



BY PAUL R. MICHEL & MATTHEW J. DOWD¹



¹ Hon. Paul R. Michel, Former Chief Judge, U.S. Court of Appeals for the Federal Circuit; Matthew J. Dowd, co-founder Dowd Scheffel PLLC, Washington, D.C.

I. INTRODUCTION

The United States has, for decades, been the leading economy in any number of metrics. Many factors have enabled this success — vast natural resources, an energetic, creative, and innovative populace, a stable government that ensures the rule of law, and a strong educational infrastructure. These factors and others contribute to “innovation certainty,” about which we have written before.²

Of all the factors, one of the most important is a robust intellectual property system.³ From the early days of the United States, inventors — whether individuals or employees working for research institutions or companies — have been a driving force in creating wealth and innovation for the United States.⁴ This remains true, but the type of innovation driving the U.S. economy has changed. Gone are the days of Whitney and Goodyear, when advances in the cotton gin or rubber vulcanization could transform the economy.

In the 21st century, inventions are more likely to occur *in silico* than in a manufacturing plant. Amazon, the largest online retailer, started its business with the help of its famous One-Click patent. Google’s online domination started with patents protecting its search algorithms. Facebook likewise has thousands of patents to numerous technologies, including social networking. Advances in computer technology now dominate the automotive industry, biotechnology, and pharmaceutical R&D. Artificial intelligence, machine learning, and deep learning are transforming every industrial sector.⁵

With innovation increasingly shifting to computer-based technologies, the question is whether the United States can maintain its position as an innovation-friendly environment having optimal “innovation certainty.” Is the U.S. patent system creating optimal incentives to investors? After all, the patent system is designed to encourage investors to provide the necessary capital for firms and inventors to conduct their innovative work.

Several developments in the United States have combined to create “innovation uncertainty.” And with this uncertainty comes an increasing unwillingness to license intellectual property, even when there is no question of infringement. This is important because most patent disputes are voluntarily resolved, usually through a licensing arrangement. The U.S. federal courts do not have the capacity to decide all disputes, with only about 100 patent infringement suits per year tried to final judgement.

We detail the judicial and legislative developments that have led to the current situation. It is important to understand how we have arrived here in order to evaluate possible solutions to the current problems. And solutions are needed. The U.S. economy is at risk of losing the innovation race to other countries that are increasing their innovation certainty, such as China.

II. *eBAY* AND THE WEAKENING OF THE “EXCLUSIVE” PATENT RIGHT

In 2006, these incentives were suddenly and fundamentally shifted by the Supreme Court. In a case called *eBay v. MercExchange*, the Court essentially restricted injunction to suits between direct competitors. Previously, injunctions were issued as a matter of course once infringement and validity were proven. This ruling, as applied by lower courts, upended the incentive structure.⁶

Under the old law, IBM secured licenses from innumerable users of its patented technology, thereby earning billions of dollars, without having to file suit. After *eBay*, that all changed. Most users of another’s technology no longer voluntarily take a license. Why? One main reason

2 See Michel & Dowd, *The Need For “Innovation Certainty” At The Crossroads Of Patent And Antitrust Law*, CPI Antitrust Chronicle (Spring 2017), <https://www.competitionpolicyinternational.com/the-need-for-innovation-certainty-at-the-crossroads-of-patent-and-antitrust-law/>.

3 See generally United States Patent & Trademark Office, *Intellectual Property and the U.S. Economy: 2016 Update*, available at: <https://www.uspto.gov/sites/default/files/documents/IPandtheUSEconomySept2016.pdf>.

4 See generally Mossoff, *Patents as Constitutional Private Property: The Historical Protection of Patents Under the Takings Clause*, 87 B.U.L. Rev. 689 (2007).

5 Cockburn, et al., *The Impact of Artificial Intelligence on Innovation*, NBER Conference on Research Issues in Artificial Intelligence Toronto, Sept. 2017 (draft Dec. 16, 2017), <http://www.nber.org/chapters/c14006.pdf>.

