

Patient Patents

Can certain types of patent litigation be beneficially delayed?

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Believe it or not, a large number of patent cases are today being litigated too quickly. Given the lumbering pace of litigation in general and the premium typically placed on speed in particular, this claim might seem implausible. But, in patent law, short litigation delays can significantly improve judicial accuracy; and, thanks to a recent change in the Supreme Court's patent law jurisprudence, short delays are today significantly less costly than they previously were. What changed? Remedies. Prior to the recent Supreme Court intervention, a successful patent plaintiff would almost always be awarded an injunction that would prevent the defendant from continuing to use the patented technology after trial. Today, by contrast, meritorious patent plaintiffs are often denied injunctive relief and awarded, instead, court-ordered ongoing royalties. This change was made for a variety of legal and policy reasons that have nothing to do with the pace of litigation. But this change turns out to meaningfully reduce the cost of delay. After all, delay is costly in cases that might potentially involve injunctions because, in those cases, every extra day stuck in litigation is another day during which the accused infringer might wrongfully be using the patented technology. However, in cases where injunctions will not issue regardless of the ultimate legal outcome, delay raises no comparable concern. At worst, delay takes a day for which the accused infringer would have been paying a court-ordered *ongoing* royalty and transforms it into a day for which the accused infringer will instead pay court-ordered *backward-looking* damages. Either way, the infringer is paying a fee. Either way, that fee is determined by the court. The only difference is the legal label attached to the bill. As a result, these cases – cases where injunctions are not going to be awarded even if the patent holder wins on the merits – are the ideal candidates for which to consider tailored, accuracy-enhancing litigation delay.

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Introduction

On February 24, 2006, United States District Court Judge James Spencer faced a difficult decision. Research in Motion (RIM), the company behind the then-enormously popular “Blackberry” line of mobile phones, had been found guilty of infringing five patents held by a relatively unknown technology firm.¹ Judge Spencer had already ruled that RIM should pay cash damages for the infringement that took place prior to the court’s final verdict.² But, on this day, the patentee was back in court asking Judge Spencer for one thing more: an injunction against future infringement.³ The stakes were high. The patentee’s proposed injunction would in all likelihood shut down the entire Blackberry network, rendering useless millions of devices already owned by individuals, businesses, and government officials.⁴ But what choice did Judge Spencer have? RIM had been found to infringe five valid patents; the appellate court had twice

¹ See Docket Entry No. 260, NTP Inc. v. Research in Motion, No. 3:01-cv-00767 (E.D. Va. Nov 21, 2002) (jury verdict finding in favor of NTP).

² See Press Release, *Wiley Rein & Fielding Client Prevails in NTP v. Research in Motion Patent Dispute* (May 30, 2003) (listing damages awards totaling roughly \$50 million); Stuart Weinberg, *NTP Wins More Damages in RIM Patent Dispute*, THE WALL STREET JOURNAL (May 23, 2003) (same).

³ See Joshua Brockman, *Judge Lets BlackBerry Stay in Play for Now*, THE NEW YORK TIMES (Feb. 25, 2006) at B-4 (summarizing court hearing); Mark Heinzl & Amol Sharma, *Judge Scolds RIM, NTP for Not Reaching Deal*, THE WALL STREET JOURNAL (Feb. 25, 2006) at C-23 (same).

⁴ See Heinzl & Sharma, *supra* note 3, at 23 (discussing possible shutdown); Grace Wong, *BlackBerry Blackout Could be Costly*, CNN (Jan. 24, 2006) (reporting that RIM “faces a possible shutdown of its sales and service, an outcome that could paralyze U.S. businesses and cost them dearly”).

affirmed that finding;⁵ and patent law at the time was understood to include a presumption in favor of injunctive relief.⁶

The United States Department of Justice (DOJ) intervened in the case, worried that an injunction would “prevent RIM from providing . . . services that would be essential for the federal government, as well as state and local governments.”⁷ The DOJ emphasized the costs that would be imposed if millions of Blackberry devices were suddenly transformed into glorified paperweights. And the DOJ urged that any injunction at least be delayed, among other reasons because the Patent Office was at the time actively reconsidering whether the five patents in dispute had been rightly issued in the first place.⁸

But the clock was ticking. Judge Spencer had somehow managed to compress the trial process such that discovery, depositions, the exchange of expert reports, and pre-trial motion practice had all been accomplished in less than twelve months.⁹ The post-trial process, however, had already taken three years, and the Patent Office still needed years more to finalize its views and then navigate the inevitable pattern of in-

⁵ See *NTP, Inc. v. Research in Motion, Inc.*, 392 F.3d 1336 (Fed Cir 2004) (resolving a variety of appellate issues related to infringement, patent validity, and the trial process); *NTP, Inc. v. Research in Motion, Inc.*, 418 F.3d 1282 (Fed Cir 2005) (replacing the prior decision, affirming the lower court with respect to certain patent claims, and remanding the questions of whether and to what extent the verdict of infringement should be set aside).

⁶ See *MercExchange, LLC v. eBay, Inc.*, 401 F.3d 1323, 1338 (Fed Cir 2005) (“the general rule is that a permanent injunction will issue once infringement and validity have been adjudged”); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1246-47 (Fed. Cir. 1989) (same).

⁷ Marius Meland, *U.S. Government Steps into Blackberry Trial*, LAW360 (Nov. 11, 2005), quoting Docket Entry 406, *NTP Inc. v. Research in Motion*, No. 3:01-cv-00767 (E.D. Va. Nov. 8, 2005) at 5. See also Docket Entry 430, *NTP Inc. v. Research in Motion*, No. 3:01-cv-00767 (E.D. Va., Feb. 1, 2006) (motion for leave to intervene by the United States of America).

⁸ Meland, *supra* note 7 (summarizing the DOJ’s argument); Docket Entry 406, *supra* note 7 (the argument as written by the Department of Justice).

⁹ See Docket, *NTP Inc. v. Research in Motion*, No. 3:01-cv-00767 (E.D. Va.) (complaint served November 29, 2001; jury verdict announced on November 21, 2002).

office and in-court appeals.¹⁰ “The Court intends to . . . move this litigation forward so as to bring closure to this case,” Judge Spencer had written just weeks earlier in the context of an order denying RIM’s motion to stay the case pending further Patent Office review.¹¹ “Derailing these proceedings when a resolution is in sight would be ill-advised at best.”¹²

So, on that February day, Judge Spencer called the parties to his courtroom and chastised them, telling them that the “case should have settled but it hasn’t” and complaining that, as a result, the companies had left an “incredibly important decision to the court.”¹³ Brian Ferguson, a patent attorney from McDermott Will & Emory, attended the hearing and told the Wall Street Journal that the “handwriting was very clearly on the wall” and “an injunction [was] imminent.”¹⁴ Other lawyers at the time speculated that Judge Spencer was trying “to drive the parties to settle quickly” because “the judge wants this resolved by a settlement”¹⁵ rather than by court order.

