



Babies, Bathwater and Patent Reform

Stopping Trolls without Killing Innovation

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Note: There are comments
for each slide if you view
the Notes pane.

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September 20, 2007

This is an expanded version of the presentation I gave to the Senate Legislative and Technology staffers on September 20, 2007 in a briefing sponsored by Senator Coburn.

The issue before us is one of profound impact on America's future. I sincerely feel that if the Patent Reform Act of 2007 passes in the form it is in, particularly in respect to patent enforceability issues such as damages, it will have a devastating and perhaps irreparable impact on America's unique distinction in the world in its ability to foster innovation.

I am not a political activist. But, I am a fierce believer in America, and perennial optimistic about her future, particularly in regard to entrepreneurship, science and innovation. So, that's why I'm here.



The Patent Reform Act of 2007

This presentation is about...

- The Patent Reform Act of 2007 (the “Bill”)
 - how it relates to the US technology ecosystem
 - how it got to be what it is
- The House version: H.R. 1908
 - 9/8/07: House approves the Bill 220-175-37
 - Majority of votes cast in 20 of 50 states
 - Dems: 160 ayes, 58 noes; Reps: 60 ayes, 117 noes
- The Senate version: S. 1145
 - Currently being worked on in the Senate

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The Patent Reform Act of 2007 (the “Bill”) has been in the works for many years. The House Bill, to be frank, is a mess as a written document. The language is convoluted, ambiguous, confusing and naïve. The Senate Bill, given the latest version I’ve seen, is only slightly better. Both bills very much read as if the people that wrote them have little or no practical understanding of the process of invention, the process of product creation, or the process of operating a technology-based enterprise.

One thing you’ll hear is that the Bill’s primary goal is to stop patent trolls. Unlike other bills that have been written to separate bad actors good actors (e.g. anti-spam or anti-cybersquatting legislation), there is nothing in the Bill to identify a troll, or bad behavior from good behavior. As a result, the Bill simply weakens all patents and adds complexity to the patent process, whether they are used to the benefit of society or not.

After receiving a slew of documents from both sides of the discussion (both the people in Congress drafting the Bills, the people supporting, and the people opposing the Bills), and reading through all of the testimony to the current 110th Congress as well as much relevant testimony from the previous Congress, I’ve come to the realization that there are other forces afoot that are driving this Bill: some well-intentioned but misguided, and some self-interested.

1. There are number of academics who have weighed in on the issue of Patent Reform, and have influenced the Bills’ authors (and supporters) with their theories. For example, “A Patent System for the 21st Century” by the National Research Council of the National Academies is often cited. Although this document makes some relevant points that I agree with, in a number of critical areas, it is simply off in the weeds. In short, this, and almost everything else I’ve read, look at patents in terms of statistics, rather than look at the practical realities of invention, product development, investment, partnerships, business model development and marketing, especially in a startup context. Macroscopic analysis can only take you so far.

2. As you’ll see later in this presentation, high tech companies with strong market power would be advantaged (in the short term, anyway), if patents ceased to exist or were much weakened. They’ve heavily biased the debate, and have put enormous lobbying dollars behind it. In fact, they are the ONLY group I’ve found in support of this bill.

<http://www.technewsworld.com/rsstory/59466.html> had a very astute headline: “Tech Industry vs. Everyone Else”.



Who I am

- **Technologist**
 - 72 US Patents, over 50 pending
 - QuickTime, WebTV, Moxi, Color Macintosh, etc.
- **Entrepreneur & Executive**
 - CEO, Rearden Startup Incubator
 - 8 Startups, some public, some stealth mode
 - Over \$100 Million invested
 - President, Microsoft WebTV Division
 - Team developed most Microsoft TV-based products
 - Principal Scientist, Apple Computer

More about me: www.rearden.com/people

My background can be found at www.rearden.com/people.

I'm an unusual voice in this debate in that I've been on many sides of the issue.

I have been and continue to be a very active inventor in a wide range of technologies. And, I've carried (and am taking) a large percentage of these inventions through the full process of funding, development, partnership, and promotion into mass-market products.

I've started, funded, developed technology and run several startups.

I've been worked in large tech companies inventing new technologies, delivering major products, and running major divisions.

I've also worked extensively in partnership with companies, engineers, scientists and entrepreneurs in Europe, Asia and the Americas. I've dealt with intellectual property issues across borders

And, I've done this work both in the shoes of a ground-floor startup guy, of a medium-sized company president, and of a Microsoft division president.

Lastly, I'm often in the role of the bridge between non-technical and technical people, since I work in both spheres and can "translate" from one language to the other.



What are patents? (in theory)

US Constitution: Article I, Section 8:

Congress shall have the power...
to *promote* the *progress of science and useful arts*,
by *securing* for a limited time to ... *inventors*
the *exclusive right* to their ... discoveries.

- Congress' responsibility:
 - To *promote* the *progress of science and useful arts*
 - To *secure exclusive right* to *inventors*
 - The only place "exclusive right" appears in the Constitution

The Constitution established patent (and copyright) rights even before the Bill of Rights were drafted. It was recognized by the framers of the Constitution that for the US to be economically successful, there would need to be incentive for creative people to create, and the only way to do that would be to give them a monopoly—for a period of time—for rights to their works. Dean Kamen pointed out to me this is the only place "exclusive right" appears in the Constitution.

In the Web 2.0 era, where many kinds of information is shared freely and ad-supported services are available for free, and there is a healthy open source movement for software, it is easy to understand why some people may feel that the provisions here are obsolete, particularly when there are those (e.g. trolls) that exploit the "exclusive right" part, while failing "to promote the progress of science and useful arts"

But as a guy who both writes software and designs hardware, who has done Web 2.0 as well as manufactured products, and as someone who has raised 100s of millions of dollars to fund companies developing complex products, I can assure you that these words are as relevant today as they were when they were written.

Sure, you can churn out a cool application for the Web with low capital, and immediately line up ad-supported users. That great if that's your end-product goal. But, that is one segment of the world of technology. Most technology inventions are hard. The vast majority of things you try don't work. You don't know how long it will take to get the idea working (if ever), and even then, you have a monumental task to explain to someone why it is useful and then you have to package it into a business model. The invention cycle at Rearden is 3-5 years. It's expensive to keep salaries going for so long with no revenue. And, to make it worse, even when you get stuff working, sometimes there is just no good business model for it.

