

STATEMENT OF

Adam Mossoff

Professor of Law,
Antonin Scalia Law School
George Mason University

BEFORE THE

COMMITTEE ON THE JUDICIARY
Subcommittee on Intellectual Property

United States Senate

“Innovation in America: How Congress Can Make Our Patent System STRONGER”

SEPTEMBER 11, 2019

I. Introduction

Chairman Graham, Chairman Tillis, Ranking Member Feinstein, Ranking Member Coons, and Members of the Subcommittee:

Thank you for this opportunity to speak with you today about why Congress should restore reliable and effective patent rights by enacting the STRONGER Patents Act.¹

Until recently, the United States patent system was known as the “gold standard” among world patent systems.² David Kappos, the former Director of the U.S. Patent & Trademark Office (USPTO), once remarked that the U.S. patent system was “the greatest innovation engine the world has ever known.”³ Patented innovations drove the Industrial Revolution in the nineteenth century, the computer and biotech revolutions of the twentieth century, and the mobile revolution of the early twenty-first century.⁴ Unfortunately, the ability of the U.S. patent system to foster the next generation of innovations in AI, the Internet of Things, and 5G is now in doubt.

¹ Professor Mossoff is speaking on his own behalf, and his testimony does not reflect the views of his employer or of any institution or organization with which he is affiliated.

² See Kevin Madigan & Adam Mossoff, *Turning Gold to Lead: How Patent Eligibility Doctrine is Undermining U.S. Leadership in Innovation*, 24 GEO. MASON L. REV. 939 (2017).

³ Innovation Act of 2013: Hearing on H.R. 3309 Before the Comm. on the Judiciary, 113th Cong. (Oct. 29, 2013) (statement of David J. Kappos, Partner, Cravath, Swaine & Moore LLP), at 2.

⁴ See Madigan & Mossoff, *supra* note 2 (identifying how the patent system facilitated biotech and computer revolutions); Adam Mossoff, *A Brief History of Software Patents (and Why They’re Valid)*, 56 ARIZ. L. REV. SYLLABUS 62, 79 (2014) (“The American patent system has succeeded because it has secured property rights

Over the past decade, the U.S. patent system has been under an extensive amount of stress from all branches of the federal government. The U.S. patent system has been transformed by new legislation,⁵ regulatory actions,⁶ and numerous decisions by the Supreme Court changing all areas of patent doctrine. These widespread and systematic changes have affected, among many others, infringement remedies,⁷ licensing activities,⁸ and what types of inventions and discoveries are eligible for patent protection.⁹ Inventors, universities, and companies working in the U.S. innovation economy have faced more than a decade of extensive legal changes to the patent system. Notably, almost all of these “reforms” over the past ten to fifteen years have eliminated patent rights, imposed new restrictions on patent owners, and created new legal doctrines or institutions with little basis for predicting how they might be applied in the future.¹⁰

in the new innovation that has come about with each new era—and it has secured the same property rights for all types of new inventions, whether in the Industrial Revolution or in the Digital Revolution.”).

⁵ See Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 248 (2011) (codified in scattered sections of 35 U.S.C.). There have been many bills introduced in Congress in the past eight to ten years, which, until the recent STRONGER Patents Act and the RALI Act, all proposed further restrictions of patent owners’ rights. See, e.g., Venue Equity and Non-Uniformity Elimination Act of 2016, S. 2733, 114th Cong. (2016); Innovation Act, H.R. 9, 114th Cong. (2015); Innovation Act, H.R. 3309, 113th Cong. (2013); Saving High-Tech Innovators from Egregious Legal Disputes Act of 2013, H.R. 845, 113th Cong. (2013).

⁶ See Press Release, Federal Trade Commission, FTC Finalizes Settlement in Google Motorola Mobility Case, (July 24, 2013), <https://www.ftc.gov/news-events/press-releases/2013/07/ftc-finalizes-settlement-google-motorola-mobility-case> (discussing the FTC’s approval of Google/Motorola merger in which Google made concessions on enforcement of its standard essential patents); see also Letter from Renata B. Hesse, Acting Assistant Att’y Gen., U.S. Dep’t of Justice, Antitrust Division, to Michael A. Lindsay, Esq., Dorsey & Whitney LLP (Feb. 2, 2015), <https://www.justice.gov/atr/response-institute-electrical-and-electronics-engineers-incorporated> (refusing to challenge the Institute of Electrical and Electronics Engineers’ (“IEEE”) adoption of controversial changes to its Intellectual Property Rights (“IPR”) policies).

⁷ See *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392-93 (2006) (determining that an injunction should not be automatically issued based on a finding of infringement).

⁸ See *Impression Prods., Inc. v. Lexmark Int’l, Inc.*, 137 S. Ct. 1523 (2017) (holding that patent owners exhaust all rights in conveyances of patented products in the marketplace); *Bd. of Trustees of Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc.*, 563 U.S. 776, 789-90 (2011) (holding that the Bayh-Dole Act does not automatically vest title to federally funded inventions in federal contractors); *Quanta Comp. v. LG Elec., Inc.*, 553 U.S. 617 (2008) (holding that any authorized sale of a patented product exhausts all patent rights in that product); *Quanta Comp. v. MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 137 (2007) (holding that a licensee does not forfeit the right to challenge a licensed patent by signing a license agreement).

⁹ See *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014) (holding that a computer program that facilitated financial transactions and mitigated risk is an abstract idea and not patent subject matter); *Ass’n. for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107 (2013) (holding that isolated DNA is not patentable subject matter); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012) (holding that a medical treatment method is not patentable subject matter); *Bilski v. Kappos*, 561 U.S. 593 (2010) (holding that a business method patent on hedging investment risk is not patentable subject matter).

¹⁰ See Adam Mossoff, *Weighing the Patent System: It Is Time to Confront the Bias Against Patent Owners in Patent “Reform” Legislation*, WASH. TIMES (Mar. 24, 2016), <https://www.washingtontimes.com/news/2016/mar/24/adam-mossoff-weighing-the-patent-system/> (“The absence of any acknowledgment that reform of the PTAB is just as pressingly important as venue reform . . . is the latest example of a strikingly one-sided, biased narrative of the past several years about patent ‘reform.’”); Madigan & Mossoff, *supra* note 2 (identifying how patent eligibility doctrine was recently severely restricted by the Supreme Court contrary to historical norms in the U.S. patent system).

This one-two punch of weakening patents and sowing legal uncertainty is not merely an academic concern. Economists and historians have long recognized that reliable and effective property rights in inventions, issued and enforced by stable legal institutions governed by the rule of law, were essential in the success of the patent system in driving the U.S. innovation economy.¹¹ In the past decade, courts, agencies, and Congress have expunged from the U.S. patent system the essential characteristics that made it the “gold standard” as an “innovation engine”—reliable and effective property rights, stable legal institutions, and the rule of law.

This is why it is necessary to enact the STRONGER Patents Act. The STRONGER Patents Act is not a panacea for all of the ills that have befallen innovators, but it addresses two primary sources of uncertainty, instability and weakness in the U.S. patent system today: (1) the willy-nilly operations of the Patent Trial & Appeal Board (PTAB), an administrative tribunal created by Congress in 2011 to cancel issued patents, and (2) the Supreme Court’s 2006 decision in *eBay v. MercExchange*, which has led to a significant drop in the ability of *all* patent owners to receive injunctive relief for ongoing infringement of their valid patents. These two institutional and legal developments have created a cloud over the titles of patents. They have contributed significantly in undermining the ability of individual inventors, startups, and universities to obtain venture capital financing and for these innovators to engage in licensing and other commercial activities in the marketplace.¹² Thus, they have clogged the gears of the “innovation engine” that has driven economic growth, jobs, and flourishing lives for two hundred years.

My comments today address these two recent changes to the patent system and why reform by Congress is needed in enacting the STRONGER Patents Act.

II. Why Statutory Reform of the PTAB is Necessary

Congress created the PTAB in the Leahy-Smith America Invents Act of 2011 (AIA) with the intention that this new administrative tribunal would efficiently cancel patents that were mistakenly issued by the USPTO. This administrative tribunal quickly became another example of the classic cliché of the law of unintended consequences. The reason is that Congress imposed almost no procedural or substantive restrictions on this administrative tribunal’s operations aside from its express mission to cancel patents as quickly and cheaply as possible.

¹¹ See, e.g., B. ZORINA KHAN, *THE DEMOCRATIZATION OF INVENTION: PATENTS AND COPYRIGHTS IN AMERICAN ECONOMIC DEVELOPMENT, 1790–1920* (2005). In contrast to British patent law, for example, “U.S. doctrines emphatically repudiated the notion that the rights of patentees were subject to the arbitrary dictates of government.” *Id.* at 51. See also Adam Mossoff, *Institutional Design in Patent Law: Private Property Rights or Regulatory Entitlements*, 92 SO. CAL. L. REV. ___ (forthcoming 2019) (reviewing economic and historical evidence and explaining how securing patents as private property rights in stable legal institutions governed by the rule of law was essential to the success of the U.S. patent system and how it became a gold standard for other countries).

¹² The link between patent ownership and the ability to secure venture capital finds strong support in economic research. See Joan Farre-Mensa, Deepak Hegde & Alexander Ljungqvist, *What Is a Patent Worth? Evidence from the U.S. Patent ‘Lottery,’* JOURNAL OF FINANCE (forthcoming), USPTO Economic Working Paper No. 2015-5 (June 25, 2019), <https://ssrn.com/abstract=2704028>; Stuart J.H. Graham & Ted Sichelman, *Patenting by Entrepreneurs: An Empirical Study*, 17 MICH. TELECOMM. & TECH. L. REV. 111 (2010); Stuart J.H. Graham, et al., *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 BERKELEY TECH. L.J. 1255 (2009).

Without any structural limitations imposed on this administrative tribunal, the PTAB ran amok in both its procedures and in its substantive decisions. PTAB practices implicating basic rule of law and broader constitutional concerns are now characterized by judges and commentators as “shenanigans.”¹³ Judge Evan Wallach has expressed concerns that the PTAB’s decision-making processes like panel stacking raise “fundamental rule of law questions.”¹⁴ Judge Jimmie Reyna has noted that the PTAB’s assertion of “unchecked discretionary authority is unprecedented.”¹⁵

As a result of these and other procedural problems, the PTAB’s substantive rules and its high rates of invalidating patents have earned its administrative judges the moniker of “death squads.”¹⁶ This metaphor has proven apt, even if rhetorically exaggerated. Since it began operations, the PTAB’s invalidation rates have ranged between 64% to 98%, depending on the review programs selected by petitioners seeking to cancel a patent (IPR, PGR, or CBM).¹⁷ Despite the strong rhetoric of “death squads” that “kill” patents, the data on cancellation rates confirms an institution out of balance. In fact, when asked about this label, then-Chief Judge of the PTAB, James Smith, embraced it, stating, “If we weren’t, in part, doing some ‘death squadding,’ we would not be doing what the [AIA] statute calls on us to do.”¹⁸

As a result, the PTAB has contributed significantly to both sowing widespread legal uncertainty and deteriorating the reliable and effective patent rights relied on by stakeholders in the innovation economy, especially in the biopharmaceutical and high-tech sectors. If anything, this is confirmed by the reforms recently implemented by the current Director of the USPTO, Andrei Iancu, who has reversed some of the regulations adopted by the previous Director of the USPTO in the past administration. Director Iancu also speaks regularly about the importance of reliable

¹³ See *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2155 (2016) (Alito, J., concurring in part and dissenting in part) (“Can Congress really have intended to shield such shenanigans from judicial scrutiny?”). Cf. Gene Quinn, *Parlor Tricks and Shell Games: How the Invisible Hand of the PTAB Supports Challengers*, IPWatchdog.com (Aug. 20, 2018), <https://www.ipwatchdog.com/2018/08/20/parlor-tricks-shell-games-ensure-invisible-hand-ptab/> (Describing an example “of trial by ambush that has become common at the PTAB. Panels are expanded without warning or explanation. APJs not assigned to cases deliberate with APJs assigned, which is a clear violation of the Administrative Procedures Act.”).