6 For a more detailed analysis, see Michel & Dowd, *Understanding the Errors of eBay*, 2 Criterion J. on Innovation 21 (2017), available at: <https://www.criterioninnovation.com/articles/understanding-the-errors-of-ebay/>.

is the decreased availability of injunctions. The sudden change in the law caused a huge change in the negotiation tactics. Today, most users of someone else's technology choose to litigate, rather than license. Indeed, most will not negotiate or even communicate with the patent owner, on advice of outside counsel. Patent owners, knowing this, simply file suit, or if they cannot afford expensive litigation, concede their rights. Less wealthy companies, such as start-ups, are most disadvantaged by this development.

The start-ups are especially important in the information/knowledge economy because they create most new technologies, as well as most new jobs and most economic growth. Many take basic research done in university labs and develop it into marketable products, which usually requires large investments of money from external funders such as venture capital firms. Such funders are very reluctant to make the investments unless a return is reasonably secured by enforceable patents. The Supreme Court's disruption with *eBay* makes patents more difficult to enforce, and it thus becomes more difficult to achieve business resolutions and compensation for inventors and investors.

Of course, the Court was responding to a particular case and had little reason to appreciate how its ruling would alter incentives when broadly and aggressively applied, as it later was. It's not entirely clear what the Court intended, for the majority opinion said little, while the concurring opinions took opposing views. That written by Chief Justice Roberts assumed an injunction would be granted much as before, while that penned by Justice Kennedy suggested that an injunction should be limited, especially if the patent owner did not itself practice the technology. The lower courts have ignored Chief Justice Robert's opinion in favor of Justice Kennedy's opinion — and again it's not entirely clear why. In any event, an injunction became far rarer after *eBay*. Pre-suit settlements largely disappeared, and post-suit settlements were much delayed or altogether deterred.

There then arose the corporate practice known as "efficient infringement," meaning that companies chose to infringe another's patent because it was cheaper to do so than to pay for a license.⁷ The lack of injunctions was a principal reason for this change.⁸ Another practice that arose was called "hold-out," which meant that the implementer of the patented technology would not pay a reasonable price for the right to lawfully use the technology, instead holding out for a much lower price.

And the changed circumstances also depressed the value of valid and infringed patents. By some economists' analyses, average prices of publicly-traded patent rights dropped 60 percent in recent years.

III. THE AMERICAN INVENTS ACT INJECTS MAJOR UNCERTAINTY INTO THE PATENT SYSTEM

Was this all due to *eBay*? No, but as the innovation marketplace was absorbing *eBay*'s growing impact, another seismic development shook the patent world. In 2011, the U.S. Congress enacted the America Invents Act ("AIA"), which created the Patent Trial and Appeal Board ("PTAB"), a new forum inside the USPTO to adjudicate patent validity. Although sold as "an alternative" to expensive litigation, it instead became the prelude, for over 80 percent of the new validity challenges involved infringement suits already in federal court. But unlike court proceedings that require clear and convincing evidence to invalidate an issued patent, the AIA allowed invalidation under the lower evidentiary standard of a mere "preponderance" — just greater than a fifty-fifty coin toss. And, in contrast to courts which require the challenger to have an economic interest in the patent, i.e. "standing," the AIA allows anyone, even a stockmarket short-seller, to challenge a patent.

The USPTO also used a different standard of interpreting the patent, thus making it easier for the challenger to prevail in the AIA review. The USPTO also ignored policy reasons authorized by the AIA for declining to entertain such challenges such as the impact on the economy or technological advancement. Further, while Congress assumed that amendments to patent claims would be freely permitted, the PTAB almost never allowed such amendments.

Importantly, federal court trials on patent validity use live testimony of expert and other witnesses so the decision-maker — whether judge or jury — can personally assess the witness's credibility. In contrast, the PTAB almost never hears live testimony. The PTAB administrative judges have almost zero experience assessing live testimony. They never see the witness being cross-examined before them. It's a wonder how the PTAB administrative judges can make credibility determinations merely on a written record.

⁷ Kappos, et al., *From Efficient Licensing to Efficient Infringement*, N.Y. Law Journal (Apr. 4, 2016).

⁸ See Engelken, *Opening the Door to Efficient Infringement: eBay, Inc. v. MercExchange, L.L.C.*, 2 Akron Intellectual Property Journal 57 (2008).