So, the reality is, the only way to justify the time and energy is to know that you'll be able to protect the inventions that do get out the door with a reasonable business model around them. Ironically, the most elegant inventions—ones where a new concept is reduced to something easily explained—are often the ones most easily copied.

Without protectable patents, such projects would never be funded.



What are patents? (in practice)

- Assets that enable market power
 - Protect innovations for 20 years
 - ENCOURAGE investment of money & effort in new ideas
 - THE ONLY protection for startups against market leaders
- Part of an intricate, long-term ecosystem
 - May take 7 years to issue (if ever)
 - May take 5 years to be examined
- Patents are expensive
 - \$10,000-\$30,000 from filing to issuance
 - After personnel, 2nd highest cost for my tech startups

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A good patent (combined with a good product execution, a good business model, and good marketing) creates market power. It's no different than any other kind of market power, and depending on the patent (and potentially the way it is packaged in a product), it may convey more or less market power. Market power comes from the attraction of buyers to your invention and also from the exclusion of competitors from copying your invention.

For example, if you create a social networking company on the Web that attracts a large number of users (a "network effect" company), you've created market power as well. You've attracted users who are seeing your ads. And, by virtue of drawing people away from other sites, you are excluding competitors.

For a lot of things (like the example above) patents are not needed to create market power, but for a lot of things, patents *are* needed. This is especially true when you are entering a market with established market leaders, say, going up against a Microsoft or a Google. If either company can just clone what you've developed, and decides to put their market power behind it, you'll just never be able to get off the ground. In fact, they may choose to offer the product or service at a loss, just to build market share, in anticipation of making it up later on (and, as is often the case when they do, they stop innovating). As a startup, you simply lack the resources to compete against that, and patents are your only recourse to survive. And, as a startup, you are highly motivated to keep innovating. So, it is beneficial for society.

Patents take a long time. I've had at least 2 patents issue this year that took 7 years, and I have a least 1 patent that I filed about 5 years ago that has yet to even be examined. In the 1980s, my patents took about 3 years.

Patents are also super expensive. They are not something you file casually. We only file patents on inventions we feel we are likely to get "traction" in a winning product (which is one reason why first-to-invent is so helpful for startups, because we get time to live with an invention for a bit to see whether it is leading to something with traction before we file. With first-to-file, we'd be obliged to file everything as soon as we think of it, before we have lived with it and know whether it worth patenting).

I can't imagine how we would be able to absorb even more cost, as proposed by the Bill, for prior art review, and the potential of endless challenges. Each office action typically results in \$2,000-3,000 in legal fees, sometimes more with a complex patents. At some point, you simply can't justify the costs against the likelihood of having a marketable product.



US technology ecosystem

Duopolies (*Intel, Cisco*)
System Integrators (*Dell, Apple*)
Software (*Adobe, Oracle*)
Web Hubs (*eBay, Google*)
Financial Services (*Visa, Intuit*)
Carriers (*Comcast, Charter Cable*)

High Market Power
Patents not needed

Heavy Industry (*United Tech, GE*)
Proprietary Semi (*Texas Instr., Qualcomm*)
Biotech (*Medtronic, Gen-probe*)
Pharma (*J&J, Eli Lilly*)
Chemical (*Dow, DuPont*)
Emerging Industries (*Nanotech*)

High Market Power
Rely on Patents

Microsoft, IBM

Monopolies
Can't assert patents
Patents not needed

Tech Startups (*Deka, Rearden*)
Venture Capital (*Venture Invest., Canopy*)
Individual Inventors
Universities (*U of Calif., Columbia*)

Low Market Power
Rely on Patents

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One thing that really has confused people about the Bill is why is it that all of the high tech companies are for the Bill, but the biotech, pharmaceutical companies are against the Bill. Surely, high tech companies need strong patents, too...or do they? Well, it's not that simple.

This slide is perhaps the most important one in the deck, and when I presented it in DC to staffers and lawmakers, invariably there was the "Now I get it" nod. So, let's go through it:

The supporters of the Bill are largely on the left side. The opposers are largely on the right side. Now, to be clear, these are general categories, and different companies, depending on their situation relative to patents, may find themselves on one side or the other. In fact, many of the companies on the left side were once startups that relied on patents and would be on the right side. Intel, notably, was very aggressive in asserting patents in its younger days.

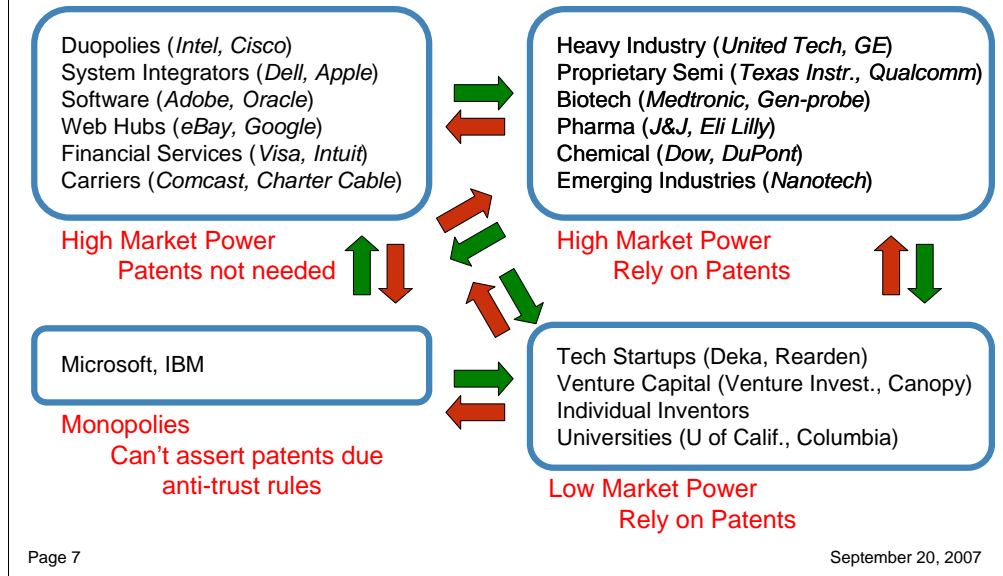
In the upper left corner are High Market Power companies that don't rely on patents for their market power. They'd be happier in a world with no patents. In the Web arena, there is not much need for patents since market power is largely derived from the "network effect" or aggregating eyeballs. E.g., I individually have more patents (and patents pending) than Google or eBay. One might think that Apple would rely upon patents, given new innovations like the iPod/iPhone. But, if someone were to clone the iPod or its features, the biggest obstacle wouldn't be patents, they'd be up against the huge market power Apple has built around it. So, in the balance, even Apple would be happier in a world without patents.