¹⁴ See Saurabh Vishnubhakat, *Disguised Patent Policy Making*, 76 WASH. & LEE L. REV. ___ (2019 forthcoming), available at <https://ssrn.com/abstract=3242146>, at 10 (quoting Judge Evan Wallach in the oral argument in *Wi-Fi One, LLC v. Broadcom Corp.*, Nos. 2016-1944, -1945, -1946 (Fed. Cir. May 4, 2016)).

¹⁵ *Shaw Industries Group, Inc. v. Automated Creel Systems, Inc.*, 817 F.3d 1293, 1302 (Fed. Cir. 2016) (Reyna, J., concurring).

¹⁶ Peter Pitts, *Patent Death Squads vs. Innovation*, WALL ST. J. (June 10, 2015), <http://on.wsj.com/2qy6tE6>; Ryan Davis, *PTAB’s ‘Death Squad’ Label Not Totally Off-Base*, LAW360 (Aug. 14, 2014), <http://bit.ly/2p2JPDo>.

¹⁷ See Samson Vermont, *IPR Statistics Revisited: Yep, It’s a Patent Killing Field*, PATENTATTORNEY.COM, Feb. 8, 2017, <https://www.patentattorney.com/ipr-statistics-revisited-yep-its-a-patent-killing-field/> (concluding that for IPR reviews “in about 64% of petitions, one or more of the claims will not survive”); Robert R. Sachs, *AliceStorm Update for Q1 2017*, BILSKI BLOG, April 6, 2017, <http://www.bilskiblog.com/blog/2017/04/alicestorm-update-for-q1-2017.html> (reporting an invalidation rate in CBM review at the PTAB of 97.8%).

¹⁸ Davis, *supra* note 16 (quoting Chief Judge Smith).

and effective patent rights as essential to driving new innovation and fostering economic growth.¹⁹

Director Iancu is to be lauded for these endeavors and for his efforts at correcting a one-sided, biased narrative about the patent system that contributed to a moral panic about patents in Washington, D.C., in the past decade. But Director Iancu’s regulatory reforms can easily be undone, either by court challenge or simply by repeal by the next Director of the USPTO who decides to return back to the “shenanigans” at the PTAB under the previous administration. Thus, Director Iancu’s measured and important regulatory reforms cannot provide long-term permanence and stability. Inventors and companies making long-term R&D investment decisions need to rely on stable legal institutions operating under the rule of law in order to create innovative medical treatments, smartphones, AI, and other cutting-edge technologies.

The PTAB must be fixed structurally, not merely in its regulatory rules and procedures. The courts cannot or will not achieve this much-needed reform; when called upon to redress these fundamental concerns about the rule of law and respect for the property rights long vested in patents, the courts have instead granted the PTAB the same broad deference they have given to other administrative agencies.²⁰ Thus, the problems have gone uncorrected and unchecked.

Congress can only provide this much-needed reform by amending the provisions of the AIA that created the PTAB in the first place. Congress must “hardwire” into the institutional structure of the PTAB the checks and balances imposed on all legitimate governmental institutions, which prevent procedural abuses and substantive biases from infecting their day-to-day operations. The STRONGER Patents Act achieves this, by directly addressing many of the common mistakes or outright abuses of power that have occurred at the PTAB since it began operations in 2012.

As explained in the sub-sections that follow, the PTAB has engaged in “death squadding” of patents by adopting procedures that have made it easier to cancel patents challenged before it.²¹ These regulatory rules are fundamentally different from the legal rules long used by federal courts if a defendant made the same arguments in court that a patent was improperly or mistakenly issued by the USPTO. As a result of these differences, there is a meaningful risk that the PTAB is an administrative tribunal that is unfairly stripping inventors of their constitutionally protected property rights.²² The STRONGER Patents Act addresses these core constitutional and

¹⁹ See, e.g., Remarks by Director Iancu at the New York Intellectual Property Law Association (Mar. 22, 2019), <https://www.uspto.gov/about-us/news-updates/remarks-director-iancu-new-york-intellectual-property-law-association> (“With their creations, inventors help us march to the highest civilization. We owe them and the public a system of laws that they can understand, that they can predict, and that they can rely upon.”); Remarks by Director Iancu at the U.S. Chamber of Commerce: Driving American Innovation Policy Conference (Feb. 25, 2019), <https://www.uspto.gov/about-us/news-updates/remarks-director-iancu-us-chamber-commerce-driving-american-innovation-policy> (“[W]e must work to ensure a more reliable and predictable legal framework that stimulates innovation.”).

²⁰ See *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131 (2016).

²¹ See Alden Abbott et al., *Crippling the Innovation Economy: Regulatory Overreach at the Patent Office* (Aug. 14, 2017), released by the Regulatory Transparency Project of the Federalist Society at <https://regproject.org/wp-content/uploads/RTP-Intellectual-Property-Working-Group-Paper.pdf>.

rule of law infirmities in the PTAB by “hardwiring” into this administrative tribunal necessary checks and balances that restrain legitimate governmental institutions and actors.

A. Conflicting Legal Standards between the PTAB and Courts

The PTAB has applied a different legal standard for interpreting patents than courts, although this was one of the first reforms implemented by Director Iancu in 2018 after the Senate confirmed his appointment as Director of the USPTO.²³ This is a highly technical legal issue, but in sum the PTAB standard made it much easier to invalidate patents. This one rule by itself is likely the single most important rule at the PTAB—it explains the high invalidation rates and it calls into question whether this agency respects the basic protections of the rule of law provided under the Constitution for all property owners.

The key issue is that in any dispute involving a legal document—whether a contract, the title deed to a house, or a patent—the judge must first interpret the document. The parties usually interpret the words in the document differently, and these interpretations usually lead to different outcomes. Thus, for centuries, courts have developed and applied legal rules governing how documents are to be interpreted. All parties, on either side of a dispute, must know beforehand how a legal authority will interpret documents and allocate rights. The rules governing “how the legal authority will interpret” documents must be fixed and clear. The ability to hold legal decision-makers accountable to stable principles is a basic feature of the rule of law.

For patents, there are two different points in the life cycle when official interpretation must occur. The first is during the patent application process. At this point, the examiner interprets the boundaries of a patent as broadly as is reasonably possible. In other words, the language in the patent application is given the broadest interpretation that can be reasonably supported by the evidence. The result is assessed in light of prior patents, scientific publications, and other prior art. This provides a “stress test” of the application. The broader the language of an application, the more broadly the patent will sweep if the examiner allows the patent—and the more likely it will be that the invention as described in the patent application will run up against something already known to people in the field and thus fail the novelty requirement or one of the other legal requirements for obtaining a patent.

Thus, by assuming the broadest potential patent scope and evaluating that against the legal requirements for patentability, patent examiners systematically protect the public from overbroad patents being issued to inventors. As a result, applicants rarely expect that their initially proposed

²² See John M. Golden, *PTO Panel Stacking: Unblessed by the Federal Circuit and Likely Unlawful*, 104 IOWA L. REV. 2447, 2449-50 (2019) (explaining that “panel stacking is constitutionally suspect under the Fifth Amendment’s Due Process Clause” and that this may “spur[] Congress to consider revisiting the PTO’s peculiar adjudicatory structure”); Adam Mossoff, *Statutes, Common Law Rights, and the Mistaken Classification of Patents as Public Rights*, 104 IOWA L. REV. 2591 (2019) (identifying how patents share the same legal provenance in both statutes and common law decisions as property rights in land and how this is relevant for the protection of patents under the Due Process Clause and Takings Clause); Adam Mossoff, *Patents as Constitutional Private Property: The Historical Protection of Patents under the Takings Clause*, 87 B.U. L. REV. 689, 700-711 (2007) (identifying extensive case law applying the Takings Clause to patents as “private property”).

²³ See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,342 (Oct. 11, 2018) (to be codified at 37 C.F.R. pt. 42).

patent language will actually survive examination. They continually narrow and revise that language in response to examiner actions, until both the examiner and the applicant converge on patent language that acceptably “claims” a patentable invention.

The second point when official interpretation of a patent occurs is during enforcement in the courts. At this stage, when a patent owner accuses someone of infringement, the purpose of interpreting the patent is not to invalidate it. Rather, the purpose of interpretation is to confirm if the allegedly infringing product or service in fact is covered by the patent. For nearly two centuries, courts have respected the rigor of the application process by presuming that an issued patent is valid.²⁴ As a result, courts apply a standard of basic reasonableness in construing the terms in a patent: the words in the patent are given the plain and ordinary meaning that they would have to anyone with ordinarily skill in that field of technology or science.²⁵ Courts apply this standard even when the accused infringer challenges the validity of the patent, if only because the patent was already examined and the function of the court proceeding itself is not to invalidate the patent but to ensure that it is reasonably interpreted in both its enforcement and validation. This standard, which is similar to legal standards for interpreting other legal documents, such as contracts and statutes,²⁶ ensures justice to the patent owner and respects the nature of the patent as a legal property right.

When Congress created the PTAB in the AIA in 2011, it did *not* specify the legal standard that the PTAB should use when interpreting the patents challenged by the petitioners before this administrative tribunal. It is telling that the PTAB first chose to adopt not the standard that courts have long used for patents issued by the USPTO, but instead the standard that examiners use when evaluating a patent application. This was consistent with the view that their mission was to engage in patent “death squadding.”²⁷ It is, however, inconsistent with the deference that federal courts give to the USPTO examination process from which issued patents emerge. By reverting to the broadest reasonable interpretation for already-issued patents, the PTAB completely discounts the examination process administered by its own colleagues within the same agency.

This disregard poses serious concerns about lack of due process and equal protection of basic property rights. There is a concern that the same patent presented with the same invalidity challenge with the same evidence is subjected to different legal rules depending on whether it is a court or the PTAB. Predictably, as a result of these different legal standards, there have already been conflicts between court judgments and PTAB decisions concerning the validity or invalidity

²⁴ See, e.g., *Microsoft Corp. v. i4i Ltd. Partnership*, 564 U.S. 91, 107 (2011); see also *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359 (Fed. Cir. 1984) (noting that the presumption of validity is rooted in “the basic proposition that a government agency such as the then Patent Office was presumed to do its job”). The presumption of validity was adopted by courts long before adoption of the examination system for patent applications in 1836. Courts applied the same rules for interpreting patents as they had applied to title deeds defining other property rights, which meant they interpreted patents liberally in favor of their owners given that they are property rights. See Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context*, 92 CORNELL L. REV. 953, 970, 958-959 (2007).

²⁵ See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005).

²⁶ See *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015).

²⁷ See Davis, *supra* note 18.

of the exact same patent (as discussed in the next section). But aside from these more fundamental concerns, there are still concerns even within the domain of patent law itself.

The PTAB's use of the broadest reasonable interpretation treats the petitioner's challenge no better than an original patent application, full of uncertainty and contingency, even though the patent has already issued and is now a vested property right.

If the PTAB is essentially repeating the original examination process, however, then patent owners should at least receive the same rights that patent applicants have in the examination process. But these basic rights have been denied at the PTAB. A patent applicant may amend its application in response to the stress testing of the broadest reasonable interpretation, which allows the applicant and examiner to reach mutually acceptable language in the patent claiming the invention. For patent owners subjected to a PTAB review process, however, the right to amend is heavily restricted. Notably, the AIA expressly provides that patent owners have the right to amend their patents during the PTAB process, but only once and it leaves subsequent requests for amendment to the discretion of the PTAB.