And settled it was. On March 3, 2006, just one week after Judge Spencer threatened the imposition of what can only be described as a debilitating injunction,

¹⁰ See Docket Entry No. 423, Memorandum Opinion, NTP Inc. v. Research in Motion, No. 3:01-cv-00767 (E.D. Va., Nov 30, 2005) at 5-6 (“RIM . . . suggests that the patents-in-suit will be invalidated in a matter of months” whereas NTP “gives a reality-based estimated time frame of years.”).

¹¹ *Id.* at 6.

¹² *Id.*

¹³ See Docket Entry No. 461, NTP Inc. v. Research in Motion, No. 3:01-cv-00767 (E.D. Va. Nov 21, 2002) at 256-257 (transcript of hearing on damages and injunction proceedings); see also Joshua Brockman, *Judge Lets BlackBerry Stay in Play for Now*, THE NEW YORK TIMES (Feb. 25, 2006) at B-1 (summarizing court hearing).

¹⁴ Mark Heinzl & Amol Sharma, *Judge Scolds RIM, NTP for Not Reaching Deal*, THE WALL STREET JOURNAL (Feb. 25, 2006) at B-1 (quoting Ferguson).

¹⁵ Heinzl & Sharma, *supra* note 14 (summarizing attorney reactions and then quoting Peter Brown, chairman of the New York State Bar Association’s Intellectual Property committee).

RIM settled the case by writing a check for just over 600 million dollars.¹⁶ In an interview that day with reporters from the Wall Street Journal, Jim Balsillie, RIM's chairman and chief executive, lamented his inability to see the process through. "I would have loved to have a deal that had [payments] contingent" on the outcome of any Patent Office appeals, he told the reporters.¹⁷ But nervous customers¹⁸ and a "rocket docket"¹⁹ had forced his hand. RIM was out 600 million dollars, and the Patent Office's long-running patent review was now, as a practical matter, moot.

Looking back, it is tempting to criticize Judge Spencer's rush to judgment. But doing so would be plainly unfair. Judge Spencer threatened an injunction in part because he was uncomfortable with his only plausible alternative: namely, allowing infringement to continue and imposing on the parties a court-ordered forward-looking deal. That discomfort, however, is neither surprising nor unusual. Every judge is understandably uneasy when asked to determine how much a given patent is worth. To run that math right, after all, requires a rich understanding of the technology at issue;²⁰ of how that technology compares to available next-best alternatives;²¹ and of

¹⁶ See Mark Heinzl & Amol Sharma, *RIM to Pay NTP \$612.5 Million to Settle BlackBerry Patent Suit*, THE WALL STREET JOURNAL (Mar. 4, 2006) at A-3 (reporting settlement).

¹⁷ *Id.* (quoting Balsillie).

¹⁸ See Brockman, *supra* note 13 (discussing the tense situation unfolding for customers and investors); Heinzl & Sharma, *supra* note 15 (same).

¹⁹ The Eastern District of Virginia is well known as a "rocket docket" jurisdiction where cases move quickly through the trial process. See *Pragmatus AV, LLC v. Facebook, Inc.*, 769 F. Supp 2d 991, 996 (E.D. Va 2011) (acknowledging that the "Eastern District of Virginia is known as the 'rocket docket'" because "the median time from the filing of a civil action to its final disposition in this district is 10 months, compared to 26.2 months in the Northern District of California"); *Acterna, L.L.C. v. Adtech, Inc.*, 129 F. Supp. 2d 936, 938 n.1 (E.D. Va 2001) (similarly acknowledging the moniker).

²⁰ For example, patent holders often base their damages analysis on an analogy between the patented technology and some other technology that has been licensed in an unrelated private deal. The patent holder asserts that the licensed technology is similar to the patented technology and then urges the court to use the private license as a benchmark for the royalty to be applied in the litigation. To evaluate this type of evidence, a court has to really understand the technologies that are being compared. See, e.g., *Utah Med. Prod., Inc. v. Graphic Controls Corp.*, 350 F.3d 1376, 1385–

what all that might mean for real-world products, services, prices, profits, and market share.²² And, while expert testimony can in theory speak to all of these issues, accurately evaluating complicated, adverse, hired-gun technical and economic analyses is itself a difficult and precarious task.²³

Patent courts have long recognized this challenge, of course, and their response for many years was exactly the response that Judge Spencer himself pursued: they

86 (Fed. Cir. 2003) (deferring to district court's decision that a particular licensed technology was not a good proxy for the patented technology in dispute); *I/P Engine, Inc. v. AOL Inc.*, No. 2:11CV512, 2012 WL 12068846, at *2–3 (E.D. Va. Oct. 12, 2012) (resolving “a disagreement as to whether the technology underlying the agreement is comparable for the purposes of permitting it to inform Defendants’ reasonable royalty calculation”).

²¹ It is often the case that, had an adjudged infringer known about a particular patent prior to making the decision that led to legal liability, the infringer would have been able to choose the next-best alternative technology instead of opting for the patented approach. Because of this, an awareness of the costs and benefits associated with that next-best technology is often used as an input into the damages math. See, e.g., *Zygo Corp. v. Wyko Corp.*, 79 F.3d 1563, 1571–72 (Fed. Cir. 1996) (directing lower court to consider defendant’s non-infringing alternative); *Parker-Hannifin Corp. v. Champion Labs., Inc.*, No. 1:06-CV-2616, 2008 WL 3166318, at *16 (N.D. Ohio Aug. 4, 2008) (considering cost and timing of potential non-infringing alternative); *Avco Corp. v. PPG Indus., Inc.*, 867 F. Supp. 84, 99 (D. Mass. 1994) (same).

²² Patent courts are often asked to imagine a hypothetical in which the relevant infringement did not happen, using that hypothetical to evaluate how price, market share, innovation, and competition all would have played out had litigation been avoided in the first place. See, e.g., *Integra Lifesciences I, Ltd. v. Merck KGaA*, 331 F.3d 860, 869–70 (Fed. Cir. 2003), vacated on other grounds, 545 U.S. 193 (2005) (“[T]he reasonable royalty calculus assesses the relevant market as it would have developed before and absent the infringing activity. Although an exercise in approximation, this analysis must be based on sound economic and factual predicates.”)