In the lower left box are Monopolies. When I became a President of the WebTV Division at Microsoft, I was told that I need to think about patents differently because Microsoft, in practice, can't assert patents because they have so much market power that anti-trust laws apply. They can, however, assert patents as a counterclaim if someone sue them with a patent. IBM is in the same situation. So, Monopolies also would prefer a world with no patents.

(Description continued on bottom of next slide....)



The ecosystem flourishes...

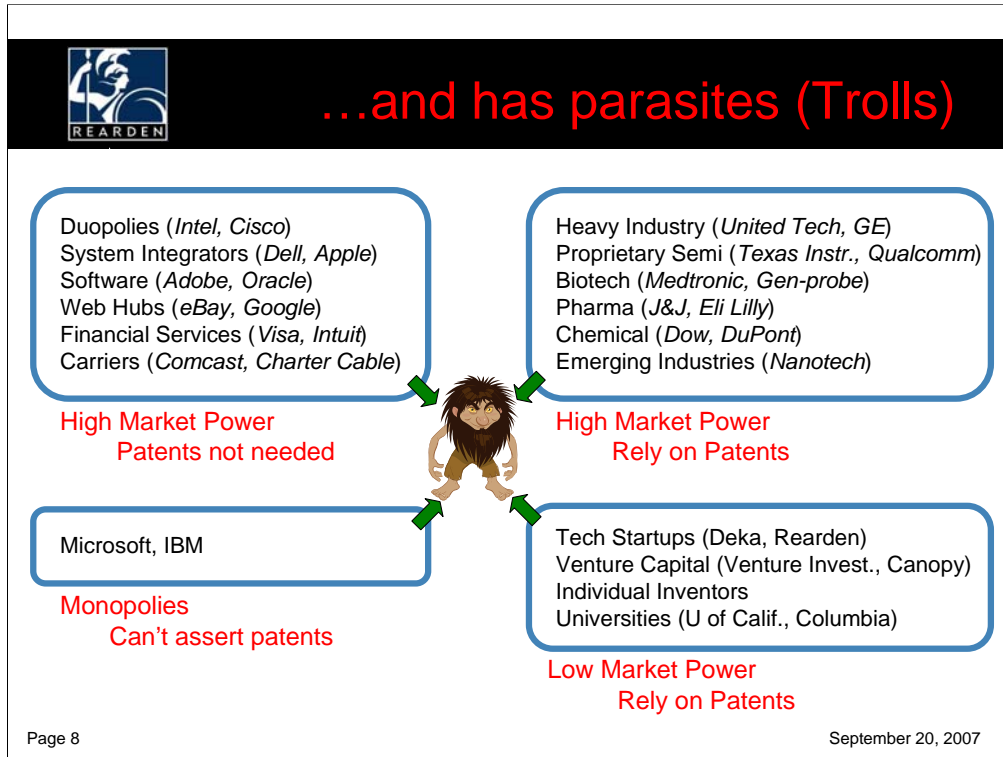


This slide shows that, despite the difference in views on the Bill, the US technology ecosystem flourishes. Companies purchase technology from each other, license and cross-license patents, and companies invest in each other. For example, companies from all 3 of the other boxes have invested in my startup companies in the lower right box, the investors are always VERY concerned about the strength of our patents before make the investment. Indeed, companies in the other boxes often acquire startups, bringing not only technology, but talent. Large companies simply have too much inertia to move quickly and rely upon startups to help them. For example, the first iPod's operating system was developed by Pixo, a small startup. Google Maps' Satellite view and Street view technology came from acquired startups. The US technology ecosystem is by far the strongest and most innovative in the world.

(...Continued from previous page)

In the upper right box are companies with high market power, but that rely upon patents. Biotech/pharmaceutical must make big investments in new devices/treatments so they know they won't be copied when they are introduced. Also, some high tech companies have proprietary technology that they need to protect. For example, Texas Instruments has DLP technology for projectors. Physical component manufacturers (3M, Corning) also rely upon patents to prevent outside and foreign rivals from cloning their technology.

In the lower right box are companies with weak market power that rely upon patents. A large percentage of tech startups rely heavily upon patents because without them, a high market power company will simply clone the work they are doing, So patents (or the threat of patents while they are pending) are the only defense startups have to protect their technology and break into new markets. And, without defensible patents, investors won't invest in technology startups. That said, there are many startups whose business models do not rely upon patents in order to achieve market power. "Network effect" companies (e.g. YouTube, McSpace), where the aggregation of users creates market power are good examples. But, if a startup is creating a new technology that can not rely upon other means to attain market power, patents are the only option for survival. Note, that because Venture Capital companies invest in both kinds of startups (rely on patents, don't rely on patents), they have not taken a side as an industry relative to this Bill. University research strongly relies on patents for licensing technology. Indeed, since they don't market products, patents are usually their only option to derive income from their technology and fund more research. Increasingly, universities are sharing royalties from patents with the researchers who developed them, and this is spurring them on.



Even the healthiest ecosystem has parasites. In the US tech ecosystem they are called patent “trolls”. They attack everyone in the ecosystem. I’ve received threatening letters from trolls at my startups, and I’ve received them at large corporations.

What trolls do typically is buy up weak patents from individual inventors, and then assert them against companies that they feel they can argue have products that even slightly relate to the patent. They might even try to alter the claims of their patents in order to try to tune them to be more similar to products that are shipping so that they can sue companies.