Despite the limited right of a right to amend provided in the AIA, the PTAB has proven quite hostile toward requests by patent owners to amend their patents. As of 2016, it had granted only 5% of the total requests to amend patent, denying 95% of the requests.²⁸ The PTAB ostensibly justifies the 95% denial rate given the strict one-year deadline imposed on it in the AIA to reach its decisions, but even this justification has drawn sharp rebuke from the courts. For example, in a late 2016 case, the Federal Circuit held that the PTAB's denial of a request to amend had failed even the most deferential, pro-agency standard in U.S. administrative law.²⁹ Under this standard, even incorrect or flawed agency actions can survive so long as the agency did not behave in an "arbitrary and capricious" manner, but the Federal Circuit concluded that the PTAB was arbitrary and capricious in enforcing its own rule prohibiting amendments.³⁰ Still, the Federal Circuit continues to send mixed signals on this matter, such as reversing the PTAB in one of the rare times that the PTAB permitted a patent owner to amend during an IPR.³¹

Director Iancu's reform efforts confirm that patent owners have been denied their statutory right to amend their patents at the PTAB, as he is proposing regulatory changes that would make it possible for patent owners to amend their patents during PTAB hearings. Similar to the change in

²⁸ USPTO, *Patent Trial and Appeal Board Motion to Amend Study* (Apr. 30, 2016), <http://bit.ly/1Vxhtho>. As of April 30, 2016, the Board had instituted and completed 1539 trials (either through post-institution termination due to settlement, request for adverse judgment, dismissal, or in a final written decision). In 192 completed trials, the patent owner had filed a motion to amend. The panel decided the motion to amend in 118 of the 192 completed trials. (In the others, the motion to amend: (a) was requested to cancel claims, (b) was rendered moot because the panel found the claims patentable, or (c) was not decided because the case terminated prior to a final written decision.) Of the 118 motions to amend that were decided, a panel granted or partially granted 6 motions (5%) and denied 112 motions (95%).

²⁹ *Veritas Tech v. Veeam Software*, 835 F.3d 1406 (Fed. Cir. 2016).

³⁰ *Id.* at 1413-14.

³¹ *See Shinn Fu Co. of America, Inc. v. The Tire Hanger Corp.*, 701 Fed.Appx. 942 (Fed. Cir. 2017) (unpublished); *see also* Matthew Bultman, *Fed. Circ. Tosses Rare Patent Amendment Win At PTAB*, LAW360 (July 3, 2017), <http://bit.ly/2tWEQWo>.

the legal standard for interpreting patents, this is a laudatory development, and it will do much to bring balance back to this administrative tribunal. But it can be undone by regulatory fiat by a future USPTO Director who seeks to return the PTAB back to its operational practices before Director Iancu was appointed as Director of the USPTO. Congress should enact the STRONGER Patent Act to ensure *permanent* reform at the PTAB, providing the long-term stability and certainty in patents that is required for growth in the innovation economy.

In sum, PTAB administrative judges have broadly construed issued patents in the same way that an examiner would interpret a patent application, making it much easier to invalidate the patent in light of pre-existing technology. When patent examiners broadly construe patent application language during the examination process, this is merely a first step in forcing the applicant to rewrite the patent application, so that the claimed scope of the invention is narrowed to elements that are in fact patentable. In contrast the PTAB routinely prohibits amendments, which means it routinely invalidates patent rights that could be revised and preserved by accommodating new information. This explains in part the inordinately high invalidation rates at the PTAB in comparison with federal courts—which have long interpreted patents under the same rules that apply to all legal documents securing secure private rights of contract or property.

In *Cuozzo Speed Technologies v. Lee*, the Supreme Court allowed the PTAB’s use of the broadest reasonable interpretation standard for interpreting patents it reviewed for invalidity, but not because the Court believed that this standard was correct.³² Rather, the Court held that the AIA is ambiguous about the proper legal standard for interpreting issued patents and thus under existing administrative law, it merely deferred to the PTAB’s decision as an administrative agency in adopting a different standard from that used by courts. Notably, in reaching its decision that the PTAB’s use of a different legal standard for interpreting patents was a colorable exercise of its authority as an administrative agency, the Supreme Court assumed that patent owners have a meaningful ability to amend their claims, as expressly provided in the AIA. As discussed above, this assumption is highly questionable, and the PTAB’s denial of 95% of requests to amend suggests that it is false. The Court expressly declined to decide whether the “broadest reasonable interpretation” standard is the best approach as a matter of policy.

B. Conflicting Evidentiary Standards between the PTAB and Courts

Since a patent is a property right secured to its owner after an examination process at the USPTO, anyone challenging a patent as invalid in court must meet a high standard of proof. This high standard of proof was adopted by early American judges precisely because they understood patents to be titles securing property rights in inventions in the same way that title deeds secure property rights in land.³³ Since then, this high standard has also been justified by the examination process that all patent applications go through before a patent is granted to an inventor.³⁴ Thus, to prevail in court it is not enough that the defendant’s views are supported by some evidence, or

³² See *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131 (2016).

³³ See Mossoff, *Who Cares*, *supra* note 25.

³⁴ See *i4i Ltd. Partnership*, 564 U.S. at 95-98 (discussing presumption of validity and clear and convincing evidence requirement); *Intervet Am., Inc. v. Kee-Vet Labs., Inc.*, 887 F.2d 1050, 1054 (Fed. Cir. 1989) (“The presumption of validity under 35 U.S.C. § 282 carries with it a presumption the examiner did his duty and knew what claims he was allowing.”).

even that the defendant’s position is more likely than not correct. Instead, there must be “clear and convincing” evidence that the USPTO made a mistake in granting the patent, which is the highest standard of proof imposed on litigants in civil lawsuits. The Supreme Court has expressly affirmed the clear and convincing evidentiary standard for invalidating a patent in court as legitimate and rightly based in longstanding law and policy.³⁵

By contrast, the PTAB has applied a much, much lower burden of proof to invalidate a patent that it reviews. A challenger may invalidate an issued patent merely by establishing that invalidity is “more likely” than not correct. As a result, it is much easier to invalidate patents in a PTAB administrative hearing than in a federal court proceeding. This has invited a proliferation of PTAB petitions and has created conflicts between the PTAB and the courts over the validity of the same patents that are reviewed by both legal institutions.

In a recent decision, the Federal Circuit concluded that the PTAB could invalidate a patent right that was previously upheld by a federal district court and by the Federal Circuit itself. Citing the lower burden of proof that the PTAB accepts, the court simply conceded that inconsistent results are a *fait accompli* under the new this new state of affairs.³⁶ The Supreme Court also recognized in *Cuozzo* that “the possibility of inconsistent results is inherent” in the PTAB’s design.³⁷

In addition to the fundamental separation of powers concerns in permitting an Article I administrative tribunal’s decision trump an Article III court’s decision concerning the validity of a legal right,³⁸ permitting fundamental conflicts like this between the legal institutions governing patents sows uncertainty and eviscerates patents as reliable and effective property rights. The STRONGER Patents Act expressly addresses these constitutional and practical concerns by requiring the PTAB to follow the same evidentiary standard in Article III courts and providing priority to Article III court decisions over PTAB decisions.

C. Stacking of Panels in PTAB Hearings to Reach Preordained Results

After the PTAB began its operations, another structural failure in this administrative tribunal was revealed dramatically to patent owners. The first Chief Judge of the PTAB, James Smith, stacked the panel of administrative judges who sat in judgment of patents in PTAB hearings. The AIA did not specify how the USPTO would constitute the panels of PTAB judges who would hold hearings, leaving it to the discretionary authority of the agency. The likely assumption was that the USPTO would determine the appropriate panel sizes and would follow this decision as a basic requirement of the rule of law. The USPTO initially set the panel size at three judges, following similar practices in other administrative agencies and in appellate courts. It usually

³⁵ See *i4i Ltd. Partnership*, 564 U.S. at 95.

³⁶ *Novartis AG v. Noven Pharm. Inc.*, 853 F.3d 1289 (Fed. Cir. 2017).

³⁷ *Cuozzo Speed*, 136 S. Ct. at 2146.

³⁸ The Supreme Court held in *Oil States Energy Services, LLC v. Greene’s Energy Group, LLC*, 138 S. Ct. 1365 (2018) that the operations of the PTAB in canceling patents did not raise a separation of powers problem, but it did not address this specific question of conflicting judgments between the PTAB and an Article III court judgment. There are significant reasons that there are these concerns and that, in this context, a separation of powers problem could still be a viable claim by a patent owner. See Mossoff, *Statutes, Common Law Rights, and the Mistaken Classification of Patents as Public Rights*, *supra* note 22.

follows this practice, unless a panel reaches decision that the Chief Judge of the PTAB or the Director deems improper, and then the agency used its discretionary authority to stack the panels by adding judges until the newly constituted panels reached the “right” result.

In *Target Corp v. Destination Maternity Corp.*,³⁹ for example, Chief Judge Smith expanded the PTAB panel *twice* after he concluded that the first two panel decisions reached the wrong result in ruling in favor of the patent owner solely on the basis of the panel’s interpretation of § 311 of the Patent Act; he stopped adding PTAB judges to the panel only when the third panel held a third hearing and reached a result clearly acceptable to him—the statute was construed differently and the patent was invalidated. In this case, the original panel of three judges grew to *five* judges, and finally in the third iteration of the panel, to a total of *seven* judges.

Unfortunately, the *Target* case was not an outlier. The ostensive justification for panel stacking at the PTAB is to achieve uniformity between different PTAB panels that reached conflicting results. The Federal Circuit acknowledged this justification of panel stacking in *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*,⁴⁰ which involved a due process challenge to the panel stacking practice that was deemed to be moot given the Federal Circuit’s decision that the patent was invalid.⁴¹ In a concurring opinion, Judge Timothy Dyk (joined by Judge Evan Wallach) expressed “concerns” and noted “serious questions” about this practice.⁴² It was mooted by the substantive decision, but Judges Dyk and Wallach still raised the “question whether the practice of expanding panels where the PTO is dissatisfied with a panel’s earlier decision is the appropriate mechanism of achieving the desired uniformity.”⁴³

These qualms about the violation of the rule of law are correct. It is a testament to follow-on Chief Judges and the current Director to have brought an end to this practice of stacking PTAB panels, but the structural problem remains. Under current USPTO regulations, the Chief Judge of the PTAB still has the authority to stack panels, and there is nothing that constrains a new Director or a future Chief Judge of the PTAB to start the practice again of stacking PTAB judges in hearing cases. This is not addressed by the STRONGER Patents Act, but it should be, as it is further evidence of how the PTAB lacks basic institutional constraints that prevent violations of basic rule of law requirements and the due process rights of patent owners.

D. Serial Petitions Filed Against the Same Patents at the PTAB

The PTAB allows for repetitive challenges of the same patent—whether within the PTAB or in combination with lawsuits in the court system. One empirical study found a 70% overlap in defendants being sued for patent infringement and petitioners filing at the PTAB.⁴⁴ Other

³⁹ IPR2013-00530 (Feb. 12, 2015), IPR2014-00508 (May 8, 2015).

⁴⁰ 868 F.3d 1013, 1019-1020 (Fed. Cir. 2017) (Dyk, J., concurring).

⁴¹ *Id.* at 1016.

⁴² *Id.* at 1019.

⁴³ *Id.* at 1020.