²³ See Laura Hall, *Technical Experts in Patent Trials: A Psychological Perspective*, 39 AIPLA Q.J. 195 (2011) (“Because both parties present technical experts with contradicting technical evaluations, and because these evaluations often involve fine distinctions, jurors will likely consider an expert’s credibility and other characteristics unrelated to the expert’s technical analysis when deciding whether to accept the expert’s claims. Indeed, these factors may affect jurors’ interpretation of the testimony more than the actual quality of the expert’s technical analysis simply because jurors, as laymen, are ill-equipped to evaluate technical matters.”); Kevin Helper, *A Perversion of Knowledge and Reason: The Inherent Inadequacies in Intricate Patent Litigation*, 33 WHITTIER L. REV. 671 (2012) (making comparable points); *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1314–15 (Fed. Cir. 2011) (criticizing lower court judges for repeatedly admitting expert testimony on patent damages even though the testimony at issue was a “rule of thumb” that had no evidentiary support).

would issue, or threaten to issue, injunctions.²⁴ That is, at the end of a patent case, patent courts would routinely order the adjudged infringer to stop its unlawful behavior. Yes, the court would still have to quantify whatever infringement took place before the injunction issued. But, once the injunction was in place, the obligation to further quantify patent value would fall entirely on the litigating parties. The adjudged infringer would have to decide how much to offer the patent holder in exchange for permission to continue to use the disputed technology. The patent holder would have to determine whether to accept that amount of money or instead enforce the court's injunction.²⁵ But the court's economic imperfections would at that moment become irrelevant. Judges and juries could be happily ignorant about prices, profits, and technology details as long as they knew enough to accurately answer the binary question of whether the accused product or service should be subject to an injunction.

Times, however, have changed. In 2006, a scant three months after Judge Spencer drove settlement in the RIM litigation, the Supreme Court cast doubt on this conventional practice. Specifically, in *eBay v. MercExchange*,²⁶ the Supreme Court rejected what lower courts had previously understood to be a presumption in favor of

²⁴ See *MercExchange, LLC v. eBay, Inc.*, 401 F.3d 1323, 1339 (Fed. Cir. 2005) (gathering cases and articulating the then-existing "general rule . . . that courts will issue permanent injunctions against patent infringement absent exceptional circumstances").

²⁵ This way of thinking about patent injunctions is just an application of the general way lawyers and courts think about "property rules" more generally. A patent injunction is a property rule that in turn allows the patent holder to then negotiate with any would-be infringer. The alternative approach, a liability rule, would deny the patent holder of injunctive relief and instead have the court decide the relevant financial terms. The foundational paper on point is Guido Calabresi & Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972). For discussion and citations, see Abraham Bell & Gideon Parchomovsky, *Liability Rules*, 101 MICH. L. REV. 1, 3 (2002) ("Property rule protection forces potential takers to secure the consent of the entitlement owner, and thus allows the owner to determine the price of her entitlement. Liability rule protection, by contrast, allows potential takers to avail themselves of other people's entitlements as long as they are willing to pay a collectively determined price that is usually set by a court, a legislator, or an administrative agency.").

²⁶ *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006).

injunctive relief.²⁷ There is no such presumption, the Court announced; even a meritorious patent plaintiff should sometimes be denied injunctive relief and awarded instead a court-determined ongoing royalty.²⁸ The statistics shifted almost immediately. Whereas district courts had in prior years issued injunctions in almost every case where a patentee won on the merits and requested injunctive relief,²⁹ in 2006 patent courts awarded injunctions in only 80% of the cases.³⁰ By 2008, that rate had dropped to 69%.³¹ Courts had finally recognized what scholars had known for some time: as imperfect as they inevitably are, court-determined ongoing royalties are sometimes more accurate

²⁷ See, e.g., *Smith Int'l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1581 (Fed. Cir. 1983) (“We hold that where validity and continuing infringement have been clearly established, as in this case, immediate irreparable harm is presumed”); *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 106 F. Supp. 2d 696, 701 (D.N.J. 2000) (“The Federal Circuit has determined that irreparable harm is to be presumed when there is a clear showing of both patent validity and infringement.”); *John Mezzalingua Assocs., Inc. v. Arris Int'l, Inc.*, 298 F. Supp. 2d 813, 814 (W.D. Wis. 2005) (“I conclude that plaintiff has made a sufficiently strong showing of ultimate likelihood of success on the merits to entitle it to a presumption of irreparable harm.”).

²⁸ See *eBay*, 547 U.S. at 391 (explaining that injunctions are appropriate only if damages are inadequate); see also *Apple, Inc. v. Samsung Elecs. Co.*, 2014 U.S. Dist. LEXIS 165975 (ND Cal. 2014) at 83 (explaining that “the Federal Circuit has identified 35 U.S.C. § 283, which authorizes ‘injunctions in accordance with the principles of equity,’ as statutory authority for awarding ongoing royalties”); Mark A. Lemley, *The Ongoing Confusion Over Ongoing Royalties*, 76 MO. L. REV. 695, 695-99 (2001) (analyzing the cases post-*eBay*).

²⁹ See Lily Lim & Sarah E. Craven, *Injunctions Enjoined; Remedies Restructured*, 25 SANTA CLARA COMPUTER & HIGH TECH L.J. 787, 798 (2009) (“Before *eBay*, courts granted patentees injunctions 95% of the time after finding infringement.”).

³⁰ Christopher B. Seamen, *Permanent Injunctions in Patent Litigation After eBay: An Empirical Study*, 101 IOWA L. REV. 1949, 1983 (2016) (collecting the data).

³¹ *Id.* Note that this number surely understates the impact of the Supreme Court’s decision, in that it incorporates only those cases where an injunction was requested by the plaintiff. After *eBay*, many patent plaintiffs presumably stopped requesting injunctions altogether, knowing that those injunctions would be denied under the new legal regime anyway. For more on the issue of how self-selection biases legal statistics, see George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984) (proposing what is now called the “Priest Klein hypothesis”).

estimates of patent value than are the private valuations that result when a patent holder credibly threatens an adjudged infringer with a business-destroying injunction.³²

This change in patent remedies reflects a changing understanding as to whether private parties or courts are better situated to quantify patent value. But the change has an unintended implication: patent courts can now beneficially slow down. Why? Back when private negotiations were the preferred approach, delaying a court verdict by (say) one year was tantamount to taking a year for which prices would have been set by the market and transforming that into a year for which prices would instead have to be set by the court. Courts, after all, value any infringement that takes place prior to the final verdict, whereas private parties set prices once an injunction is in place. To whatever extent courts believed that prices set by private parties were more accurate than prices set by courts—and, remember, that was the dominant view³³—this was a reason to hurry. Faster decisions meant less time governed by patent law’s damages regime and more time governed by assumedly better private numbers.

In cases where injunctions are not going to be available regardless, however, this trade-off disappears. In these cases, delaying a court verdict by one year simply takes a year when prices would have been set by the court under the rubric of court-ordered ongoing royalties and transforms that into a year where prices will be set by the court

³² A vast literature considers this “hold-up” problem. See, among many others, Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007); Anne Layne-Farrar, Gerard Llobet & A. Jorge Padilla, *Preventing Patent Hold Up: An Economic Assessment of Ex Ante Licensing Negotiations in Standard Setting*, 37 AIPLA Q.J. 445 (2009).