Although the patents typically are weak, trolls sometimes can extract substantial damages from their targets (both large and small companies) because of the threat of injunction. This is what happened in the Research in Motion (Blackberry) case. Even though they knew the patent was weak and almost certainly to be invalidated upon re-examination, they couldn’t risk having their service shut down. So, they had to pay the troll a huge settlement.

But the Supreme Court dealt the trolls a huge blow recently by ruling in *eBay v. MercExchange* that patent holders are not entitled to a presumption of injunction, and the merits of the patent holder’s situation have to be considered. That immediately wiped out trolls’ biggest weapon: the threat of injunction.

That said, unfortunately, the ruling also affected legitimate patent holders by changing the interpretation of patents to be more like business contracts than like property. The long term affects are unknown, but they will weaken patents.



Everyone wants to stop trolls

- Trolls are parasites, not ecosystem examples
 - They should be dealt with as parasites:
 - Bad actors that should be identified and blocked *without* damaging an otherwise healthy ecosystem
 - *That's all we need to do*
- Trolls already were hit hard this year
 - Supreme Court *eBay* weakens injunctive relief
 - New patent rules on 8/21/07 limit complex patents
- ...and inventors were hit hard with them
 - Tech ecosystem impact will not be known for years

Trolls are a very small minority of patent holders, and troll patent awards are very small minority of patent awards. They do not represent the typical patent holder at all.

They need to be blocked, but just as you would not want a spam filter to block legitimate email, we don't want troll legislation to block legitimate companies who rely upon their patents from being able to use the patents.

Other legislation, like anti-spam or anti-cybersquatting legislation identifies bad actors and sanctions them, without sanctioning companies using email or websites legitimately. The Bill does not do this. It simply weakens the US patent system overall.

As mentioned on the previous page, trolls lost their strongest weapon with the Supreme Court *eBay* ruling.

Also, a change in patent rules on 8/21/07 substantially limited the number of claims and continuations (i.e. filing of new patents furthering the ideas of prior patent) a patent may have. This was primarily intended to block trolls who abused the system. Unfortunately, this came at a price. We won't know for years whether the courts are interpreting the Supreme Court *eBay* decision to the best advantage of the technology ecosystem. And, the patent rules arrived with almost no warning and are retroactive against pending patents. For companies like Rearden that create complex systems that take many years to develop and have many interrelated elements, the new rules impose arbitrary restrictions.



Trolls have defined the Bill

- The Bill is drafted as if every inventor is a troll
 - It is at best naïve, and at worst misguided
- It doesn't just stop trolls, it kills innovation
 - It devalues every invention
 - It adds huge cost to an already expensive process
 - It makes armchair assumptions about a complex art
 - It whacks a long-cycle ecosystem with tectonic shifts
 - It destroys the US startup economy
- How could such a critical Bill end up this way?
 - Because of selective and deceiving testimony

This slide speaks for itself.

The Bills (both the House and Senate) are naïve about what it is like to be an inventor, to struggle to develop something new over a long period of time, to figure out how to shape it into a product, get investment, form a business model, market the product and then defend the product in the marketplace.

And, they propose that they arbitrary changes they are making are put into place almost immediately, despite the fact that the ecosystem is a long-term ecosystem with a 20-year patent life, with patents that may take 7 years to issue. Companies that rely upon patents plan their businesses against timeframes of the ecosystem. To suddenly make a change, particularly given the recent Supreme Court *eBay* ruling and patent rule changes is extremely risky.



Inventor testimony?

- What practicing inventors testified to current Congress?
 - None.
 - 2 individuals incidentally held patents, with none pending
 - William Tucker, Ph.D, (Univ. of Calif.) 2 patents
 - Mitch Gross (Mobius Mgmt.), 1 patent
- Dean Kamen, 440 patents, testified to prior Congress
 - Testified in 2005 and 2006
 - Vehemently opposed to the Bill, then and now
 - Dean not invited to testify to current Congress

I went through all of the testimony of the 110th (current Congress). It saddened me that a Bill that was about invention did not include testimony from any practicing inventors. (Can you imagine a Bill about a medical matter not including any testimony by doctors?)

Dean Kamen may be best known for the Segway, but he is also responsible for inventing portable dialysis and portable insulin systems, a wheelchair that can actually climb stairs, and recently, prosthetic arms that can respond to brain impulses. He is one of America's greatest inventors in history, let alone on our time. Dean did testify in prior years (when Congress had a very different composition and leadership), but clearly his testimony was not taken into consideration. He was and is vehemently against the Bill.



Silicon Valley testimony?

- What Silicon Valley tech startups testified?
 - None.
 - eBay spoke for Silicon Valley small business: supports bill
 - Only 25 patents assigned to eBay, including PayPal's
- What Silicon Valley tech *anything* testified?
 - Palm, Inc. testified on behalf of the Pro-Bill lobby:
 - "I ... testify on behalf of Palm and as a member of the Coalition for Patent Fairness in support of the 'Patent Reform Act of 2007.'..."
 - Let's take a look at Palm's arguments...

Silicon Valley has the highest density of technology innovation and development in the United States. If you ask someone anywhere in the world where you are likely to find a technology startup, they will tell you Silicon Valley. It is also where I live.

It is shocking that eBay was invited to testify on behalf of Silicon Valley startups. Beyond the fact that eBay is anything but a startup, they are not a technology company that relies on patents. In fact, they have less patents as a company than I have as an individual. Also, eBay was keenly feeling the pain of a patent troll in a case that ultimately led to a Supreme Court verdict.

Palm, Inc. testified as a Silicon Valley company, and they made it clear that they were not just testifying on behalf of themselves, but for the entire coalition of companies that is for the bill ("Pro-Bill").