⁴⁴ See Saurabh Vishnubhakat, Arti K. Rai, & Jay P. Kesan, *Strategic Decision Making in Dual PTAB and District Court Proceedings* 31 BERKELEY TECH. L. J. 45 (2016) (finding 70% overlap).

empirical studies that have been presented to USPTO officials in recent years have found that these “serial petitions” increase the likelihood of a petition being granted and a hearing instituted, even when these follow-on petitions are almost exactly identical to previously denied petitions. Thus, these duplicative challenges are prevalent and include either multiple parties attacking the same patent or multiple challenges brought by the same party. These duplicative challenges impose immense burdens on patent owners and on the PTAB itself.

Duplicative challenges of both types are occurring at the PTAB: (1) multiple parties attacking the same patent and (2) multiple challenges brought by the same party. For inventions in the chemical, electrical, and computers and communication fields, for instance, most of the patents subject to petitions for review at the PTAB are in fact challenged multiple times again and again in filing after filing.⁴⁵ In extreme cases, patents are subjected to numerous PTAB attacks in these serial petitions.⁴⁶

This is confirmed by empirical studies. One recent study illustrated this by comparing the share of *petitioners* who were previously sued (for patent infringement) with the share of *petitions* with at least one petitioner who had been sued on the patent. For patents related to drugs and medical technology, for instance, 48.5% of the petitioners had been previously sued on the patents they challenged, but 70.8% of the petitions had at least one already-sued petitioner.⁴⁷ As a practical matter, this means petitioners who are *not* defendants (in court) are joining petitions that have been filed by prior defendants.⁴⁸ At the very least, there are multiple petitioners challenging the same patent, and many were serial filings of petitions. Multiple challenges have real costs. When a company must spend financial resources to repeatedly defend the same patent again and again, it cannot invest those resources in additional innovation, recruitment of talent, or operational expansion, among other things.

One example of these duplicative PTAB filings on a single patent occurred when Microsoft filed three separate IPR petitions against U.S. Patent No. 8,144,182 (the '182 Patent), which is owned by Biscotti, a small business in Texas.⁴⁹ As early as 2010, Microsoft had been in commercial and legal discussions with Biscotti regarding use of its products and patented technology. Microsoft and Biscotti were in negotiations from 2011 through 2013. When Microsoft chose not take a license to use Biscotti's patented technology, the small start-up company had no other choice but to sue Microsoft in federal court in November 2013.⁵⁰ Microsoft filed three petitions at the PTAB in April 2014 to invalidate Biscotti's patent. Despite these efforts, Microsoft lost all three IPR challenges in March 2016.⁵¹ Although Microsoft is now precluded from making the same

⁴⁵ See *id.* at 45, 70, 90.

⁴⁶ See, e.g., Gregory Dolin, *Dubious Patent Reform*, 56 B.C. L. REV. 881, 935-944 (2015) (detailing numerous examples of serial petitions against the same patent and brought by multiple parties).

⁴⁷ See *id.* at 77, 107–108.

⁴⁸ *Id.*

⁴⁹ See *Microsoft Corp. v. Biscotti Inc.*, Nos. IPR2014-01457, -01458, -01459 (filed Sept. 2014). Microsoft filed three more IPR petitions in April 2015, but these were subsequently terminated.

⁵⁰ *Biscotti Inc. v. Microsoft Corp.*, No. 2:13-cv-01015 (E.D. Tex., filed Nov. 26, 2013).

⁵¹ See John Council, *Texas Company Beats Microsoft at the 'Death Squad'*, LAW.COM, Mar. 27, 2016, <http://bit.ly/2pEDRvy>.

invalidity arguments in court, defending the PTAB actions imposed a significant financial and time burden on Biscotti *and* delayed the patent infringement trial for almost two years.⁵² The Microsoft story is just one example of many that illustrates how patent owners are subjected to serial filings at the PTAB (three at the same time in the Microsoft case).

The Microsoft and Biscotti dispute illustrates how serial petitions filed at the PTAB duplicate ongoing federal court litigation. Accused infringers who are already sued for patent infringement in federal court file petitions in the PTAB, with its more lenient legal and evidentiary standards for invalidating patents. In so doing, they delay these court proceedings and impose additional legal and commercial costs on the patent owners, including ongoing costs from infringement.

Microsoft and Biscotti dispute also illustrates another common theme in serial petitions: large companies using the PTAB to impose additional costs on small or medium-sized companies when a large company is threatened with or sued for patent infringement by a smaller company. Another example is an ongoing patent infringement dispute between EagleView and Verisk. EagleView is a classic American success story: founded in 2008 by two brothers who created computer software to produce 3D models from aerial photographs, the company quickly grew into a successful company with hundreds of employees. In 2014, Verisk, a large multinational company with thousands of employees, attempted to acquire EagleView. When negotiations fell through, EagleView claimed that Verisk (though a subsidiary) began infringing its patented technologies. In 2015, EagleView filed a lawsuit against Verisk and its subsidiary for patent infringement, and the defendants responded by filing numerous petitions at the PTAB seeking to invalidate EagleView's patents. The PTAB petitions delayed the litigation, imposing additional costs on EagleView in defending its patents against invalidity challenges at the PTAB and against separate invalidity challenges in pretrial motions filed by the defendants in court. As of early 2019, EagleView still had not gone to trial for the lawsuit it filed in 2015.

The problem of harassment of patent owners in the PTAB by defendants sued for patent infringement is particularly hard-felt by *individual* inventors. One well-known example is Josh Malone and his "Bunch O Balloons" invention: a device that attaches to a water hose and can fill one-hundred, sealed and ready-to-use water balloons within 60 seconds. Malone received a patent for his invention in 2015. With his patent, he ran a successful crowd-funding campaign on Kickstarter to start his business. With his startup funding, he went national, and he ultimately licensed a manufacturing company, ZURU, to make and sell his invention. It was a tremendous success, and with all success stories, copycats immediately began selling knock-off versions, such as the "Balloon Bonanza" made and sold by TeleBrands.⁵³

As with Biscotti and EagleView, Malone sued TeleBrands for patent infringement, and like Microsoft and Verisk, Telebrands filed multiple PTAB petition challenging the validity of Malone's patents. Malone received a preliminary injunction and Telebrands appealed this decision, and while the appeal was pending, the PTAB granted one of TeleBrands's petitions,

⁵² The district court litigation is ongoing, and Microsoft has also filed for appellate review of the PTAB decisions.

⁵³ Lauren Fox, *Plano inventor's \$200M idea sets off 2-year fight with "As Seen on TV" Giant*, DALLAS NEWS (June 20, 2017), <http://bit.ly/2vJdcOd>.

held a hearing, and canceled one of Malone's patents.⁵⁴ Later, the Federal Circuit issued its own opinion and it upheld the district court's injunction against TeleBrands, and it rejected the PTAB's ruling as not binding on it.⁵⁵ This did not bring an end to the infringement or to the ongoing costs imposed on Malone in defending his patent. In response to the multiple challenges filed by TeleBrands, the PTAB continued to review Malone's other patents on his invention. TeleBrands also used its first win at the PTAB is invalidating one of Malone's patents to relitigate the issuance of the preliminary injunction.

In May 2019, after many years of fights at the PTAB and in court, Malone reached a settlement with Telebrand.⁵⁶ Two years earlier, though, Malone reported that he had already spent \$17 million just to defend his patent rights against infringers like TeleBrands.⁵⁷ He wrote in 2017 that "the PTAB simply encourages infringers like TeleBrands to double down on the expense of litigation," and that this kills individual inventors and small innovator companies who do not have the resources to fight for their patent rights. He asked rhetorically: "What can I tell someone who has an invention and is preparing to scrape together \$5,000 to \$10,000 to file a patent application? If a patent's costs are in excess of \$17 million, and it still is not secure, how can we innovate?"⁵⁸

As a result of multiple PTAB filings challenging an individual inventor's patents, a classic American success story became a legal nightmare. Malone's tale is all too typical, as accused infringers and commercial competitors now exploit the PTAB as a way to harass inventors, small businesses, and other innovators. Paul Michel, the former Chief Judge of the Federal Circuit, testified before Congress in 2017 that changes to the patent laws like the PTAB have made patents the "sport of kings," and that the "impacts on start-ups, research universities, university spin-offs, small and medium sized businesses and nearly all but giant multi-national corporations has been devastating."⁵⁹

As evidenced by the multiple filings of PTAB petitions by larger, well-financed companies sued for patent infringement by smaller companies or individuals, PTAB petitions are being filed solely for the purpose to extract settlements in lawsuits, regardless of the merits of the actual PTAB challenge. This strategy works because there are no legal risks for a company filing a petition, but the risks for the patent owner are very high. The petitioner faces no legal consequences whatsoever—if it loses, it only loses the relatively low cost of filing the petition and (potentially) of the hearing before the tribunal itself. In contrast, the risk to the patent owner

⁵⁴ See Paul Morinville, *Water Balloons, Weapons of Mass Destruction and the PTAB*, IPWATCHDOG (Jan. 27, 2017), <http://bit.ly/2uv1QPv>.

⁵⁵ *Tinnus Enterprises, LLC v. TeleBrands Corporation*, 846 F.3d 1190 (Fed. Cir. 2017).

⁵⁶ See Ruth Simon, *Four-Year Water Balloon Fight Ends With \$31 Million Truce*, WASH. POST (May 20, 2019), <https://www.wsj.com/articles/four-year-water-balloon-fight-ends-with-31-million-truce-11558388873>.

⁵⁷ Josh Malone, *\$17 Million: The real and staggering cost to patent in the US in the PTAB age*, IPWATCHDOG, July 16, 2017, <http://bit.ly/2v5oGis>.

⁵⁸ *Id.*

⁵⁹ Paul R. Michel, Testimony Before Committee on the Judiciary, U.S. House of Representatives, *The Impact of Bad Patents on American Business* (July 13, 2017), <https://docs.house.gov/meetings/JU/JU03/20170713/106230/HHRG-115-JU03-Wstate-MichaelP-20170713.pdf>.

is enormous: its patents can be invalidated and thereby destroying the property rights it is using in licensing or manufacturing in the marketplace. Given the very high “kill rates” at the PTAB, this risk is very real. As confirmed by one empirical study, the PTAB has become a tool used by defendants in seeking leverage against patent owners who sue them for infringement.⁶⁰ In these cases, defendants are essentially asking for a premium from patent owners in settling lawsuits in exchange for the defendants not to seek to invalidate the patents at the PTAB.

The STRONGER Patents Act addresses these concerns in both law and policy by prohibiting the practice of serial petitions. Again, under the leadership of Director Iancu, the PTAB has taken steps to limit, or even prohibit, the practice of serial petitions.⁶¹ But there are indications that the practice continues.⁶² Even if it is no longer happening, though, Congress should take steps to prevent a new Director or a new Chief Judge from reinstating this practice in the future.

E. Systemic Abuse in PTAB Petitions Filed for Reasons Other Than a Patent’s Validity

Filing a PTAB petition to challenge a patent’s validity is significantly easier than asserting the same challenge in court. Anyone can file a petition with the PTAB to challenge the validity of a patent: a defendant in court, someone merely threatened with infringement litigation, or even an organization dedicated to eliminating all patents on a technology altogether. For example, the Electronic Frontier Foundation (EFF) has a “Chair to Eliminate Stupid Patents,” which is an attorney advocate position endowed by Mark Cuban. Cuban has declared there should be no patents on high-tech software inventions,⁶³ and he endowed this position at EFF to pursue this goal. The EFF files PTAB petitions.⁶⁴ PTAB petitions have also been filed by hedge fund managers solely seeking to profit from short selling a company’s stock when its price drops in response to the filing, by trade associations dedicated to advancing solely the interests of their own members, by activists and policy advocacy organizations, and even by someone with a personal vendetta against a patent owner.⁶⁵

Using PTAB petitions to profit in the financial markets works because investors pay close attention to patent disputes. A court decision about patent validity or infringement can shift the stock price of a winning or losing firm even more than the initial grant of a patent can.⁶⁶

⁶⁰ See Vishnubhakat, Rai & Kesan, *supra* note 52.