³³ See John M. Golden, *Principles for Patent Remedies*, 88 TEX. L. REV. 505 (2010) (“We really have little specific sense of what the value of remedies for patent infringement generally is or should be. And it seems unlikely that we will develop a precise idea anytime soon. Until just a few years ago, decision makers tended to skate around this chasm of ignorance, trusting that the availability of injunctive relief against infringement would foster private arrangements that bridged the gap.”); *Smith Int’l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1577–78 (Fed. Cir. 1983) (explaining that injunctions give patent owners the “leverage” they need in order to “enjoy the full value” of their inventions).

under the rubric of court-ordered backward-looking damages. The court's economic imperfections drive the numbers either way. Delay is suddenly not as costly as it might have once seemed.

The benefits of delay thus begin to loom large. For example, what better way to evaluate patent validity than to allow the Patent Office the time it needs to reexamine every disputed patent in light of whatever new evidence is marshalled in court? In other areas of law, administrative agencies are routinely given this exact opportunity, with courts refusing to entertain certain types of cases until the litigants have “exhausted their remedies” by presenting their evidence to a relevant expert body first.³⁴ And even patent law has taken a tentative first step in this direction, with Congress recently creating a new “Inter Partes Review” procedure under which accused infringers are allowed to bring certain types of patent challenges to the Patent Office as long as the accused infringers do so within one year of being sued.³⁵ Modest additional delay could open this door more fully, allowing the Patent Office to

³⁴ This is the rule, for example, with respect to disputes that can be heard by the National Labor Relations Board (NLRB); complaints that are eligible to be heard by the NLRB must first be evaluated by the NLRB before they can be brought to the courts. *See Myers v. Bethlehem Shipbuilding Corp.*, 303 U.S. 41, 50-51 (1937) (noting “the long settled rule of judicial administration that no one is entitled to judicial relief for a supposed or threatened injury until the prescribed administrative remedy has been exhausted”). Another example: petitions for Habeas Corpus made by inmates at a state prison cannot be heard in federal court until after all state remedies have been exhausted. *See Derr v Burford*, 339 U.S. 200 (1950). There are countless other examples, with exhaustion required, for example, for claims under the Americans with Disabilities Act (ADA) (see 42 U.S.C.A. §§ 12111-117) and for claims under the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) (see 12 U.S.C.A. § 1821(d)).

³⁵ 35 U.S.C. § 315(b) (establishing this form of patent review). For a primer on the process, see Andrei Iancu & Ben Haber, *Post-Issuance Proceedings in the America Invents Act*, 93 J. PAT. & TRADEMARK OFF. SOC'Y 476 (2002).

participate in every case and, at that, sequencing events such that the Patent Office's decisions would come first in time and hence be binding on later lay proceedings.³⁶

Delay offers a different type of advantage as well: it can even the playing field as between patent holders and accused infringers. Today, patent holders enjoy a significant advantage in litigation because they are able to prepare their cases prior to filing. A patent holder can pick lawyers, for example, and a patent holder can similarly prepare witnesses, hire experts, and otherwise put his or her case on its best footing all before the accused infringer even suspects that a complaint is on the way. Yes, there are a few constraints on how long a patent holder can play this game. But those constraints are incredibly lax. The statute of limitations for a patent action is six years;³⁷ legal doctrines like laches and equitable estoppel are almost impossible for a patent holder to inadvertently trigger;³⁸ and declaratory judgment actions (through which a potential

³⁶ Even after the Patent Office invalidates a patent as part of an Inter Partes Review, that patent is considered to be fully valid in later court proceedings. The reason is that an adverse determination by the Patent Office is considered binding only after that decision has been fully appealed. Timing therefore matters, sometimes in shocking patterns. For example, in 2014, the Federal Circuit refused to either vacate or stay a \$391 million jury verdict even though the verdict was based on a patent that had by then been deemed invalid the Patent Office. The Patent Office's decision was pending on appeal, whereas the district court decision had been fully appealed and finalized. See *Versata Software, Inc. v. SAP Am., Inc.*, No. 2014-1430 (Fed Cir, June 18, 2014) (per curiam) (summarily affirming district court decision to deny motions to stay or vacate); *Versata Software, Inc. v. SAP Am., Inc.*, 2014 U.S. Dist. LEXIS 54640 (E.D. Tx 2014) at 10 (reasoning that it "would do a great disservice to the Seventh Amendment and the entire procedure put in place under Article III of the Constitution" if later proceedings at the Patent Office were allowed to "render nugatory" that prior court process).

³⁷ 35 U.S.C. § 286 ("no recovery shall be had for any infringement committed more than six years prior to the filing of the complaint or counterclaim for infringement in the action").

³⁸ To establish a defense of laches, an accused infringer must show that the patent holder delayed filing its case for an "unreasonable" amount of time, measured "from the time the plaintiff knew or reasonably should have known of the defendant's alleged infringing activities." *A.C. Aukerman Co. v. R.L. Chaides Const. Co.*, 960 F.2d 1020, 1032 (Fed. Cir. 1992). To prevail on a defense of equitable estoppel, meanwhile, an accused infringer must show that the patentee engaged in some type of "affirmative conduct . . . inducing the belief that it abandoned its claims against the alleged infringer." *Id.* at 1642. These thresholds have proven very difficult to meet. See, e.g., *Advanced Cardiovascular Sys. v. SciMed Life Sys.*, 988 F.2d 1157, 1160 (Fed. Cir. 1993) (refusing to find laches

infringer can control the timing of litigation by filing a complaint itself) are rare, for both substantive³⁹ and procedural⁴⁰ reasons. Thus, to a large degree, a patent holder enjoys a substantial period prior to litigation during which the patent holder can strengthen his or her hand, whereas accused infringers typically can start their work only after the relevant complaint is filed. Fast litigation clocks exacerbate this imbalance; slower litigation clocks would mitigate it.

None of this is to imply that delay has no costs, or that tremendously long delays are suddenly desirable. Delay means longer periods of uncertainty for both patent holders and accused infringers. Delay also makes it more difficult for poorly capitalized patent holders to pursue even valid claims. Moreover, delay will require that courts take more seriously the need to pay interest to patent holders to whom court-ordered royalties would now be even more overdue. That said, thanks to the recent change effected by the Supreme Court's *eBay* decision, these costs and benefits today trade off in ways that favor delay in certain cases. Here, I set out to make that argument and identify those cases.

I begin in Part I by discussing more fully the difficulties that courts face when it comes to calculating patent harms or otherwise quantifying patent value. As I hint in this Introduction, the truth is that courts are incapable of doing this work accurately,

even though the patent in dispute issued eight years before the patent holder acted to establish his legal rights). [Note to readers: there is a pending Supreme Court case that might abolish the doctrine of laches entirely. If that happens, I will update this footnote accordingly.]