Palm/Pro-Bill's argument

- Pro-Bill's premise: Large patent awards have escalated...
 - "...prior to 1990 there had been only 1 patent damage award in history larger than \$100 million; but between 1990 and 1999, there were 13 such awards. And ... 21 such awards between 2000 and 2005, including 1 recent astronomic damages award against Microsoft of \$1.52 billion..."
- ...supposedly creating a patent troll industry
 - "...It should not be surprising, then, that an industry of patent speculators has grown up almost overnight"
- Pro-Bill's solution: Dramatically reduce damage awards
 - "...apportionment of damages and limitation of willful infringement claims ... will be essential to any successful effort at patent reform..."

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This slide speaks for itself.

It lays down the entire underlying thesis for the Pro-Bill lobby.

Pro-Bill's arguments are that:

1. The patent system is broken, resulting in an escalation of awards, leading to 21 awards from 2000-2005 over \$100 million.
2. And the system is so broken, it handed a \$1.5 billion award against Microsoft that was astronomical and wrong
3. These large awards are the reason we have trolls, and thus we need to weaken patents awards.

Well, this argument is highly questionable. Trolls can be mitigated through many means (as the Supreme Court has demonstrated).

But, as you'll see in the next two slides, the premise underneath Pro-Bill's argument is unfounded.



Checking the Pro-Bill facts

- Microsoft's \$1.52 billion case was reversed
 - Also...Alcatel, not a troll, sued Microsoft
- And the >\$100 Million awards from 2000-2005?
 - This was the CORE of Pro-Bill's thesis
 - Pro-Bill's testimony included a reference*
 - Apparently, no one bothered to look it up
 - But I did...

*<http://www.iplaw-quality.com/economic/awards.htm>

William O. Kerr and Gauri Prakash-Canjels, Patent Damages and Royalty Awards:
The Convergence of Economics and Law, in *les Nouvelles*, June, 2003, at 83 .

This slide also speaks for itself.

1. The existing patent system *worked*, and the Microsoft \$1.52B award was reversed.
2. Regarding the other >\$100 million award from 2000-2005...see the next slide.



The big deception

- Awards of >\$100 Million from 2000-2005
 - The Pro-Bill testimony references list 33, not 21, cases
 - 3 are listed as being reversed, leaving 29
- 66% of awards were in industries AGAINST the Bill
 - Biotech, pharmaceuticals, chemical, etc.
- 34% of awards were in computers/high tech industries
 - Only 2 companies are in the Pro-Bill coalition: Intel and HP
 - Just 17% of settlements
- Not one case involved a patent troll

- Pro-Bill's CORE premise was a sham
 - Coalition for Patent "Fairness"?

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The slide mostly speaks for itself.

[I tried every which way to see how the references they listed added up to 21 cases. Maybe they miscounted them, or maybe they are aware of cases that were reversed. Or, maybe the referenced website changed since their testimony. Be it as it may, their references produced 29 cases that were not reversed.]

This is the proverbial "smoking gun" slide. It shows quite clearly that the companies who most impacted by large patent awards are the companies who are AGAINST the Bill. And, the information is courtesy of the Pro-Bill coalition.

A couple of interesting notes:

1. One of the patent cases that resulted in a >\$100 million settlement in the references (in the 1990s) was between two bio industry companies who are actively lobbying AGAINST the Bill (i.e. both the winner and the loser). They recognize the value of patents, even though the chips don't always fall in their favor
2. It's interesting that the only Pro-Bill companies in the references were Intel and HP. Intel was incredibly aggressive with their patents when they were younger. But now that they've established themselves as the dominant market power, the shoe is on the other foot.



2000-2005 >\$100 Million Settlements

Tech 34% of cases 31% of dollars	\$115,000,000	2000	Faroudja <-- DWin Electronics	Electronics	Pro-Bill 17% of cases 16% of dollars
	\$200,000,000	2000	Gemstar <-- Motorola	Electronics	
	\$400,000,000	2001	Pitney Bowes <-- HP	Software	
	\$420,000,000	2001	Litton Industries <-- Honeywell	Electronics	
	\$114,000,000	2002	Internet Magic <-- Netfax	Software	
	\$150,000,000	2002	Intergraph <-- Intel	Electronics	
	\$300,000,000	2002	Intergraph <-- Intel	Electronics	
	\$453,000,000	2002	InterTrust <-- Sony, Philips	Software	
	\$225,000,000	2004	Intergraph <-- Intel	Electronics	
	\$325,000,000	2005	EMC <-- HP	Computers	
Non-tech 66% of cases 69% of dollars	\$100,000,000	2000	Chiron <-- Hoffman-LaRoche	Biotech	
	\$100,000,000	2000	Abbott <-- Cephalon	Drugs	
	\$169,000,000	2001	Boston Scientific <-- Medtronic	Medical	
	\$170,000,000	2001	Gilead Sciences <-- OSI Pharmaceuticals	Drug	
	\$187,000,000	2001	OSI Pharmaceuticals <-- Genentech,Roche	Drugs	
	\$135,000,000	2002	Genta <-- Aventis	Drugs	
	\$158,000,000	2002	Guidant <-- Medtronic	Medical	
	\$175,000,000	2002	Boston Scientific <-- Medtronic	Medical	
	\$325,000,000	2002	Amylin Pharmaceuticals <-- Eli Lilly	Drugs	
	\$380,000,000	2002	Immunex <-- Schering AG	Drugs	
	\$424,000,000	2002	Medical Instrument. <-- Elekta	Medical	
	\$500,000,000	2002	City of Hope Nat Med Cent <-- Genentech	Drugs	
	\$505,000,000	2002	Igen International <-- Roche Holding	Drugs	
	\$295,000,000	2003	Eli Lilly <-- Galen Holdings	Drugs	
	\$330,000,000	2003	Idenix Pharmaceuticals <-- Novartis	Drugs	
	\$130,000,000	2004	Elan <-- Eisai	Pharmaceuticals	
	\$134,500,000	2004	Masimo <--Tyco Nellcor	Medical	
	\$1,350,000,000	2005	Karlin Technology <-- Medtronic	Medical	
	\$475,000,000	2002	SpinBrush Inc. <-- Procter & Gamble	Mechanical	

<http://www.jplaw-quality.com/economic/awards.htm>

William O. Kerr and Gauri Prakash-Canjels, Patent Damages and Royalty Awards: The Convergence of Economics and Law, in *les Nouvelles*, June, 2003, at 83.