⁶¹ See *Valve Corp. v. Electronic Scripting Products, Inc.*, IPR2019-00062, IPR2019-00063, IPR2019-00084 (Apr. 2, 2019) (designated precedential) (prohibiting institution of an IPR after multiple petitions against the same patent have been filed from similarly situated petitioners); *General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357 (Sep. 6, 2017) (designated precedential) (setting forth factors governing the denial of a petition to institute an IPR, including whether multiple petitions have been filed against the patent).

⁶² See *Apple’s Multiple Petitions Against Nartron Patent Underscore PTAB’s Serial IPR Problem*, IPWatchdog.com (Aug. 8, 2019), <https://www.ipwatchdog.com/2019/08/08/apples-multiple-petitions-nartron-patent-underscore-serial-petition-problem/>.

⁶³ See Mark Cuban, *My Suggestion on Patent Law*, BLOG MAVERICK, Aug. 7, 2011, <http://bit.ly/2qygzVi> (proposing to eliminate all software patents).

⁶⁴ See Michael Lipkin, *EFF Wins PTAB Attack Against Podcasting Patent*, LAW360, Apr. 10, 2015, <https://www.law360.com/articles/642071/eff-wins-ptab-attack-against-podcasting-patent>.

⁶⁵ See Dolin, *supra* note 46, at 932-947.

⁶⁶ Alan C. Marco & Saurabh Vishnubhakat, *Certain Patents*, 16 YALE J. L. & TECH. 103, 104 (2013).

Investors also know that the PTAB applies looser standards than the courts, which means that filing a petition at the PTAB creates a significant risk of patent invalidation. As a result, challenging a patent before the PTAB can cause significant harm to a patent-owning company's stock price. To exploit this, a challenger can short-sell the patent owner's stock just before filing its petition at the PTAB, knowing that the stock price will tumble and it will yield a profit on the short sale—even if the challenger knows its claims have no merit.

The most notorious example of a hedge funder manager exploiting the PTAB in this fashion is Kyle Bass, head of Hayman Capital Management LP.⁶⁷ By December 31, 2016, Bass had filed over 30 petitions at the PTAB, seeking to invalidate patents held by many pharmaceutical companies. Bass teamed up with another controversial lawyer, Erich Spangenberg, and together they have filed their petitions under the name “Coalition for Affordable Drugs.” Bass, on behalf of his partners and investors, short sells the stocks of the company he is targeting at the PTAB.⁶⁸ By short selling the stock, Bass makes money if the company's stock price decreases. In several instances, the mere filing of a petition with the PTAB caused significant negative effects on a company's share prices.⁶⁹

For example, after Bass filed two PTAB petitions against Acorda Therapeutics and Shire, respectively, each of the companies' share prices dropped.⁷⁰ Acorda Therapeutics's share price fell 9.7% and 4.8% after Bass filed two PTAB petitions in February 2015, and Shire's share price fell 2.7% after Bass filed a petition in April 2015.⁷¹ For an institutional investor in charge of investing hundreds of millions of dollars, even small price fluctuations can produce millions, if not hundreds of millions, in profits.⁷² For the affected companies, however, it means significant losses: Acorda lost approximately \$4 million and \$2 million respectively, and Shire lost a stunning \$14.9 million. These types of losses have real consequences for companies and ultimately for the public; in the pharmaceutical sector, it means lost jobs and reduced spending on the research and development necessary to create new drugs.

The PTAB has definitively ruled that petitions filed by Bass and others seeking to profit from this manipulation of a company's stock price is legitimate. Celgene Corporation, one of the victims of Bass's short-sale strategy at the PTAB, filed a motion with the PTAB requesting that it prohibit non-innovation-motivated petitions by Bass and others. In response, the PTAB ruled in favor of Bass, concluding that “an economic motive for challenging a patent claim does not

⁶⁷ See Joseph Walker & Rob Copeland, *New Hedge Fund Strategy: Dispute the Patent, Short the Stock*, WALL ST. J. (Apr. 7, 2015), <http://on.wsj.com/2usPWqq>.

⁶⁸ *Id.*

⁶⁹ See J. Gregory Sidak & Jeremy O. Skog, *Attack of the Shorting Bass: Does the Inter Partes Review Process Enable Petitioners to Earn Abnormal Returns?*, 63 UCLA L. REV. DISC. 120, 135–39 (2015) (conducting an analysis of the performance of a company targeted by Bass in comparison with the S&P 500); see also Stephen Foley & David Crow, *Kyle Bass Returns Funds Amid Retreat on Pharma Shorting Campaign*, FIN. TIMES, Feb. 23, 2016, <http://on.ft.com/2quo2pb>.

⁷⁰ Sidak & Skog, *supra* note 92 at 138.

⁷¹ *Id.* at 131.

⁷² Kyle Bass reportedly raised \$700 million from investors seeking to profit from this short-sale PTAB petition strategy. See Foley & Crow, *supra* note 92.

itself raise abuse of process issues. We take no position on the merits of short-selling as an investment strategy other than it is legal, and regulated.”⁷³

Although Bass may have since renounced his strategy,⁷⁴ this explicit harassment of companies working in the innovation industries—the manipulation of a company’s stock price—is tacitly endorsed by the PTAB, which maintains that the motives of a petitioner are immaterial to its decisions. When patent owners send demand letters that misrepresent their motives in asserting that someone is infringing a patent, they have been rightly sanctioned by the Federal Trade Commission.⁷⁵ In court cases, judges regularly sanction patent owners for improper motives and bad behavior in suing companies for patent infringement.⁷⁶ The STRONGER Patents Act correctly addresses the concern about misleading demand letters for the same reason that it correctly addresses the concerns raised by abusive petitions at the PTAB. The PTAB permits the abuse of its legal process by individuals or companies who merely seek to profit by depressing a patent owner’s stock prices, and the PTAB is not going to stop it.

By contrast, someone who wishes to challenge a patent in court must follow long-established procedures and rules intended to protect people’s rights to life, liberty, and property. Foremost, there must be an actual dispute between the parties in the litigation. For example, a person cannot challenge a title deed as invalid without being accused of violating the property right (for example, trespass) in the first instance. In constitutional terms, there must be an actual “case or controversy” for the court to resolve between two actual adversaries, and the parties before the court must have a real stake in the legal arguments they make to the court. No such rules apply at the PTAB. The STRONGER Patents Act addresses this concern by imposing a “standing” requirement for petitioners, eliminating petitions driven by motives such as ideological opposition to patents, profit schemes, or outright harassment of patent owners.

In conclusion, the PTAB is widely recognized as contributing to a legal and policy environment in which patents owned by individuals or other under-capitalized entities, such as startups or universities, are now significantly devalued as commercial assets. This patent owner must first navigate the increasingly difficult process to obtain a patent, especially in the biopharmaceutical and high-tech industries that have been hit the hardest by recent court decisions that have severely restricted the patent eligibility of innovations in these sectors of the innovation

⁷³ Gene Quinn, *Kyle Bass IPR challenge moves forward, what does it mean for patent reform?*, IPWATCHDOG, Oct. 12, 2015, <http://bit.ly/1jltJ4U> (quoting Coalition for Affordable Drugs VI, LLC v. Celgene Corporation, Nos. IPR2015-01092, -01096, -01102, -01103, -01169 Paper No. 18 (filed Sept. 25, 2015)).

⁷⁴ See Foley & Crow, *supra* note 92.

⁷⁵ See Press Release, Federal Trade Commission, *FTC Settlement Bars Patent Assertion Entity From Using Deceptive Tactics* (Nov. 6, 2014), <http://bit.ly/2tHm22m>.

⁷⁶ See, e.g., Kevin Penton, *Comcast, Other Cable Cos. Get \$51M Fees In Rembrandt MDL*, LAW360, Mar. 3, 2017, <http://bit.ly/2u2MVfu> (judge sanctions patent owner for having “violated ethical rules of conduct by paying its fact witnesses . . . while also engaging in ‘widespread’ document spoliation over a number of years”); Kelly Knaub, *Tech Co. Scores \$1.3M Attorneys’ Fee Win In Patent Case*, LAW360, Oct. 4, 2016, <http://bit.ly/2usVX6D> (judge sanctions patent owner for having “played semantic games regarding what its machines did”).

economy.⁷⁷ If a patent issues, the patent owner is then faced with the prospect of efficient infringement, as companies do not pursue a license and instead infringe a patent, forcing patent owners to incur additional costs in defending their patents in court and with minimal chances of receiving the remedies all property owners are entitled to receive for violations of their rights. When infringing companies are sued, they then file multiple petitions in the PTAB—or the special companies hired anonymously to file petitions in the PTAB file them for them⁷⁸—which is a further expensive, time-consuming process.⁷⁹ Through its administrative processes, which are nothing like the legal processes in court, the PTAB can cancel a patent. The odds favor the petitioner. This regulatory cancelation is valid regardless of denials of statutory rights, such as the right to amend one’s patent, conflicts with court judgments, panel stacking or other abisc rule-of-law concerns. It is also valid even if the patent owner is lucky enough to survive a validity challenge in court, prove infringement, and then be one of the lucky few who receive an injunction or damages high enough to justify its legal fees.

III. The Loss of Injunctive Remedies for All Patent Owners under *eBay*

In addition to the costs imposed on patent owners by the PTAB in undermining reliable and effective patent rights, courts are no longer providing patent owners with the longstanding remedy of an injunction for ongoing infringement of their valid patents. In 2006 in *eBay v. MercExchange*, the Supreme Court created a new (allegedly historical) four-factor test for awarding injunctions on a finding of ongoing infringement of a valid patent.⁸⁰ *eBay* has resulted in far fewer patent owners receiving injunctive remedies for violations of their property rights as compared with longstanding historical norms in the U.S. Combined with the PTAB, the inability to obtain injunctions has contributed to the weakening of patents, the increasing practice of “efficient infringement,” and the general loss of reliable and effective property rights as drivers of economic activity in the free market. Unfortunately, there is much misunderstanding today about the *eBay* decision and about the nature and function of injunctive remedies for patent owners commercializing their inventions in the U.S. innovation economy.

A. The Change to Both the Law and Practice of Remedies for Patent Infringement

Unfortunately, *eBay* changed longstanding law governing the remedies that patent owners had received for ongoing infringement of their valid patents. As Chief Justice John Roberts observed in his concurrence in *eBay*: “From at least the early 19th century, courts have granted injunctive

⁷⁷ See Madigan & Mossoff, *supra* note 2, at 946–60 (identifying how four Supreme Court decisions between 2010 and 2014 have destabilized and diminished U.S. innovation, particularly in the biopharmaceutical and advanced technology industries).

⁷⁸ See Rob Sterne, *PTAB Challenges Are a Costly, Uphill Battle for Patent Owners*, IPWATCHDOG (Apr. 22, 2018), <https://www.ipwatchdog.com/2018/04/22/ptab-challenges-costly-uphil-battle-patent-owners/id=96158> (“[C]ompanies like Unified Patents were formed to aggregate the PTAB opportunity These PTAB aggregators offer several benefits to accused infringers, including reduced PTAB cost, no estoppels, and the ability to circumvent the one-year challenge requirement. They act as a surrogate for the accused infringer, who never files a PTAB challenge.”).