Not surprisingly, the rate of invalidations at the PTAB was very high — 80 percent plus to kill at least some claims and 60 percent plus to kill all. Various commentators have debated the precise statistics and their implication,⁹ but there was no question that invalidating patents before the PTAB appeared to be much easier than in a court of law. And because of that perception, marketplace behavior changed dramatically. For many investors, patents were too unreliable to justify investing in R&D and follow-on commercialization. Instead, they shifted to less risky alternatives such as entertainment and to foreign jurisdictions where patents are more reliable. By some economists' estimates, investment in early-stage research dropped 60 percent in the wake of growing PTAB impacts.

Start-ups and small companies were hardest hit. According to some studies, start-up formation fell 40 percent to a half-century low, and in 2014, for the first time ever, their death rate exceeded their birth rate.

IV. PATENT ELIGIBILITY LAW IS UNMOORED FROM THE STATUTE

Like the *eBay* decision, the effects of PTAB reviews took several years to manifest. But as stark as their combined impact was, the patent system meanwhile absorbed another massive blow, this time from other Supreme Court decisions, the quartet of *Bilski*, *Mayo*, *Myriad*, and *Alice* (collectively the “*Alice*” decisions).¹⁰

From 2010 through 2014, those decisions transformed the law of what types of inventions are even eligible for patent protection. Previously, patentability disputes focused on the merits of the invention, such as novelty and nonobviousness. *Alice* changed that. So-called *Alice* challenges are routinely advanced, often on early motions before any evidence, testimony, or claim construction has occurred. The results were catastrophic for patent owners, for the patents were usually invalidated. And the criteria used by courts were extremely vague and subjective. Thus the attempted analysis was frustrating to all involved, and the results were anything but consistent and predictable. With the additional unpredictability came further declines in patent values and business resolutions.

In the eligibility cases, the Supreme Court all but ignored the statute that, on its face, made four broad classes of inventions eligible for patenting. The Court decreed that these classes were subject to “implied exceptions” but gave little to no guidance on the bounds of those judicial exceptions. The Court was, in essence, claiming for itself the power to make broad national innovation policy, but it lacks the necessary experience or factual knowledge-base for doing so.

But the Supreme Court's assault on patent rights was not finished. Just this year, the Court in the *Oil States* case¹¹ upended considerable precedent by declaring patent rights to be mere “public franchises” that can be rescinded by the USPTO at any time for virtually any reason. The majority was not persuaded by Congress's instruction in the Patent Act that patents were to have the “attributes of personal property.” Nor did the *Oil States* majority follow the Court's earlier precedent comparing patent grants to land grants that were irrevocable and could be rescinded only in a court of law, not an administrative agency.

V. THE “PATENT TROLL” NARRATIVE OVERTAKES REASONED ANALYSIS

Throughout these developments, many companies and organizations were advancing the narratives that the “patent troll” is Public Enemy No. 1 and that “efficient infringement” is a better approach to responding to patent owners. Many of these companies are very large, very rich, multi-national companies, primarily in the Internet industry. These companies are commonly known as the FANGs, meaning Facebook, Apple, Amazon, Netflix, and Google (now Alphabet). Those were the very companies pressing Congress to pass the AIA, which made delaying court trials and invalidating patents easier in the first place. They employed a massive campaign combining public relations and lobbying firms along with supporting friendly academics to write favorable articles, not to mention enormous campaign contributions to members of Congress.

9 See Landau, Patent Progress, *A Little More Than Forty Percent: Outcomes At The PTAB, District Court, and the EPO* (May 1, 2018), at: <https://www.patent-progress.org/2018/05/01/a-little-more-than-forty-percent/>; Quinn et al., IPWatchdog, *PTAB Facts: An Ugly Picture of a Tribunal Run Amok* (Jan. 8, 2018), at: <http://www.ipwatchdog.com/2018/01/08/ptab-facts-ugly-picture-tribunal-run-amok/id=91959/>; USPTO, *PTAB Statistics* (May 11, 2018), at: <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/statistics>.

10 For more detailed analysis, see Michel & Dowd, *The Uncertain State of Patent Law 10 Years Into The Roberts Court*, IAM, Nov./Dec. 2016, at 27.