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Here is the list of companies with >\$100 Million patent settlements from 2000-2005, and provided in the reference by Pro-Bill's testimony.

66% of the cases and 69% of the dollars were in the non-tech arena, involving companies generally AGAINST the Bill

Only 17% of cases and 16% of dollars involved Pro-Bill companies.



As American as startup patents

- Tech startups a *precious* US asset
 - Globalization is cloning one US asset after another
 - But, the US by far leads the world in tech startups
 - No other country can recreate this US phenomenon
 - Tech startups often *rely* upon defensible patents
- Today's tech powerhouses were once startups
 - Many relied upon strong patents to prosper
 - E.g. Intel, HP have aggressively litigated patents
 - Neither would be the same today without patents
 - Perhaps, neither would exist

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Increasingly, other countries in the world are demonstrating they can replicate technology competencies we have in the US and perform the same development in other countries. Chip fabrication has been increasingly moving to other countries. Other countries are providing engineering resources to replace development that was done in the US. Obviously, manufacturing has been largely moved to other countries. Anyone who has traveled abroad has watched the US dollar steadily decline in value.

But we do have one asset that is distinctly American that has never been cloned to anywhere near the scale in the US: startup companies. We innovate in America like no one else can. This is not a recent phenomenon. It a part of our heritage, including the likes of Franklin and Jefferson, and even to the point where arguably an American invented "invention" as a profession, Thomas Edison, and created many startups from his inventions, and had inventors who worked for him (like George Westinghouse) go off to do their own startups. Throughout all of this innovation, there has been the American patent system which, despite its flaws, remains the best patent system in the world for minting startups and supporting innovation.

Almost all of the high market power companies that are Pro-Bill were once startups themselves. And, they got to the position of market power where they are today by displacing other businesses that were unable to keep up with their innovation. Some did not rely upon patents, because of the nature of their businesses. But many of them did rely on patents, and may only be here (or may only be as powerful as they are) because of patents, whether used to litigate, or (as far more commonly occurs) simply dissuade other companies from cloning their work. They don't need patents now. But, startups do.



Block trolls, not innovation

- Draft a bill that identifies trolls and blocks them
 - Don't distort patent law because of parasites
- What's the rush?
 - Why not give the Supreme Court *eBay* ruling a chance? It may have solved the troll problem.
- Don't risk the US startup economy over trolls
 - Keep the baby when you toss the bath water

The Patent Reform Act is not anti-troll legislation. It's anti-innovation legislation. It is effort by the established tech market leaders to cement their position in the market by blocking innovators and by devaluing inventions.

If the Patent Reform Act were intended to block trolls, it would be written in such a way to separate trolls from legitimate inventors (like previous anti-spam/anti-cybersquatting legislation separated bad players from good ones). It doesn't. It just gums up the works.

If the Patent Reform Act were intended to "Reform" (i.e. improve) the patent and invention process, then practicing inventors in startups, using the patent system for what it was intended, would have been involved, and it would not be so naïve about the process of invention, product development and sales.



Tuning Damages Assessment

- Codify *Georgia Pacific's* 15 factors*
 - Patents span the range of human creativity
 - Wrenches, transistors, drugs, underwear...anything
 - Of course they require a wide range of factors
- *Georgia Pacific* has worked for 37 years
 - If it ain't broke, don't fix it
 - If it needs tuning, then adjust it—don't discard it
- Biotech hit by the brunt of the big awards
 - Biotech generally supports *Georgia Pacific*

**Georgia Pacific* is a landmark case where a particularly insightful judge listed 15 factors a court should consider in assessing patent awards. Though not law, it is the *de facto* standard. See Appendix A of this presentation.

There is every imaginable kind of patent. Almost anything creative and useful that the human mind can dream up can be patented. And, when a court decides a patent has been infringed, there needs to be a very wide range of factors that are considered when assessing damages.

Both the House and the Senate Bills (up to the most recent draft available) try to distill down the assessment of damage awards to just a 2 or 3 buckets. And, particularly in the House Bill, they narrow down the damages to the point where it is effectively impossible to take into account the unique benefits that a patent can bring to a product.

For 37 years, patent awards in the US have been determined by 15 factors from a landmark *Georgia Pacific* case where some very insightful judge recognized that patents need to be evaluated by a wide range of considerations. *Georgia Pacific* is not perfect; nothing could be. But it is a known quantity, with 37 years of case law behind it. If we feel we need to “reform” patent awards in America, why not start with something that is a known quantity, and tune it? For example, why not take a look at 1000 *Georgia Pacific*-assessed cases, see which ones ended up with an inequitable outcome, and then see what might be changed in the 15 factors so that more cases would end up with equitable results?

Or just codify *Georgia Pacific* as it is (or just leave it as case law), which is what the biotech industry (the ones hit by the brunt of the awards) wants to do.



Awards reflect the market

- YouTube bought by Google for ~\$1.5 Billion
 - Effectively established monopoly in Web video
 - Market Power very similar to a patent's
 - Google's own video service could not compete with the tiny, money-losing startup
- PayPal bought by eBay for \$1.5 Billion
 - Effectively established monopoly in Web payments
 - Market Power very similar to a patent's
 - eBay's own micropayment service could not compete

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A legitimate patent establishes a monopoly for the invention claimed in the patent. That monopoly may be worth nothing. Or, it may be worth a billion dollars or more.

The Pro-Bill coalition argued that awards valued at over \$100 million, leading to a \$1.5 Billion award (albeit later overturned) against Microsoft that was "astronomical". Meanwhile, they are buying "monopolies" created by "network effect" startup companies like YouTube, PayPal, etc. for over \$1 billion.

Well, let's consider the following hypothetical situation. Suppose that a company called "WhoTube" invented and patented a video compression technology so advanced that is enabled video to be distributed through the Internet 3 years earlier than it was possible using conventional technology. So, 3 years ahead of YouTube, they introduce a video sharing site using the technology, and people flock to it. It becomes the monopoly for Web video.

Let's say that a large company sees that they are establishing market power, and decides they want to compete. They reverse-engineer the video compression technology and introduce a competing service. WhoTube sues the bigger company for patent infringement, and wins. But, unfortunately, while the bigger company was infringing the patent, their market power damaged WhoTube's business.