⁷⁹ See *id.* (“PTAB challenges are very expensive, often topping [over \$1 million] through Federal Circuit appeal. They add 2-4 years to most district court suits.”).

⁸⁰ See *eBay Inc. v. MercExchange L.L.C.*, 547 U.S. 388 (2006).

relief upon a finding of infringement in the vast majority of patent cases.”⁸¹ The reason is that U.S. courts applied the same remedy law for patent owners as they applied to all owners of property rights: a presumptive injunction to stop ongoing violations.⁸²

Today, this is no longer the case. All patent owners—manufacturers and licensing companies—are now denied injunctive remedies on a finding of infringement of their patents, as confirmed by empirical studies.⁸³ In effect, patent owners are being forced into compulsory licensing schemes via judicial decisions that deny them injunctions, requiring them to accept court-ordered “reasonable royalties” for ongoing infringement. In terms of determining these “reasonable royalties,” courts have further lowered the baseline for assessing damages to the “smallest saleable patent practicing unit,”⁸⁴ and are using this standard for damages even when it does not match the market-based rates for licensing patented innovations.⁸⁵

This may not have been the intent of the Supreme Court in *eBay*, just as it was not the intent of Congress to create “death squads” for patents at the PTAB. Nonetheless, it is the undeniable doctrinal and practical result of *eBay*. This state of affairs likely came about for a couple reasons.

First, contrary to the claim in *eBay* that the Supreme Court was reestablishing a historical legal test, there was in fact no historical four-factor test. Remedies scholars have repeatedly observed and I have confirmed in my own independent empirical study of nineteenth-century patent cases that courts never applied a four-factor test for issuing injunctions on a finding of liability by a defendant for ongoing violations of patent rights.⁸⁶ Thus, *eBay* created a *new* legal test that lacked controlling precedent to guide court decisions after 2006, and this contributed to a second

⁸¹ *Id.* at 395 (Roberts, C.J., concurring). Of course, there are always outlier decisions in the common-law-style evolution of Anglo-American jurisprudence that lawyers are wont to find in diligent legal research on behalf of clients. *See, e.g., Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405, 426 n.3 (1908). It is undeniable that the vast weight of legal authority applied the rule that an injunction was a presumptive remedy for an ongoing infringement of a valid patent.

⁸² *See* Mossoff, *Institutional Design in Patent law*, *supra* note 11.

⁸³ *See, e.g., See* Kirti Gupta & Jay P. Kesan, *Studying the Impact of eBay on Injunctive Relief in Patent Cases* 38 (Univ. of Ill. Coll. of Law, Legal Studies Research Paper No. 17-03, 2016), <https://ssrn.com/abstract=2816701> (“We find that both for preliminary and permanent injunctions, [patent licensing companies] are less likely to obtain an injunction, after controlling for patent characteristics and the length of the case (from filing to termination) throughout the 2000-2012 time period. We also find that the *eBay* ruling reduced the likelihood of all firms [including manufacturers] receiving either preliminary or permanent injunctions.”).

⁸⁴ *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279 (N.D.N.Y. 2009).

⁸⁵ *See* Jonathan D. Putnam & Tim A. Williams, *The Smallest Salable Patent-Practicing Unit (SSPPU): Theory and Evidence* 12 (Sep. 8, 2016) (unpublished manuscript), <https://ssrn.com/abstract=2835617>.

⁸⁶ *See* Doug Rendleman, *The Trial Judge’s Equitable Discretion Following eBay v. MercExchange*, 27 REV. LITIG. 63, 76 n.71 (2007) (“Remedies specialists had never heard of the four-point test.”). My empirical study is not yet published or available to the public. It appears the *eBay* Court was confused between the test for permanent injunctions and the test for a preliminary injunction, as there is no “historical” four-factor test for issuance of permanent injunctions, but there is a modern four-factor test for preliminary injunctions. *See* DOUG LAYCOCK, MODERN AMERICAN REMEDIES: CASES AND MATERIALS 444 (4th ed. 2010) (observing that the four-factor test for preliminary injunctions was what “the Court tried to transfer to permanent injunctions in *eBay*”).

development that has resulted in a change in patent owners receiving the longstanding presumptive remedy for ongoing infringement of their property rights.

Second, within a few years after *eBay*, courts conflated Justice Anthony Kennedy’s concurrence with the majority decision in *eBay*, citing not the majority opinion, but Justice Kennedy’s concurrence.⁸⁷ This is significant because Justice Kennedy argued in *eBay* that a new business model exists of “obtaining licensing fees” by patent licensing companies, and patent licensors should not be permitted to threaten manufacturers with an injunction if they do not take a license.⁸⁸ He decried that injunctions, or at least the threat of an injunction, permitted licensors to “charge exorbitant fees.”⁸⁹

Justice Kennedy was wrong that patent licensing is a new business model, as economists and historians have recognized,⁹⁰ but his concurrence in *eBay* fed a growing moral panic in D.C. and in the courts in the past decade about the role of patent licensing specifically and patents generally in the U.S. innovation economy.⁹¹ This was represented by the “patent troll” narrative and the use of this epithet to attack any patent owner who licenses its patent rights instead of manufacturing products or services, including inventors, startups, universities, and major companies that succeeded with licensing as a business model.⁹² In fact, patent licensing has long been a central feature in the vibrant and growing U.S. innovation economy since the early nineteenth century.⁹³ But Justice Kennedy’s mistaken concerns in his *eBay* concurrence came to dominate patent policy, and thus courts began to worry about “patent holdup” via injunctions.⁹⁴

B. Misunderstandings About the Nature and Function of Injunctions

Further complicating this issue is that there is widespread misunderstanding about the nature and function of injunctions for patents specifically and for property rights generally. Just as there was no historical four-factor test for issuing injunctions as a remedy for patent infringement, there was no historical automatic or categorical rule for injunctions. Since the United States was the

⁸⁷ See Ryan T. Holte, *The Misinterpretation of eBay v. MercExchange and Why: An Analysis of the Case History, Precedent, and Parties*, 18 CHAP. L. REV. 677, 721–22 (2015).

⁸⁸ *eBay*, 547 U.S. at 396–97 (Kennedy, J., concurring).

⁸⁹ *Id.*

⁹⁰ See, e.g., Adam Mossoff, *Patent Licensing and Secondary Markets in the Nineteenth Century*, 22 GEO. MASON L. REV. 959 (2015); B. Zorina Khan, *Trolls and Other Patent Inventions: Economic History and the Patent Controversy in the Twenty-First Century*, 21 GEO. MASON L. REV. 825 (2014); Naomi R. Lamoreaux, et al., *Patent Alchemy: The Market for Technology in US History*, 87 BUS. HIST. REV. 3 (2013).

⁹¹ See Adam Mossoff, *Weighing the Patent System: It Is Time to Confront the Bias Against Patent Owners in Patent “Reform” Legislation*, WASH. TIMES (Mar. 24, 2016), <https://www.washingtontimes.com/news/2016/mar/24/adam-mossoff-weighing-the-patent-system/>.

⁹² See Adam Mossoff, *Repetition of Junk Science and Epithets Does Not Make Them True*, IPWatchdog.com (Nov. 19, 2015), <https://www.ipwatchdog.com/2015/11/19/repetition-of-make-them-true/>.

⁹³ See *supra* note 90.

⁹⁴ See Alexander Galetovic & Stephen Haber, *The Fallacies of Patent Holdup Theory*, 13 J. COMP. L. & ECON. 1 (2017) (describing the “patent holdup” theory and criticizing it both theoretically and empirically).

first country to define patents as private property rights,⁹⁵ courts applied to patents the same remedies as they applied to all property rights.⁹⁶ In sum, courts applied a *presumptive remedy* of an injunction.

This meant that, following a trial proving both validity of the patent and ongoing infringement of this valid property right, an injunction issued presumptively.⁹⁷ As a presumptive remedy, an injunction was not automatically guaranteed for a patent owner—nor for any property owner—as it could be rebutted by a defendant.⁹⁸ A defendant could defeat an injunction by proving that the patent was invalid or that the defendant did not infringe. Once a defendant was found liable for ongoing infringement of a valid patent, it could still defeat an injunction by proving classic counter-claims in equity for why an injunction should not issue, such as unreasonable delay that prejudiced the defendant (called “laches”),⁹⁹ classic “public interest” concerns of threats to public health and safety,¹⁰⁰ a cloud on the title, or other longstanding equitable defenses. As a general matter of patent litigation, courts usually found in favor of the patent owners,¹⁰¹ but not as a matter of automatic right, but simply because they applied to patents the same doctrinal rules governing remedies for other property rights. As a court explained in *Green v. French* in 1870 in the context of issuing a preliminary injunction: “the court has no discretion, but is bound to grant a preliminary injunction where the validity of the complainant’s patent has been established by protracted and expensive litigation, and the proof of infringement is clear.”¹⁰²

⁹⁵ See Mossoff, *Institutional Design in Patent Law*, *supra* note 11 (identifying licensing and injunctions as two key legal indicators of the unique U.S. approach to securing patents as private property rights).

⁹⁶ See, e.g., *Cook v. Ernest*, 6 F. Cas. 385, 391 (C.C.D. La. 1872) (“If the rights of property so invaded were rights to land or other tangible estate, no court would hesitate for a moment to restrain the wrong-doer by injunction. The property in a patent is just as much under the protection of the law as property in land. The owner has the same right to invoke the protection of the courts, and when he has made good his claim to his patent, and shown an infringement of it, it is the duty of the courts to give him the same relief meted out to suitors in other cases.”).

⁹⁷ See, e.g., *Conover v. Mers*, 6 F. Cas. 322 (1868) (“[W]here, as here, the patent has been sustained on full hearing, and the infringement is clear . . . the complainant is entitled to have his rights promptly protected by injunction.”).

⁹⁸ See, e.g., *Batchelder v. Moulton*, 2 F. Cas. 307, 310 (C.C.S.D.N.Y. 1873) (“The plaintiff’s title and the validity of his claims are free of doubt, and have been established, and the infringement by the defendants’ machine is clear. An injunction must issue on all the claims.”); *Day v. New England Car Co.*, 7 F. Cas. 248, 248-49 (1854) (“Under the rules of equity pleading . . . The defendants must disprove the invention, or the right of the plaintiff as assignee, or the infringement of the patent Otherwise, the plaintiff will be entitled to an injunction on the proofs.”);

⁹⁹ See, e.g., *Goodyear v. Honsinger*, 10 F. Cas. 692, 695 (1867) (considering laches argument by defendant but ultimately issues preliminary injunction for plaintiff patent owner); *Cooper v. Mattheys*, 6 F. Cas. 482 (1842) (denying an injunction given evidence of laches by the plaintiff patent owner);

¹⁰⁰ See, e.g., *Bliss v. City of Brooklyn*, 3 F. Cas. 706 (1871) (denying injunction for infringement of a patent on fire hoses used by city fire department on public interest grounds of threat to public health and safety in the city).

¹⁰¹ See *eBay*, 547 U.S. at 395 (Roberts, C.J., concurring); see also

¹⁰² *Green v. French*, 10 F. Cas. 1107, 1109 (1870).