11 *Oil States Energy Services LLC v. Greene's Energy Group, LLC*, 138 S. Ct. 1365 (2018).

Over the course of nearly a decade, their messaging took hold, especially the exaggerated narrative suggesting that “patent trolls” were impoverishing them with baseless and abusive lawsuits. Of course, frivolous lawsuits exist in every area of law. And there was evidence of nuisance patent infringement suits. But most are well controlled and readily dismissed by watchful judges. In recent years, fee-shifting in favor of the defendant has tripled and deters much of this conduct.

But the endless advertisements and constant repetition of the narrative made it seem to members of Congress like established fact. It never was, but in Washington perception matters more than fact. Indeed, Google executives visited the Obama White House on average once a week over eight years — seven times more often than any other corporation — and a handful of Google executives were appointed to high-level executive-branch positions.¹² A former Google official was put in charge of the USPTO. With an \$18 million annual budget, Google conducted an extensive lobbying campaign. Many outside groups were formed under its initiation to advance the troll message. No wonder then that most witnesses called before congressional committees were supporting the Silicon Valley policy line.

The question arises as to why technology-based giant corporations built partly on patented technology now want to weaken patent rights. They still own many patents and continually file more patent applications. But the reasons seems apparent: They likely fear being overtaken by a new company with a new market-disrupting technology. They know the next Amazon or Google may be a small company with a patented technology. Now that the FANGs dominate their markets, they benefit from weaker patent rights; it makes it easier for them to acquire the next innovative start-up.

Indeed, there has been increased commentary suggesting that the FANGs ought to be scrutinized more closely under antitrust and competition laws. They are near-monopolies in certain markets, some with as much as 80 percent market share, and the internet industry is largely unregulated. This will be a discussion to watch closely.

VI. DECLINING PATENT VALUES AND A DECLINING U.S. PATENT SYSTEM LEAD TO DECLINING INVESTMENT AND INNOVATION

The triple hit of *eBay*, the AIA, and *Alice*, coupled with the simplistic “patent troll” and “efficient infringement” narratives, significantly weakened the American patent system. That showed up not only in the Chamber of Commerce ranking that dropped the U.S. out of the top ten but also in the Bloomberg ranking of overall innovation strength where the U.S. fell out of the top ten for the first time, ever.¹³

The falling value of U.S. patents is only part of the story, however. If the value of patents, on average, has fallen 60 percent, what about the true worth of our corporations? Unlike in decades past, a company’s valuation is highly dependent on intellectual property, including patents. But patents are not always reflected on a company’s balance sheets. A company thought to be a great deal may suddenly look far less valuable, when the decreased value of its intellectual property is considered.

The differential between the U.S. patent system and that of foreign jurisdictions, including Europe and China, concerns not only enforcement but also eligibility. The U.S. has narrowed the types of inventions considered eligible, but other countries have greatly widened theirs. Inventions that used to be eligible in the U.S. no longer are, and inventions that used to be ineligible in Europe and Asia now are.

Meanwhile, China has advanced in both rankings. China has also embarked on a truly massive surge of public investment in the technologies of tomorrow such as artificial intelligence, robotics, autonomous vehicles, and bio-technology, including gene editing and immunotherapy, among others. These used to be fields led by the United States, but China seems well on its way to surpassing the U.S.¹⁴

¹² Google Transparency Project, at: <https://googletransparencyproject.org/articles/googles-white-house-meetings>.

¹³ Jamrisko & Lu, *The U.S. Drops Out of the Top 10 in Innovation Ranking*, Bloomberg (Jan. 23, 2018), <https://www.bloomberg.com/news/articles/2018-01-22/south-korea-tops-global-innovation-ranking-again-as-u-s-falls>.

¹⁴ See Zaharia, *Trade War or Not, China is Closing the Gap on U.S. in Technology IP Race*, Reuters (Apr. 13, 2108), at: <https://www.reuters.com/article/us-usa-trade-china-intellectualproperty/trade-war-or-not-china-is-closing-the-gap-on-u-s-in-technology-ip-race-idUSKBN1HK187>.