³⁹ The biggest challenge from a substantive perspective is that patent infringers are often unaware of patents that they turn out to be infringing. Indeed, an accused infringer's first notice often comes only when the patent holder either sends a demand letter or files suit. I discuss the reasons for this absence of information *infra* Part II. For now, note only the obvious implication: a patent holder cannot file for declaratory relief against a patent of which it is completely unaware.

⁴⁰ The Federal Circuit has made it very difficult for a would-be litigant to establish standing for a declaratory action. For a good summary of the law, and criticisms, see Michael J. Burstein, *Rethinking Standing in Patent Challenges*, 83 GEO. WASHINGTON L. REV. 498 (2016).

and the modern trend away from injunctive relief will unavoidably put more pressure on this significant and difficult-to-mitigate weakness.

In Part II, I turn to injunctive relief. Scholars,⁴¹ courts⁴² and even the Federal Trade Commission⁴³ have all in recent years questioned whether private parties will accurately quantify patent value when negotiating under the threat of injunction. And they are right to worry. Injunctions often allow patent holders to extract payments that have very little to do with the merits of their patented technologies and much more to do with the disruption an injunction would cause to already-existing manufacturing facilities, already-signed purchase contracts, and other already-important relationships. In these situations, as bad as court-determined quantifications might be, private negotiations that take place under the threat of injunction will be predictably and systematically worse.

In Parts III and IV, I present the core of my argument. In Part III, I discuss the costs that might realistically be associated with litigation delays ranging from several months to several years. As I explain, there are real costs, but they are not nearly as

⁴¹ See, e.g., Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2010 (2007) (an injunction allows a “patent holder to capture value that has nothing to do with its invention, merely because the infringer cannot separate the infringing component from the non-infringing ones”); Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. CORP. L. 1151, 1160 (2009) (same); Vincenzo Denicolò et al., *Revisiting Injunctive Relief: Interpreting eBay in High-Tech Industries with Non-Practicing Patent Holders*, 4 J. COMPETITION L. & ECON. 571, 573 (2008) (same).

⁴² See, e.g., *Hynix Semiconductor, Inc. v. Rambus, Inc.*, 609 F. Supp. 2d 951, 984-85 (N.D. Cal. 2009) (recognizing that a proposed injunction might give undue leverage to the patent holder because the injunction would “decimate” the adjudged infringer’s business); *TruePosition, Inc. v. Andrew Corp.*, 568 F. Supp. 2d 500, 532-33 (D. Del. 2008) (recognizing that an injunction might give undue leverage for similar reasons).

⁴³ The Federal Trade Commission, *THE EVOLVING IP MARKETPLACE* (March 2011) at 5 (warning that a “patentee can use the threat of an injunction to obtain royalties covering not only the market value of the patented invention, but also a portion of the costs that the infringer would incur if it were enjoined and had to switch”).

onerous as one might at first suspect. In Part IV, I then consider how extra time could be used to increase overall judicial accuracy, among other ways by giving the Patent Office the time it needs to conduct meaningful, mandatory reviews of every patent asserted in litigation.

In Part V, I focus on a specific example around which all of the prior discussions coalesce: litigation over patents relevant to a technical standards like the 3G wireless, 4G wireless, and WiFi standards. These are high-profile, big-ticket litigations where injunctive relief is almost surely not available under *eBay*. These are litigations where the relevant litigants can easily weather a modest delay. And, for reasons I explore, these are cases where extra time would surely lead to more accurate results. As such, these cases are clear examples of situations where the power of delay can be beneficially brought to bear.

Part VI briefly concludes.

I. Measuring Patent Damages

Under current law, a patent holder whose patent has been infringed is entitled to compensation measured in one of two ways: measured by lost profits,⁴⁴ which is to say the profit the patent holder would have made had there been no infringement; or measured by a court-determined reasonable royalty,⁴⁵ which is often defined as the

⁴⁴ See, e.g., *Del Mar Avionics, Inc. v. Quinton Instrument Co.*, 836 F.2d 1320, 1326 (Fed. Cir. 1987) (“The general rule for determining the actual damages to a patentee that is itself producing the patented item is to determine the sales and profits lost to the patentee because of the infringement In order to recover lost profits a patentee must show a reasonable probability that, but for the infringement, it would have made the sales that were made by the infringer.”).

⁴⁵ 35 U.S.C. § 284 (“Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer”).

royalty the parties would have chosen had they actually negotiated just prior to the first act of infringement.⁴⁶ Patent holders are also entitled to be paid interest on whatever damages are owed, and certain court costs, including any fees paid to the court, but typically not including the costs associated with attorney time.⁴⁷

That might all sound sensible enough – and, at a certain level, it is – but the real challenge in patent law comes not in articulating these high-level concepts, but in applying them to actual cases. One problem is that patent law today gives juries too much information. The main case on the aforementioned “reasonable royalty” calculation, for example, lists no fewer than fifteen factors that a jury is allowed to consider in establishing the royalty.⁴⁸ In isolation, each of those entries makes intuitive sense. One factor, for instance, welcomes information about the “commercial relationship between the licensor and licensee, such as whether they are competitors”; another sweepingly invites testimony on the “effect of selling the patented specialty in promoting sales of other products of the licensee.”⁴⁹ In the aggregate, however, a fifteen-factor list is an invitation to mischief. A good lawyer or clever expert can massage almost any story such that it seems to fit one of those fifteen approved buckets.

⁴⁶ See *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1324 (Fed. Cir. 2009) (explaining that the most common way of calculating a reasonable royalty is through “the hypothetical negotiation or the ‘willing licensor-willing licensee’ approach, [which] attempts to ascertain the royalty upon which the parties would have agreed had they successfully negotiated an agreement just before infringement began”).

⁴⁷ 35 U.S.C. §§ 284-285; see also Nancy J. Link & Barry P. Golob, *Patent Damages: The Basics*, 1993 IDEA: THE JOURNAL OF LAW & TECH 13 (introducing damages measures).

⁴⁸ *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1119-20 (SDNY 1970), *modified and aff'd*, 446 F.2d 295 (2d Cir.). For a helpful introduction to the case, see Steven J. Shapiro, *Pitfalls in Determining the Reasonable Royalty in Patent Cases*, 17 J. LAW & ECON. 75 (2010).

⁴⁹ *Georgia-Pacific Corp.*, *supra* note 48, at 1120.