This was confirmed by the Supreme Court over one hundred years ago in its 1908 decision in *Continental Paper Bag Co. v. Eastern Paper Bag Co.*¹⁰³ Here, the Supreme Court plainly and bluntly said that “patents are property, and [thus a patent owner is] entitled to the same rights and sanctions as other property.”¹⁰⁴ This was true regardless of how a patent owner may use its property. In all cases of patent infringement, the Supreme Court held that “trespasses and continuing wrongs . . . are well-respected grounds of equity jurisdiction, especially in patent cases, and a citation of cases is unnecessary.”¹⁰⁵ Notably, and something forgotten among many courts and commentators who mistakenly conflate *eBay* with Justice Kennedy’s concurrence, the majority opinion in *eBay* endorsed this key holding in *Continental Paper Bag*.¹⁰⁶

Moreover, just as there are misunderstandings about the nature of injunctions as a legal remedy, there are misunderstandings about the economic function of injunctions in the innovation economy. Although some companies internalize all aspects of research and development, manufacturing and commercialization in their business models, such as firms in the pharmaceutical industry, many companies do not do this. They engage in innovative commercial transactions and economic arrangements, such as disbursed supply chains among many different companies, franchise business models formed around licenses of a portfolio of intellectual property rights, portfolio licensing of patents, and patent pools, among others, to efficiently produce innovative products and services for sale in the marketplace to consumers. The ability of inventors, businessperson, and ultimately consumers, to reap the efficiencies and other benefits of these innovation markets is dependent on their ability to transact in the marketplace.

These market transactions comprise contracts, and the resulting setting of fair market value in products and services via contracts is dependent on the exercise of exclusive control rights in property. This is why property, including intellectual property, is a platform for commercial activities in which market participants benefit from specialization and division of labor in maximizing value creation, creating economic growth and flourishing societies.¹⁰⁷ This key economic principle was first formulated by Adam Smith in *The Wealth of Nations* in 1776, and it is a widely accepted principle among economists today.¹⁰⁸

¹⁰³ 210 U.S. 405 (1908).

¹⁰⁴ *Id.* at 425.

¹⁰⁵ *Id.* at 430.

¹⁰⁶ *See eBay*, 547 U.S. at 393 (rejecting the district court’s denial of the request for an injunction given that the patent owner only licensed its patent on the ground that this is “in tension with *Continental Paper Bag Co v. Eastern Paper Bag Co.*, which rejected the contention that a court of equity has no jurisdiction to grant injunctive relief to a patent holder who has unreasonably declined to sue the patent”).

¹⁰⁷ *See, e.g., See KHAN, supra note 11, at 9–10* (“[P]atents and . . . intellectual property rights facilitated market exchange, a process that assigned value, helped to mobilize capital, and improved the allocation of resources. . . . Extensive markets in patent rights allowed inventors to extract returns from their activities through licensing and assigning or selling their rights.”).

¹⁰⁸ *See, e.g., Stephen Haber, Patents and the Wealth of Nations*, 23 *GEO. MASON L. REV.* 811, 811 (2016) (“There is abundant evidence from economics and history that the world’s wealthy countries grew rich because they had well-developed systems of private property. Clearly defined and impartially enforced property rights were crucial to economic development”); HERNANDO DE SOTO, *THE MYSTERY OF CAPITAL: WHY CAPITALISM TRIUMPHS IN THE WEST AND FAILS EVERYWHERE ELSE* 83 (2000) (“[P]eople who could not operate within the law also could not hold property efficiently or enforce contracts through the courts Being unable to raise money for

This economic principle—injunctions facilitate market transactions based on securing control rights in a firm’s decisions as to how it will use its assets and sell its products and services in the marketplace—is recognized by courts in non-intellectual property cases law. In *Continental Airlines v. Intra Brokers*, for example, the court granted Continental’s request for equitable relief enjoining resale of discount coupons that Continental expressly prohibited from being sold or used by third parties in a secondary market.¹⁰⁹ Intra Brokers, the defendant, argued that the lack of evidence of harm, and that the coupons were easily measured by their monetary face value, established that plaintiff failed to prove it suffered an irreparable injury justifying an injunction, as opposed to payment of damages. Not so fast, the court said, because “Continental was entitled to control whether its coupons were transferred.” The court held that Continental had proven irreparable injury because the “certain harm to Continental was to its power, not its purse. [Regardless w]hether Continental is right or wrong about the effect of coupon brokering on its profits . . . it is entitled to its own decisions about whether to give out discount coupons, and whether to make them transferrable or nontransferable. *Neither Intra nor the courts are entitled to substitute their business judgment for Continental’s.*”¹¹⁰

Historically, courts recognized and applied these same equitable principles in presumptively securing the exclusive control rights in property rights in inventions.¹¹¹ In *Gilbert & Barker Manufacturing Co. v. Bussing*, for example, the court denied the patent owner’s request for a preliminary injunction, but expressly noted that patent owners could not be subjected to compulsory licensing through denials of perpetual injunctions after finding a defendant liable for ongoing infringement of a valid patent.¹¹² The court stated bluntly: “The complainants cannot be compelled, against their will, to permit the defendant to use their invention.”¹¹³ As Circuit Justice McLean explained in another patent case in 1845: In “an ordinary case of infringement . . . an absolute injunction is the only adequate relief.”¹¹⁴

C. The Negative Impact of *eBay* on All Patent Owners and on the Innovation Economy

The weakening of the ability to obtain an injunction—the backstop for all market-based negotiations of conveyances of property rights—combined with the heavy costs imposed on patent owners by the PTAB has further exacerbated the increasingly common practice known as

investment, they could not achieve economies of scale or protect their innovations through royalties and patents.”); Harold Demsetz, *Toward a Theory of Property Rights*, 57 *American Econ. Rev.* 347 (1967) (noting that “an owner of a private right to use land acts as a broker” in facilitating efficient uses of the land).

¹⁰⁹ See *Continental Airlines, Inc. v. Intra Brokers, Inc.*, 24 F.3d 1099 (9th Cir. 1994).

¹¹⁰ *Id.* at 1105 (emphasis added).

¹¹¹ See *Cook v. Ernest*, 6 F. Cas. 385, 391 (C.C.D. La. 1872) (“If the rights of property so invaded were rights to land or other tangible estate, no court would hesitate for a moment to restrain the wrong-doer by injunction. The property in a patent is just as much under the protection of the law as property in land. The owner has the same right to invoke the protection of the courts, and when he has made good his claim to his patent, and shown an infringement of it, it is the duty of the courts to give him the same relief meted out to suitors in other cases.”).

¹¹² *Gilbert & Barker Mfg. Co. v. Bussing*, 10 F. Cas. 348 (1875)

¹¹³ *Id.* at 349.

¹¹⁴ *Brooks v. Stolley*, 4 F. Cas. 302 (C.C.D. Ohio 1845) (No. 1,962) (McLean, Circuit Justice).

“efficient infringement.”¹¹⁵ This occurs when a company decides that it “economically gains from deliberately infringing [on a] patent[]” because it knows the patent owner will not receive an injunction and thus it will pay less in legal fees and in court-ordered damages than it would have paid in a license obtained from the patent owner.¹¹⁶

Given the increasingly high costs of seeking protection for patents as a result of both efficient infringement practices and diminished chances of success for many patent owners in seeking protection of their rights in court, patent litigation is now referred to as the “sport of kings.”¹¹⁷ This directly undermines the “democratization” effects that stable, reliable, and effective patent rights have achieved for the U.S. innovation economy in spurring new innovation, new business models, and ultimately new economic growth from all quarters of society. The “great inventors” in the nineteenth century were individuals who mostly relied on patent licensing and other features of market specialization facilitated by enforceable and tradeable property rights.¹¹⁸

The STRONGER Patents Act correctly restores the true historical test for issuing injunctive remedies to patent owners by abrogating the novel *eBay* four-factor test and expressly reestablishing that, as property owners, patent owners are entitled presumptively to an injunction on a finding of ongoing infringement of a valid patent. In so doing, the STRONGER Patents Act restores balance back to the patent system in securing the full control rights that make possible the myriad business models and commercial arrangements that efficiently deliver new products and services to consumers through innovation markets.

IV. Why Reform of the PTAB and *eBay* Matter for the U.S. Innovation Economy

Some studies of intellectual property policy and innovation reveal the impact of a decade of sowing legal uncertainty and destabilizing the reliable and effective property rights in inventions that have driven the innovation economy. According to the prominent annual ranking of patent systems around the world by the U.S. Chamber of Commerce, the U.S. patent system has fallen steadily over the past two years from its long-standing first-place position to a tied rank that places it outside the top ten in 2018.¹¹⁹ The U.S. Chamber directly links the collapse of the former gold standard U.S. patent system to the operations of the PTAB and to the Supreme Court’s decisions that heavily restricted patent eligibility for high-tech and biopharmaceutical inventions. This ranking is confirmed by anecdotal evidence as well. Today, thought leaders,

¹¹⁵ See Adam Mossoff & Bhamati Viswanathan, *Explaining Efficient Infringement* (May 11, 2017), <https://cpip.gmu.edu/2017/05/11/explaining-efficient-infringement>.

¹¹⁶ *Id.*

¹¹⁷ See *The Impact of Bad Patents on American Businesses: Hearing Before the Subcomm. on Courts, Intellectual Prop., and the Internet of the H. Comm. on the Judiciary*, 115th Cong. (2017) (statement of J. Paul R. Michel, former C.J. of the U.S. Court of Appeals for the Federal Circuit) (“Indeed, most owners of patents can no longer afford to enforce them. . . . Experts opine that to enforce a small portfolio an owner needs \$15 million in cash and \$3 billion in market cap. So, wages now say that the ‘sport of kings’, horse racing, has been replaced by patent litigation.”).

¹¹⁸ See Khan, *supra* note 90, at 833–35.

¹¹⁹ See GLOBAL INNOVATION POLICY CENTER, INTERNATIONAL IP INDEX (6th ed. 2018), http://www.theglobalipcenter.com/wp-content/uploads/2018/02/GIPC_IP_Index_2018.pdf.

venture capitalists, and innovators talk regularly at conferences about the health of the U.S. patent system, and the overwhelming theme is the pervasive *legal uncertainty* and *weakness* in these vital property rights.¹²⁰ The legal uncertainty and weakening of patent rights undermines decisions to invest in and create the new inventions and innovative commercial arrangements that lead to new products and services in the innovation economy.¹²¹

Similarly in 2018, the U.S. dropped out of the top ten in the Bloomberg Innovation Index ranking of innovation economies around the globe.¹²² Unlike the U.S. Chamber's ranking, which examines only the stability and effectiveness of a country's patent system, the Bloomberg Innovation Index measures the sources of innovative activity, such as university R&D. Although one should be careful about inferring causation from correlation, this is one more data point of a growing number of indicators showing that, as patent rights have become less reliable and less effective, this correlates with drops in R&D in key technology sectors. This is unsurprising, as historical and economic studies overwhelmingly show a positive correlation between reliable and effective patent rights and economic growth.¹²³

Patents are property rights that secure the investments necessary to create new products and services, and, as property rights, they drive the commercial activities that grow the innovation economy. These investments and commercial activities are significant risks often made over very long time horizons. The average cost of R&D for a new drug is approximately \$2.6 billion—this is the time, labor, and money spent *before* a company sees a single dollar from purchasers in the marketplace.¹²⁴ In the high-tech sector, companies like Microsoft, Qualcomm, and others spend billions in R&D each year.¹²⁵ It took tens of thousands of person-hours of work and an estimated \$150 million for the engineers at Apple Computer to go from Steve Jobs' conception in 2003 of a mobile computer in a telephone to the commercial release in 2007 of the iPhone.¹²⁶ Even if an

¹²⁰ See Kevin Madigan, *An Ever-Weakening Patent System Is Threatening the Future of American Innovation*, (Apr. 28, 2017), <https://cpip.gmu.edu/2017/04/28/an-ever-weakening-patent-system-is-threatening-the-future-of-american-innovation/>.

¹²¹ See Farre-Mensa, Hegde & Ljungqvist, *supra* note 12 (identifying causal link between a startup owning a patent and a more than doubling in probability in its receiving venture capital financing compared to a startup without a patent).