For one thing, China has created specialized courts for patent cases, and they are operating vigorously to protect patent rights of Chinese and foreign owners alike.¹⁵ China has greatly expanded the size and capability of its patent office which now gets many more filings and issues more patents than the USPTO. Injunctions are becoming routine in China. And enforcement proceedings are faster, cheaper, and more predictable than in the U.S. Little wonder then that U.S. venture capital that used to be invested in the US is now flowing increasingly to China.

Europe is also benefiting from similar investments in U.S. funds, and for the same reasons: Trials are faster, cheaper, and more predictable, and injunctions are routine, especially in Germany.

The patent gap is particularly dangerous to future U.S. prosperity because innovation is our primary competitive advantage. The U.S. cannot compete on labor costs, nor on regulatory costs. In today's global economy, this disadvantage means ultimately that the U.S. standard of living could decline. Similarly, our capacity to create the new jobs necessary for an expanding population may be reduced.

VII. WHAT TO DO?

After more than a decade, the Supreme Court is unlikely to fix the current mess. It was given an opportunity in the *Sequenom* case, where several Federal Circuit judges pleaded with the Supreme Court to clarify the law. Feeling bound by Supreme Court precedent, the judges explained that the innovative pre-natal screening method was precisely the type of invention the patent system was designed to protect. Yet the Supreme Court declined.

The next logical stop would be the U.S. Congress, but, so far, the patent committees in the Senate and the House of Representatives have shown no willingness to do so. Instead, they seem stuck in old rhetoric about patent trolls.

Despite testimony from several experts, the House committee seems entirely unaware of the above developments and the harms caused by design defects in the AIA reviews, and exacerbated by the way in which the USPTO implemented them.¹⁶ The Senate Judiciary Committee has held no hearings on those issues. It had declined to provide a hearing, for example, on the bill introduced by Senator Coons that would fix many AIA problems.

Beyond the Congress and the Supreme Court, the new Director of the USPTO (Andrei Iancu) can effect certain limited reforms. The AIA granted him authority to provide greater clarity for examiners on eligibility law. But he too can do little that would be significant. Only the Congress can.

The Director can shift the claim construction method used by the PTAB from the lax “broadest reasonable interpretation” to the more rigorous *Phillips* standard. In fact, the Director has published a proposed regulation that, if finalized, would do just that. Similarly, the Director could screen challenges for the effect on the economy or the development of technology, as the AIA seems to contemplate. That would mean that, even if the petition meets the evidentiary standard of “more likely than not that a claim would be invalidated,” the challenge could nevertheless be rejected under existing statutory authority granted by the AIA.

The Director cannot make two additional changes that warrant consideration. One is the “preponderance of the evidence” standard used in AIA proceedings, as opposed to the “clear and convincing evidence” standard. The latter is used in courts and was approved by the Supreme Court in *Microsoft v. i4i*. The “clear and convincing evidence” standard recognizes that the patent was granted after lengthy examination by expert examiners and is consistent with the Patent Act’s mandate that issued patents are presumed valid.

The second issue is the “standing” requirement, or lack thereof. The AIA authorizes that “any person” other than the patent owner can file an AIA challenge. Stock short-sellers sought to make money by using AIA challenges to depress stock prices by the mere filing of a petition. Surely, that is not what Congress wanted or expected with AIA reviews.

¹⁵ See Zukus, *How China Is Emerging as a Leader in Global Innovation and IP Rights*, *The Diplomat* (July 7, 2017), at: <https://thediplomat.com/2017/07/how-china-is-emerging-as-a-leader-in-global-innovation-and-ip-rights/>.

¹⁶ One of the present authors (Michel) testified before the House Subcommittee on Courts, Intellectual Property and the Internet on July 13, 2017. He also provided a detailed supplemental statement to the subcommittee, which can be read here: <https://www.scribd.com/document/381649917/Supplemental-Statement-of-Paul-R-Michel-Sept-12-2017>.

Senator Coons has introduced a bill with ten specific changes, eight of which could be instituted by PTO regulation. Changes that could be made by PTO rule change could include allowing claim amendments liberally, encouraging live testimony when appropriate, and rejecting challenges based on the same or similar technology already considered by the examiners.