And jurors, overwhelmed by so many arguments, details, and numbers, likely respond by judging on simpler, less accurate, emotional grounds.⁵⁰

Better jury instructions could mitigate the above concerns, of course.⁵¹ More detailed verdict forms could also help, specifically by making the jury's math more vulnerable to after-the-fact judicial review.⁵² Moreover, district court judges could in theory act as gatekeepers for damages analysis, excluding theories that are permissible but implausible, or in other ways allowing only the most pertinent information to be presented in court.⁵³ Judges could also make more use of court-appointed damages

⁵⁰ Many of my colleagues understandably worry about the limitations of jury decision-making. See, e.g., Laura Gaston Dooley, *Our Juries, Our Selves: The Power, Perception, and Politics of the Civil Jury*, 80 CORNELL L. REV. 325 (1995) (discussing jury decision-making); Eric A. Posner, *Law and the Emotions*, 89 GEO. L.J. 1977, 1998-2002 (2001) (discussing the role emotions play in jury analysis).

⁵¹ Jury instructions could mitigate the problems discussed in the text, specifically by presenting to the jury only a tiny subset of the *Georgia-Pacific* factors, perhaps along with contextual information about how to apply those relevant considerations to the facts at hand. Courts, however, seem unlikely to take that step. For example, in the Seventh Circuit, district courts are today being told that, with respect to the *Georgia-Pacific* factors, "all factors should be set out and not simply those for which the parties presented affirmative evidence" for fear that, otherwise, jurors might believe that "the Court has endorsed certain of the evidence." Comm. on Pattern Jury Instructions of the Seventh Circuit, *Federal Civil Jury Instructions of the Seventh Circuit* § 11.4.4 (2009). The American Intellectual Property Law Association goes one step further, affirmatively suggesting that courts add a sixteenth factor to the jury's charge (!), inviting jurors to consider "any other economic factor a normally prudent business person would ... take into consideration." Am. Intell. Prop. Law Ass'n, *AIPLA Model Patent Jury Instructions* § 11.16 (2015).

⁵² Verdict forms are often surprisingly thin. In one recent patent case, for example, the verdict form simply stated, "please identify the amount of monetary damages that will compensate" the patent holder for the alleged infringement, with no indication of whether the jury was supposed to compensate for past infringement only, or for both past and ongoing infringement. The verdict form did not require that the jury show its calculations, either, which meant that there was no information available to clarify the verdict's intended meaning. Ultimately, the district court found that the award was for past infringement only. The appellate court affirmed, finding that the district court did not abuse its discretion. See *Telcordia Techs., Inc. v. Cisco Sys., Inc.*, 612 F.3d 1365, 1377–79 (Fed. Cir. 2010). With a more detailed verdict form, jurors would have more guidance and courts could more effectively review jury decision-making.

⁵³ The Federal Trade Commission has acknowledged both the need for "more vigorous judicial gatekeeping excluding unreliable testimony on damages" and the reality that "courts rarely exercise their gatekeeping authority in patent damages matters," choosing to narrowly focus "the reliability of an expert's methodology, without fully considering whether he reliably applied that methodology

experts, asking them to weigh the relevant economic evidence impartially and then exposing those experts to vigorous cross-examination in order to increase the reliability of their work.⁵⁴ But experience teaches that district court judges are reluctant to use any of these tools to discipline the damages conversation. After all, district court judges have long had substantial power to craft jury instructions, to require detailed verdict forms, to appoint unbiased experts, and to toss expert testimony to the extent it does not live up to acceptable scientific standards. Judges, however, use these powers sparingly,⁵⁵ and patent holders then exacerbate the problem by strategically choosing to file their cases in jurisdictions where the judges are most lax.⁵⁶

Jurors receiving too much information is one problem; ironically, jurors receiving too little information is another. For example, a patent holder will understandably focus its case on the couple patents it owns, not saying anything about other patents, owned by other patent holders, that are nevertheless relevant to the infringing product. This, however, can be an omission of enormous importance. The typical cell phone, for example, implicates thousands of patents held by dozens of firms.⁵⁷ What confidence

to the facts of the case” FTC, *supra* note 43, at 23. See also *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1314-18 (2011) (vacating a \$388 million damages award on the ground that patentee’s economic expert has invoked a “rule of thumb” that, despite being “passively tolerated” in prior Federal Circuit cases, was deemed here to be “arbitrary, unreliable and irrelevant”).

⁵⁴ For example, in a recent billion-dollar intellectual property dispute between Oracle and Google over the programming language Java, U.S. District Court Judge William Alsup appointed an independent damages expert pursuant to FRE 706 because, as one blunt news report put the point, “the judge didn’t trust either company to give him a straight assessment.” Joel Rosenblatt, *Google Objects to Oracle’s \$8.8 Billion Claim for Java Trial*, BLOOMBERG TECHNOLOGY NEWS (March 30, 2016). See *Oracle Am., Inc. v. Google Inc.*, No. C 10-03561 WHA, 2011 U.S. Dist. LEXIS 129766 (N.D. Cal. Nov. 9, 2011) (appointing independent expert).

⁵⁵ See *supra* notes 51-53.

⁵⁶ On this theme, see J. Jonas Anderson, *Court Competition for Patent Cases*, 163 U. PA. L. REV. 631 (2015); Daniel M. Klerman & Greg Reilly, *Forum Selling*, 89 S. CAL. L. REV. 241 (2016).

⁵⁷ See *infra* notes 129 (identifying patents relevant to 3G wireless) & 143 (identifying technical standards relevant to a standard smartphone).

can we have that a jury looking at one or two of those patents in isolation will come up with a remotely plausible estimate for their relative value? An analogous interaction would ask a layperson to value a car's rearview mirror without telling that layperson anything about the car's engine, its doors, or its windshield. One can imagine a lawyer in that context delivering grandiose arguments that are completely true—"no one would have bought that car without a rearview mirror!"—but it is also easy to see how those arguments would be misleading in the absence of the necessary contextual information.⁵⁸

Accused infringers cannot plausibly solve this problem. One challenge is that some of the patents missing from the analysis are missing because even the accused infringer does not know about them. After all, patent applications can languish for years at the Patent Office, completely out of view, only to then issue and become relevant to already-existing products and services.⁵⁹ Moreover, issued patents are often hidden as a practical matter: the Patent Office issues roughly 300,000 patents every year;⁶⁰ many are written to be strategically vague;⁶¹ and even well-intentioned patent

⁵⁸ For a more detailed look at the economics that apply when multiple patents all cover what consumers perceive as a single consumer product, see Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEXAS L. REV. 1991 (2007).

⁵⁹ See Steve Blount & Louis S. Zarfes, *The Use of Delaying Tactics to Obtain Submarine Patents and Amend Around a Patent That a Competitor Has Designed Around*, 81 J. PAT. & TRADEMARK OFF. SOC'Y 11 (1999) (discussing strategies like this); Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U.L. REV. 63 (2004) (same).

⁶⁰ See USPTO, U.S. Patent Statistics Chart, Calendar Years 1963-2015, at https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm.