¹²² See Michelle Jamrisko & Wei Lu, *The U.S. Drops Out of the Top 10 in Innovation Ranking*, BLOOMBERG TECH. (Jan. 22, 2018), <https://www.bloomberg.com/news/articles/2018-01-22/south-korea-tops-global-innovation-ranking-again-as-u-s-falls>.

¹²³ See Stephen Haber, *Patents and the Wealth of Nations*, 23 GEO. MASON L. REV. 811 (2016).

¹²⁴ Joseph DiMasi et al., *Innovation in the pharmaceutical industry: New estimates of R&D costs*, 47 J. HEALTH ECON. 20 (2016).

¹²⁵ See Dean Takahashi, *Why Vista Might be the Last of Its Kind*, SEATTLE TIMES, Dec. 4, 2006, http://seattletimes.com/html/business/technology/2003460386_btview04.html (reporting a back-of-the-envelope calculation that Microsoft spent approximately \$10 billion in R&D in its Vista operating system before it sold a single copy); David Manners, *Intel Out-Spends Everyone on R&D*, ELECTRONICSWEEKLY.COM, Feb. 16, 2017, <https://www.electronicweekly.com/blogs/mannerisms/markets/intel-spends-everyone-rd-2017-02/> (reporting annual 2016 R&D budgets at Intel of \$12.7 billion and at Qualcomm of \$5.1 billion).

¹²⁶ Fred Vogelstein, *The Untold Story: How the iPhone Blew Up the Wireless Industry*, WIRED (Jan. 9, 2008). Apple was investing in, creating, and addressing problems in manufacturing, as well as in the supply and distribution chains, all the way up until the June 29, 2007 release of the iPhone to consumers. See Fred Vogelstein, *Inside Apple's 6-Month Race to Make the First iPhone a Reality*, WIRED (June 28, 2017).

innovator creates a new invention, and continues to innovate through the development of a commercial product, there is still no guarantee that the market will embrace the product, as Microsoft discovered with its estimated \$10 billion R&D in the failed Windows Vista operating system it released in 2006.¹²⁷ What individual or company could afford doing this—or would do this—if it was not ensured exclusive rights in the valuable fruits of its creative labors?

From all of this, it is easy to understand why patent owners working in the innovation economy, such as individual inventors, universities, startups, and others, report that they have little certainty in their property rights. Venture capitalists and other commercial entities also now widely report that patents no longer provide stable and effective property rights on which to base their investment decisions. A representative from the National Venture Capital Association made this point about the destructive nature of legal uncertainty in patents in testimony before Congress in 2015: “[M]aking it more costly to enforce patents . . . will have the unintended consequence of diminishing—if not extinguishing—the only true incentive that thousands of innovators presently have to invest the necessary time, money and other resources needed to create a new company from scratch. . . . [and] will have a chilling effect on investment in patent intensive companies, which in turn will have a depressing effect on innovation in general.”¹²⁸ Some estimate the losses simply from the *threat* of invalidation—the price of uncertainty—as equaling or exceeding a trillion dollars.¹²⁹ Extensive legal uncertainty and weakened property rights are not the factors driving economic development, growing innovation economies, increasing jobs, and flourishing societies.

This is even more concerning given an international climate in which other countries are seizing the opportunity to bolster their patent systems. China, for instance, has been reforming its patent system along the private property rights model that once defined the U.S. patent system. First, it is implementing new rules at the State Intellectual Property Office (SIPO) that “provide for the streamlined examination of patent applications” on inventions in the high-tech sector, such as those in cloud computing, AI, the Internet, and Big Data.¹³⁰ As one legal news source reported, “China’s opening up [of its patent system to new high-tech innovation] contrasts with the United States’ move to cut back on business method patents and software patents.”¹³¹

¹²⁷ See Takahashi, *supra* note 125.

¹²⁸ See National Venture Capital Association, Press Release, *Patent Attorney Robert Taylor Represents NVCA at Congressional Hearing on Patent Litigation Reform* (Feb. 12, 2015), <http://bit.ly/2uGQ6L8>.

¹²⁹ Richard Baker, *America Invents Act Cost the US Economy over \$1 Trillion*, PATENTLYO (June 8, 2015), <http://bit.ly/1Udw5wV>.

¹³⁰ Steve Brachmann, *China Streamlines Patent Examination for Internet, Big Data Patent Applications*, IPWATCHDOG (Aug. 1, 2017), <http://www.ipwatchdog.com/2017/08/01/china-streamlines-patent-examination-internet-big-data-patent-applications/>.

¹³¹ Elizabeth Chien-Hale, *A New Era for Software Patents in China*, LAW360 (May 25, 2017, 11:55 AM), <https://www.law360.com/articles/924934/a-new-era-for-software-patents-in-china>; see also Jack Ellis, *China Relaxes Rules on Software Patentability – And the United States Loses More Ground*, IAM (Mar. 3, 2017), <https://www.iam-media.com/law-policy/china-relaxes-rules-software-patent-ability-and-united-states-loses-more-ground> (“China’s apparent embrace of software patents stands in stark contrast to the situation in the United States, which many would see as the traditional home of the software industry.”).

In terms of its judicial institutions, China enacted reforms in 2014, creating three specialized IP courts in Beijing, Shanghai, and Guangzhou, and creating another fifteen IP tribunals in other regions of the country.¹³² China authorized these courts to award both injunctions and damages on a finding of patent infringement.¹³³ Patent owners in Chinese courts typically seek injunctions against infringing products, which, unlike their U.S. counterparts, judges are “generous in awarding.”¹³⁴ Finally, following the United States’ lead in creating the Court of Appeals for the Federal Circuit, a specialized single appellate court that hears all patent cases, China has announced that it is considering creating a single national IP appeals court.¹³⁵ This would create much-valued national uniformity in judicial decisions that resolve disputes and which ultimately govern the private decision-making and private-ordering institutions in its innovation economy.

Although China initially used its patent laws and institutions to promote its own domestic economic interests, it is showing signs that it is embracing the basic tenets of equal protection under the rule of law in its patent system. As reported in early 2018, “[p]atent holders in China are likely to prevail in infringement actions . . . with specialized IP courts said to have found for foreign plaintiffs in nearly every case tried to date.”¹³⁶ In December 2018, for example, a Chinese court issued a preliminary injunction against Apple selling older iPhone models in China in a patent infringement lawsuit filed by Qualcomm.¹³⁷ Two months earlier and in stark contrast to the Chinese court issuing an injunction on a finding of infringement, the U.S. International Trade Commission refused to issue an exclusion order against imports of older models of the iPhone, despite the administrative law judge finding that Apple was infringing Qualcomm’s patents.¹³⁸

The importance of these reforms in China’s patent system is confirmed by the response from innovators themselves. As the *New York Times* has reported, patent-intensive “Big Pharma is shrugging off its long-held fears of China’s rampant counterfeiting and cumbersome bureaucracy . . . Executives say that the government has made inroads in toughening protections of pharmaceutical patents.”¹³⁹

¹³² See Ryan Davis, *What You Need to Know About Patent Litigation in China*, LAW360 (Aug. 9, 2018), <https://www.law360.com/articles/1072015>.

¹³³ *See id.*

¹³⁴ *Id.*

¹³⁵ See Bing Zhao, *China Introduces Legislation to Create a National IP Appeals Court*, IAM (Oct. 24, 2018), <https://www.iam-media.com/law-policy/china-introduces-legislation-create-national-ip-appeals-court>.

¹³⁶ Grant Clark & Shelly Hagan, *What’s Intellectual Property and Does China Steal It?*, BLOOMBERG: QUICKTAKE (Mar. 22, 2018), <https://www.bloomberg.com/news/articles/2018-03-22/what-s-intellectual-property-and-does-china-steal-it-quicktake>.

¹³⁷ See Don Clark & Jack Nicas, *Chinese Court Says Apple Infringed on Qualcomm Patents*, N.Y. TIMES (Dec. 10, 2018), <https://www.nytimes.com/2018/12/10/technology/apple-qualcomm-patents-ruling.html>.

¹³⁸ See Kristen Jakobsen Osenga, *Making Important Patents Worthless*, WASH. TIMES (Oct. 15, 2018), <https://www.washingtontimes.com/news/2018/oct/15/international-trade-commission-judge-gives-apple-a>. The decision was later reviewed and reversed by the ITC on a finding that Apple did not infringe Qualcomm’s patents.

¹³⁹ Sui-Lee Wee, *Made in China: New and Potentially Lifesaving Drugs*, N.Y. TIMES, Jan 3, 2018, at B1.

Of course, all is not entirely well with China, as there are legitimate concerns about the Chinese government's authoritarianism, which has ramped up in recent years in other areas of its society.¹⁴⁰ The current protests in Hong Kong dramatically illustrate this concern. Yet, the success of China's reform of its patent system within a private law model that secures reliable and effective property rights within stable legal institutions, and any resulting economic success in its fledgling innovation economy, may provide an incentive for political and legal actors elsewhere in the Chinese government to implement further reforms in the rule of law and limited government throughout its political and legal institutions. As the U.S. sows legal uncertainty in its patent system and undermines reliable and effective patent rights, it arguably no longer has the comparative advantage to China in this key driver of its innovation economy.

V. Conclusion

The U.S. innovation economy has thrived because inventors know they can devote years of productive labor and resources in developing their inventions for the marketplace, secure in the knowledge that their patents provide a solid foundation for commercialization. Pharmaceutical companies depend on their patents to recoup billions of dollars in R&D of new drugs. Venture capitalists invest in startups on the basis of these vital property rights in new products and services, as viewers of *Shark Tank* see every week.

The PTAB looms over all of these inventive and commercial activities, threatening to cancel a valuable patent at any moment and without rhyme or reason. *eBay* similarly looms over commercial activities, incentivizing "efficient infringement" by large, capitalized companies who make an economic calculation that it is less expensive to infringe a patent, drag the patent owner through years of litigation in courts and before multiple petitions at the PTAB, and ultimately pay a court-ordered determination of a "reasonable royalty" than to negotiate a license and pay a fair market value price for the use of someone's property.¹⁴¹ In addition to the lost investments in the invalidated patents themselves, this creates uncertainty for inventors and investors, devaluing patents, and undermining the foundations of the U.S. innovation economy.

In sum, the U.S. patent system is now characterized by inordinately high costs, high legal hurdles, and discretionary and even contradictory legal processes and decisions. Congress should enact the STRONGER Patents Act to address these basic rule of law concerns at the PTAB and the denial of reliable and effective patent rights by courts under the *eBay* test. Congress should "hardwire" into the PTAB fundamental checks and balances to ensure that it recognizes and respects the rights of patent owners brought before it, as the recent regulatory reforms by Director Iancu can be easily undone by new regulations by a future Director at the USPTO. Congress should abrogate the *eBay* test, which is ahistorical and contradicts the legal doctrines that have long secured the patent rights that have driven the U.S. innovation economy for over two centuries. This is necessary and real reform that will bring back balance to the U.S. patent

¹⁴⁰ See Jonathan Tepperman, *China's Great Leap Backward*, FOREIGN POL'Y (Oct. 15, 2018, 8:00 AM), <https://foreignpolicy.com/2018/10/15/chinas-great-leap-backward-xi-jinping> (reporting on China's return to authoritarianism).

¹⁴¹ See Adam Mossoff & Bhamati Viswanathan, *Explaining Efficient Infringement* (May 11, 2017), <https://cpip.gmu.edu/2017/05/11/explaining-efficient-infringement/>.

system as the “gold standard” of “innovation engines”—reliable and effective property rights, stable legal institutions, and the rule of law.