Well, what should the damages be? Google was willing to pay \$1.5 billion to own YouTube's monopoly, created by the "network effort" of users flocking to a Web hub. Is an equivalent monopoly created because of a patent worth less?

Patents are one way to create market power, and network-effect is another. We've seen a huge inflation in "awards" for market power. Patents awards are in line with the market.



Armchair rule changes

- Proposed rule changes make life harder
 - Changing first-to-invent to first-to-file
 - Burden to startups and universities
 - Far more weak patents will be filed
 - Inventor prior art search
 - Burden to startups and universities
 - Endless post-grant opposition
 - Burden to startups and universities
 - Weakens value of patents
- Why rush to harmonize with other countries?
 - We don't want another country's startup economy.
 - We want America's startup economy.

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The Bill has a slew of new rule changes for patents. In general, they make it more expensive, particularly for startups, to obtain patents. And, more expensive to continue to defend them.

Many of the justifications are “armchair” arguments derived from scholarly papers looking at statistics of patents in the aggregate. I have yet to see one paper that discusses the reality of scrambling to get a complex product developed, financed, and into the market.

When we develop products we try many different approaches, discarding most of the ideas early on, and then homing in on the ones likely to make it to product development. We only file patents on the ideas that are likely to make it to market, and we file comprehensive patents. This saves us money, reduces the load on the patent office, and results in higher-quality patents. While it is possible someone else might file the same patent earlier and there is an interference proceeding to determine who invented it first, in practice there are only 200-250 interference proceedings a year, out of hundreds of thousands of patent applications. So, it never really comes up. But, we know we're covered if it does. And, even when I worked at large companies, this was the process: It saved them money, and wasted less engineering time sitting with patent attorneys.

Under first-to-file, this process would change. We'd file more, less thought-through applications more quickly, because we'd know that larger companies would have the resources to file applications earlier. It would waste our money, the patent office's money, and put startups at a disadvantage.

There are just a litany of other changes. If they are all enacted, it will take what is already an expensive, time consuming process and make it far more expensive and difficult. Also, some changes, like endless post-grant oppositions will again put an enormous burden on startups, who will never know when their patents are finally valid.

One argument is “harmonizing” with other countries' patent systems. It's a low priority to me.



- Quality patents require a well-funded USPTO
 - Examiners are far overburdened
 - Better examination will reject more weak patents
 - Delaying patents delays innovation
- Rule changes require adequate notification
 - The 8/21/07 rule changes came out of nowhere
 - Inventors were not notified, only attorneys
 - Few inventors I spoke to were aware of the changes
 - The USPTO's rule change Powerpoint presentation was confusing
 - My 2 patent law firms had different interpretations
 - Fundamental changes should have years of warning

Would you remember the details of a complex design 5 years after you developed it? Well, I get to go through that pleasant process of geek deja-vu on a regular basis when I get Office Actions on patents I filed ages ago. I've watched children grow up while I'm waiting for the USPTO to get back to me.

The USPTO is absurdly overburdened. They need a lot more funding. It would have a huge affect on patent quality and would stimulate innovation in America.

We need to change the way that the patent office makes rules changes. When my credit card company changes their rules, they have to send me a notification by mail. It's crazy that the patent office doesn't notify inventors with a letter. And, it's even crazier that the information they disseminate is so confused. One of our patent firms misinterpreted the PowerPoint presentation sent out by the USPTO (as did I). Another firm saw a video presentation on the new rules and told me the presentation was misleading. So, I had to tell the other firm about how to interpret new patent rules. I have yet to speak to ONE startup inventor who is even aware of the rule changes.

And, the rule change is NOT a small matter for companies filing complex patents like ours. The rule change, yet again, was aimed at mitigating trolls. Yet, it is legitimate inventors bearing the brunt of the change.

Also, it's REALLY crazy that they put rules into effect that (a) are retroactive, and (b) give only a couple months of notice to inventors.

I have to give them 5-years "notice" before they look at my patent, but they only have to give me 2-month's notice before they change all the patent rules? This really nuts.



Move slowly

- However the Bill ends up, move slowly
 - Timeframes consistent with ecosystem's time frames
 - Give inventors and startups A DECADE of warning
 - A patent may take 7 years to issue
 - Ecosystem needs time to settle from recent events
 - Supreme Court eBay decision
 - New patent rules
- Ending venue shopping is the one exception
 - I don't see how it would disrupt the ecosystem

What's the rush?

When the FCC announced they would be discontinuing analog TV service and switching to digital, they gave over a decade of warning. Why? Because given the nature of the consumer electronics ecosystem, both in terms of product development cycles and expected lifetimes of products, that was an appropriate timeframe.

Patents work on a very long time frame, both in terms of their duration and in terms (especially with an underfunded USPTO) of the pendency of patents. Startups are deeply resource-constrained. So, for us to plan around patent examination timeframes, we put specific strategies in place and use particular approaches in product planning and development.

If we are going to make tectonic changes to the patent system, then do what the FCC did: take a look at the time frames appropriate for the ecosystem allow sufficient warning.

Ending venue shopping, which is something that both trolls and legitimate companies do to get the best advantage, is something that could be done quickly. But, the quid pro quo should be that there must be an venue available that is (a) knowledgeable about patent cases and technology, and (b) is able to move promptly. But, I definitely think it is unfair for patent cases to be tried in courts that are known to favor one party.



Don't forget startups

- Startups rarely have lobbyists
 - But they still have the right to a voice
- Take care when tampering with their ecosystem

Today's startups
are
America's future.

I've been talking a lot with friends and colleagues through the technology industry (in big companies, small companies, at universities, and as individual inventors) about this matter. Many of the people I've spoken with are inventors or people that work closely with inventors.

There are definitely many viewpoints that people bring to the table about what should or should not be done, and also questions that are not addressed by the Bill like whether software should be patentable. But, through it all, there is a very universal view: do not harm startups.