⁶¹ Patent law tries to encourage clarity, but it is an uphill battle given that ambiguity helps patent holders maintain both flexibility and surprise. For discussion, see Sean B. Seymore, *The Teaching Function of Patents*, 85 NOTRE DAME L. REV. 621 (2010) (examining the "pervasive use of ambiguous or opaque language" in patent claims); Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719 (2009) (discussing the difficulties associated with "claiming" innovation).

drafters routinely and permissibly coin and then use idiosyncratic words and phrases.⁶² Worse, the Patent Act ironically discourages the act of reading a patent because, under modern law, the very act of reading a patent can serve as the predicate for enhanced damages and also for certain theories of third-party liability.⁶³ Given all that, accused infringers themselves often do not know the full list of patents relevant to their products and services, which obviously makes it impossible for accused infringers to reliably inform judges and juries.

Add here the fact that, even when an accused infringer does know the full list, the accused infringer will typically be reluctant to mention other patents for fear of alienating the jury. Simply put, it takes an extraordinary lawyer to explain that “my client infringes twelve other patents” as part of a sympathetic damages analysis. And if an accused infringer knew about all of the relevant patents and was willing to catalogue them for the jury, what then? No court is going to construe and evaluate dozens of patents that are not directly at issue in the case at hand, just to provide the jury with necessary context about a given product’s actual patent footprint. Indeed, courts routinely pressure patent holders to simplify cases by dropping *their own patents* from trial, either explicitly by ordering the patent holder to move forward with only a subset of the patents at issue,⁶⁴ or implicitly by limiting trial time in a way that makes it impossible to educate the jury about more than one or two patents.⁶⁵

⁶² See *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (a patentee can act as its own lexicographer); *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (patentee must use “reasonable clarity, deliberateness, and precision” when creating new terminology).

⁶³ See *Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754 (2011) (affirming a knowledge requirement for liability under 35 U.S.C. § 271(b) & (c)); *Halo Electronics v. Pulse Electronics, Inc.*, 136 S. Ct 1923 (2016) (establishing test for willful patent infringement).

⁶⁴ For example, Judge Lucy Koh from the Northern District of California once admonished Apple and Samsung to streamline their then-pending patent dispute because the case at the time implicated 16 patents, 6 trademarks, and 37 products. “I think that’s cruel and unusual punishment to a jury, so

The dynamics of a patent trial impose yet another constraint on a jury's ability to accurately value patents: accused infringers often cannot afford to invest too much credibility arguing about damages. Lawyers, of course, are enormously comfortable with the idea that an accused infringer can simultaneously argue that a patent is invalid, that the patent is not infringed, and that, if it is valid and infringed, the damages ought to be very small. But juries are considerably less comfortable with these types of "That is not my dog; if that is my dog, he did not bite you; and if that is my dog and he did bite you, you deserved it" frameworks.⁶⁶ Thus, as a strategic matter, defense counsel in a patent case will often have no choice but to deemphasize arguments about why damages should be low and focus instead on why damages are simply inappropriate. That of course presents a problem in cases where the jury decides that the patent is valid and infringed. The jury in that instance simply has not been given what it needs to do the damage numbers right, and the jury's momentum at that point likely significantly favors the patent holder regardless.⁶⁷

I'm not willing to do it," Judge Koh warned the parties in open court. See Stephen Lawson, *Judge Again Orders Apple, Samsung to Streamline Claims in iPad Patent Case*, COMPUTERWORLD (May 2, 2012) (quoting Koh). One week later, Apple and Samsung each dropped roughly half of their patent claims. See Don Reisinger, *Apple, Samsung trim patent claims, but still can't get along*, CNET (May 8, 2012).

⁶⁵ Time is frequently a serious constraint in patent litigation, and district court judges seem to use the clock as a way of encouraging patent holders to narrow their cases. See, e.g., Docket Entry 311, *Core Wireless Licensing S.a.r.l. v. Apple, Inc.*, No. 6:12-cv-00100 (E.D. Tex. Nov 17, 2014) (allocating only eight trial days in case where, at the time, eight highly technical patents were in dispute); Docket Entry 226, *Core Wireless Licensing S.a.r.l. v. Apple, Inc.*, No. 5:15-cv-05008 (N.D. Cal. Sept 7, 2016) (giving each side only 12 hours to present a case involving two technical patents, each of which raised dozens of questions about infringement and validity, where the 12 hours would include all aspects of trial, including objections, examinations, cross-examinations, opening and closing).

⁶⁶ See Stephanos Bibas, *Judicial Fact-Finding and Sentence Enhancements in a World of Guilty Pleas*, 110 YALE L.J. 1097, 1143 (2001) (noting that "defendants find it difficult to argue in the alternative to juries").

⁶⁷ Some courts bifurcate patent cases in order to mitigate these concerns. For discussion, see T. Callahan & H. Zeisel, *Split Trials and Time Saving: A Statistical Analysis*, 76 HARV. L. REV. 1606 (1963); Martin J. Bourgeois & M. Shea Adamas, *Separating Compensatory and Punitive Damage Award Decisions*

Need more? A conventional approach to “reasonable royalty” analysis is to establish some percentage – say, 2% – and then calculate damages by applying that percentage to the price of the infringing item. Patent lawyers describe this as setting a royalty rate and applying it to a royalty base. In most patent cases, there is not an obviously correct choice for the royalty base. In a case where the patent covers a camera lens, for instance, plausible arguments can be made in favor of using the price of the camera itself as the royalty base; using the retail price of a replacement lens as the royalty base; and/or using the wholesale price that the camera company pays for the lens when the camera company acquires the lens from the relevant lens manufacturer.⁶⁸ From an economic perspective, this choice should not matter. If a higher royalty base is used, the jury should see that and scale the royalty rate down proportionally. If a lower royalty base is used, the jury should compensate by scaling up. Yet patent lawyers fight intensely over this issue, clearly believing that jurors are unable to make these sorts of intuitive adjustments.⁶⁹

by *Trial Bifurcation*, 30 LAW & HUM. BEHAV. 11 (2006); Kenneth S. Bordens & Irwin A. Horowitz, *An Experimental Investigation of Procedural Issues in Complex Tort Trials*, 14 LAW & HUM. BEHAV. 269 (1990).

⁶⁸ A debate along these lines is currently raging with respect to Apple’s tablets and smartphones. Qualcomm holds patents that cover fundamental technologies relevant to wireless communication, and Qualcomm as a result charges Apple a royalty where the royalty base is roughly the retail price of Apple’s relevant iPhone or iPad product. Apple has recently cried foul, arguing that the price of the iPhone or iPad is an inappropriately high royalty base because that price builds in the value derived from features like Apple’s advanced digital camera and its popular iTunes music store. See *Complaint*, Apple, Inc. v. Qualcomm, Inc., No. 17-cv-0108 (S.D. CA, Jan 1, 2017) at pp. 1-3 (complaining, that, when “Apple spends billions redefining the concept of a smartphone camera, Qualcomm’s royalty payments go up”; “Even when Apple sells an iPhone with added memory . . . Qualcomm collects a larger royalty just because of that added memory.”). Qualcomm has not yet publicly responded; but, presumably, Qualcomm will respond by pointing out that the reason Apple integrates cameras and music players into its wireless devices is that those features benefit from the ability to transmit information in wireless form; thus, Qualcomm is acting appropriately when it endeavors to charge a royalty for the value its patents create there, too.

