful, and serve a different function than a full-blown lawsuit.

I believe that a separate patent court would be an excellent solution. It is bold, and, in that boldness, are challenges. There are many details to get right, and some of them are beyond my own expertise. However, it is much better to fix a problem once and for all than add band-aids that ultimately won't work.