Looking at the Pro-Bill coalition, I remember when many of those companies were startups. For example, I remember when John Warnock, Adobe's founder, demonstrated Adobe Illustrator on one of the first Macs to everyone at Apple. It was the first time I saw someone manipulate curved shapes on a computer screen. Adobe was a tiny startup then. They're a \$25 billion company now, after recently merging with Macromedia, which was also a tiny startup then.

While both Adobe and Macromedia grew from their own internal development efforts, they both have tapped into the developments of startup companies. For example, Flash technology was developed by a startup acquired by Macromedia. And, Macromedia has invested in a Rearden startup in the past.

We're all part of the US technology ecosystem. The market leaders need the startups, and we need them. And, each of us needs adequate incentives—and protections—so we can do what do best.

The Patent Reform Act of 2007 will dramatically harm US startup companies. Of course, some startups that don't rely upon patents may be affected less at first, but we're an ecosystem of interdependent entities. If one part is harmed, in time, the other parts will be harmed, too.

Startups are America's legacy. And we are America's future.



Thank you.

Thanks.

SGP

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Appendix

Damages Factors

A. *Georgia-Pacific*

B. House H. R. 1908

C. Senate S. 1145

The Appendix contains the Damages Factors as calculated under *Georgia-Pacific*, The House Bill, or the Senate Bill.



A. Georgia-Pacific Factors (part 1)

A comprehensive list of evidentiary facts relevant, in general, to the determination of the amount of a reasonable royalty for a patent license may be drawn from a conspectus of the leading cases. The following are some of the factors *mutatis mutandis* seemingly more pertinent to the issue herein:

1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.
2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.
3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.
4. The licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.
5. The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promotor.
6. The effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales.
7. The duration of the patent and the term of the license.
8. The established profitability of the product made under the patent; its commercial success; and its current popularity.

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These 15 factors (continued on the next page) are the primary way that patent damage awards are determined in the US. The industry bearing the brunt of large patent damages awards, the biotech industry, prefers these factors in determining awards.

The case is Georgia-Pacific Corporation v. United States Plywood Corporation, May 28, 1970.

It's rather remarkable how insightful these factors are, drafted 37 years ago, and how common-sense they are to understand, especially compared with how naïve and unsophisticated the rules are in a Bill that just passed the House in 2007 and those being considered by the Senate.

Here's a very simple example: A patent with 15 left before expiration is worth more than a patent with 2 years left. *Georgia-Pacific* has a factor for this:

7. The duration of the patent and the term of the license

The House and Senate Bills have no consideration for it. Unbelievable.



A. Georgia-Pacific Factors (part 2)

9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.
10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.
11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.
12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.
13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.
14. The opinion testimony of qualified experts.
15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee -- who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention -- would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.



B. House H. R. 1908 Factors

- (b) REASONABLE ROYALTY.—
- (1) IN GENERAL.— An award pursuant to subsection (a) that is based upon a reasonable royalty shall be determined in accordance with this subsection. Based on the facts of the case, the court shall determine whether paragraph (2), (3), or (4) will be used by the court or the jury in calculating a reasonable royalty. The court shall identify the factors that are relevant to the determination of a reasonable royalty under the applicable paragraph, and the court or jury, as the case may be, shall consider only those factors in making the determination.
 - (2) RELATIONSHIP OF DAMAGES TO CONTRIBUTIONS OVER PRIOR ART.—Upon a showing to the satisfaction of the court that a reasonable royalty should be based on a portion of the value of the infringing product or process, the court shall conduct an analysis to ensure that a reasonable royalty under subsection (a) is applied only to that economic value properly attributable to the patent's specific contribution over the prior art. The court shall exclude from the analysis the economic value properly attributable to the prior art, and other features or improvements, whether or not themselves patented, that contribute economic value to the infringing product or process.
 - (3) ENTIRE MARKET VALUE.—Upon a showing to the satisfaction of the court that the patent's specific contribution over the prior art is the predominant basis for market demand for an infringing product or process, damages may be based upon the entire market value of the products or processes involved that satisfy that demand.
 - (4) OTHER FACTORS.—If neither paragraph (2) or (3) is appropriate for determining a reasonable royalty, the court may consider, or direct the jury to consider, the terms of any nonexclusive marketplace licensing of the invention, where appropriate, as well as any other relevant factors under applicable law.
 - (5) COMBINATION INVENTIONS.—For purposes of paragraphs (2) and (3), in the case of a combination invention the elements of which are present individually in the prior art, the patentee may show that the contribution over the prior art may include the value of the additional function resulting from the combination, as well as the enhanced value, if any, of some or all of the prior art elements resulting from the combination.

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First of all, I had to read this a couple of times through until I thought I understood it.

Paragraph (2) says that the only damages that are applicable are damages over prior art (i.e. things invented before). 3M has a great example for what this means. If they invent a new Post-It Note with a patented better adhesive, and someone infringes 3M's patent, then 3M will have to subtract out the value of the paper, any prior adhesive technology, etc. They'd be left with nothing. Under *Georgia-Pacific*, contributions of prior art is just one factor: 13.

Paragraph (3) will almost never be considered, but it has to be shown "...that the patent's specific contribution over prior art is the predominant basis for market demand..." It's binary: you have to prove one patent is responsible for more than 50% of market demand (and you get entire market value), or it isn't (and you get zero). Unless the product is a simple tool, like a wrench with an invention to fit any bolt size, you'll never find one invention in a complex system responsible for more than 50% of market demand.

Paragraph (4) is a catch-all if (2) and (3) won't apply, but (2) could be applied to anything. Still, notice that (4) refers to a royalty based on the "non-exclusive marketplace licensing". What happened to the "exclusive right" guaranteed by the Constitution?

Paragraph (5) just further reduces (2) and (3)



C. Senate S.1145 Factors

- Senate Bill damages determination is in flux
 - Publicly-available Factors similar to House version
 - We'll have to wait to see what they come up with

The Senate Bill damages determination is not yet cast in stone. We don't know where it will end up.

And this is where we have some a glimmer of hope the Senate will reject the House approach and effect reasonable changes.

Or, better yet, the Senate will decide to effect no changes at all until we see the impact of the Supreme Court *eBay* ruling over time.