Additionally, the PTO could implement an ethics code for PTAB members like that governing judges in courts of law. That would prevent PTAB members sitting on panels to judge patent challenges brought by former clients when the member was in a law firm before being appointed to the PTAB. The purpose, of course, would be to prevent even the appearance of a conflict of interest. Another change might be to restrict the PTAB practice of enlarging a panel if its decision is viewed unfavorably by PTO management so the new panel can produce the opposite result.

The PTAB procedures, however, are far less harmful than the Supreme Court's eligibility chaos. Without doubt, that can only be overcome by Congress overruling the four cases, if it agrees to do so. Although several witnesses so suggested to the relevant committees, their chairs and ranking members showed only tentative interest and have taken no action as yet. In addition, the "efficient infringer" lobby will vigorously fight any such legislative proposal even if some member is brave enough to propose such a fix. At least two members of the House are reportedly considering doing so, but it can be effectively blocked by committee leaders who can decline to provide hearings or committee votes on any such bills. Therefore, at least under current conditions, the prospects for passage seem dim.

In any event, why is it so easy to commence an AIA challenge? It is, in part, because too many patents deliberately contain some over broad claims. The AIA challenge can proceed if any claim is seen as likely to be invalidated. And federal trial judges, too few in number, are so backlogged that they are eager in most cases to "stay" the patent infringement case to await the outcome of the PTAB's decision. And given the high invalidation rate at the PTAB, such calculations are understandable. All this is unlikely to change because all administrations are slow to nominate judges to fill existing vacancies and there are too few district court judgeships in the first place.

Like the Supreme Court, Congressional committees responsible for the patent system seem largely oblivious to market forces and global impacts. Consider the timing effects of delayed infringement trials. Of course, if all the claims asserted in court are invalidated, the case disappears, and everyone saves time and money. But there are many cases in which most or all asserted claims survive the review. If after the court case resumes it results in a damage award to the patent owner, it may seem to be made whole — between the award and interest added to the judgement. But from the investment perspective, three years of delay have been added. Investors, however, are concerned with "time to money" as well as risk of no return on their investment. So, they face an increased risk of invalidation compared to pre-AIA and increased delay and expense because of the cost of defending the review, and often many separate reviews, and the stays. The net effect is to substantially reduce the incentive to invest at all. For very rich companies with ample cash, this may not matter. But for start-ups and small firms, it matters a lot. They may not get the continual infusions of money on which their success, even their survival, may depend.

Does Congress see the full picture including the plight of start-ups who lack lobbyists for the most part? Or, is it overly focused on the situation of the giant incumbents with armies of lobbyists and PR firms? There are only about 30 companies in the efficient infringement business. What of the rest? Well, America has 30,000 commercial companies with at least 100 employees. Although many may not depend on investments assured by patents, thousands surely do. To date, the policy debates on Capitol Hill have been dominated by the giants, the ones who do not depend on external investments by venture capital firms and the like.

In like fashion, does the Congress realize the eligibility mess is driving U.S. investments overseas to jurisdictions with wider eligibility standards? Those jurisdictions, including Germany and the rest of Western Europe and China and most of the rest of Asia, have other comparative advantages as well. They include faster cheaper, trials and routine injunctions. When wider eligibility is added into the analysis, no wonder investments now head outward. In today's world, money is mobile — globally and instantly. Investment decisionmakers are unsentimental, and they seek the best ROI — "Return on Investment." Neither the Court nor the Congress seems alert to these crucial realities.

CONCLUSION

In conclusion, the combined effect of judicial decisions and legislative patent initiatives over the last ten-plus years has fundamentally altered the value of U.S. patent rights. The result is “innovation uncertainty,” and this is bad news for the U.S. economy. While some judicial and legislative reforms were needed, the response has been a serious over-correction, driven in large part by lobbying efforts advancing the “patent troll” and “efficient infringement” narratives.

Similarly, the Supreme Court eligibility cases were based on a vague assumption that vast arrays of inventions not qualifying for patenting were out there in the form of wrongly-issued patents that were causing grave economic harm.

It is time to recalibrate and re-adjust patent policy to conform to economic reality and global competition. It is time for competition policy to rein in the overreach of the internet giants. Congress and competition authorities are up to the job. Let them begin before it is too late.