⁶⁹ For background, see Elizabeth M. Bailey et al., *Making Sense of ‘Apportionment’ in Patent Damages*, 12 COLUMBIA SCI. & TECH. L. REV. 255 (2011). One explanation might be that jurors are uncomfortable

Thus far, I have focused on damages measures that are designed simply to compensate patent holders for the monies they would have earned had their relevant patents not been infringed. The mathematics become even more intractable when damages attempt to do something more. Consider, for instance, deterrence. If damages in a patent case simply required the accused infringer to pay exactly what the infringer would have paid had the infringer negotiated ahead of time, accused infringers would have no incentive to negotiate. Instead, an infringer's dominant strategy would be to infringe, hope to avoid detection, and then, in any case where the infringement is detected, pay. By doing so, the infringer would benefit from the possibility of not being detected, and the infringer at worst would have to pay exactly what the infringer would have paid had the infringer announced himself from the start. Of course, knowing this, patent law cannot award as damages simply the amount of money the infringer would have paid had he paid in the first place. Damages must instead be higher; although good luck quantifying exactly how much higher given that the correct answer there turns on completely unknowable information such as the probability that infringement of this type might go unnoticed in the future.⁷⁰

An even harder adjustment along these lines is the adjustment that must be made to account for the fact that, prior to litigation, there is almost always some uncertainty as to whether the patent at issue is valid, infringed, or both. That is, at the

applying infinitesimally small royalty rates because they simply do not have experience with numbers that small, and thus the theoretical "scaling down" response has a floor that makes large royalty bases strategically attractive. Another theory is that a large royalty base sets up a David-versus-Goliath dynamic, with the jury thinking that the patent holder is requesting just a small, and hence surely reasonable, portion of the accused infringer's overall revenue.

⁷⁰ See Roger D. Blair & Thomas F. Cotter, *An Economic Analysis of Damages Rules in Intellectual Property Law*, 39 WM. & MARY L. REV. 1585, 1640 (1998) ("Some enhancement of the patentee's [damages] award ... may be necessary to deter those infringers who know about the patent, or who could learn about it at a reasonable cost, but whose conduct otherwise might go undetected or undeterred."); Cass Sunstein, David Schkade & Daniel Kahneman, *Do People Want Optimal Deterrence*, 29 J. LEGAL STUD. 237 (2000) (discussing deterrence more generally).

time of infringement, the accused infringer might plausibly believe that the patent should never have been issued, and the accused infringer might similarly believe that its accused product or service does not in fact fall within the patent's scope. Litigation resolves this uncertainty. Thus, when a patent holder prevails, the damages awarded naturally must be higher than the royalty the parties would have negotiated back when genuine uncertainty prevailed. But how much higher?⁷¹ This is a particular challenge in situations where some would-be infringers have negotiated a license while others have not. On the one hand, those negotiated licenses are a helpful benchmark as to the value of the patented technology. On the other, those licenses might substantially understate patent value, because those deals were struck before the patent was litigated and proven relevant.

My list could go on, but my point by now is clear: no matter whether the goal of the patent system is compensation, deterrence, punishment or some combination thereof, actually choosing a sensible cash response to patent infringement is enormously difficult. Court-appointed damages experts might help. Bifurcation of the liability and damages phases might help, too. But, even with those adjustments, quantification will always be a deeply imperfect science. The key question, then, is whether there is a plausible, superior alternative.

II. Injunctions

For decades, patent courts thought that there was a superior option: injunctions. The idea was simple. As soon as the court knew that a given patent was both valid and infringed, the court could order the relevant infringer to stop its unlawful activities. At that point, the court's own inability to value the patent would become irrelevant. Either

⁷¹ See Roger D. Blair & Thomas F. Cotter, *Rethinking Patent Damages*, 10 TEX. INTELL. PROP. L.J. 1, 40–42 (2001) (discussing the economics).

the infringer would stop using the technology, and hence there would be no need to further quantify patent value, or the infringer would negotiate a deal directly with the patent holder, and hence the private parties would quantify patent value untainted by the court's imperfect economic understanding.

That all sounds good in theory, but in practice injunctions cause their own substantial distortions. Consider a typical scenario where a company happens to independently invent some technology that later turns out to be subject to someone else's patent. Not knowing about the patent, the company might make substantial investments that are specifically tied to the technology. The company might build manufacturing facilities that are tailored to include the feature or component at issue. The company might sign long-term contracts to procure inputs specially suited for that now-impermissible use. The company might also make long-term commitments to its customers, such as promising to deliver the patented functionality as part of the company's overall goods and services.

These are normal commitments for a company to make. But think about what happens if a patent holder later emerges, sues, and wins an injunction. If the purpose of the injunction is simply to stop the infringement, then the injunction can obviously serve that purpose. But if the purpose of the injunction is to shift the question of patent valuation away from the not-so-accurate court and toward the assumedly-more-accurate private parties, an injunction in this context is a disaster.

The patent holder will begin any private negotiation by pointing out that, because of the injunction, the infringer can be forced to idle its manufacturing facility, break its supply contracts, and disappoint those customers and partners. The patent holder will then offer to allow the infringer to avoid those potentially disastrous disruptions, but only if the infringer is willing to pay a price that reflects the potential

costs. That is, the price set in the shadow of the injunction will have almost nothing to do with the specific merits of the patented technology. Instead, the price will be driven by questions about how hard it would be for the infringer to abandon the patented technology now, given whatever commitments the infringer made before it even knew the patent existed. Bluntly, injunctions in these situations allow patent holders to hold hostage infringers' technology-specific investments.⁷²

This hostage-taking dynamic would not be an issue if companies could reliably identify relevant patents before building manufacturing facilities, signing contracts, or otherwise making long-term commitments. In that scenario, a company interested in using a patent would contact the patent holder before any hostages were in play, and the resulting negotiation would turn fully on the merits of the patent. The parties would bicker over the relative value of the patented technology as compared to the next-best alternative. The parties would argue about the likelihood that the patent was both valid and infringed. And, in the end, if mutually acceptable terms could not be hammered out, both parties would have a meaningful opportunity to walk away from the deal, with no hostages taken let alone harmed.⁷³

Some commentators believe that companies can actually do this.⁷⁴ As they point out, patents are public documents; and that would seem to suggest that firms

⁷² There is a vast literature on this possibility for patent holdup. Good places to start include Lemley & Shapiro, *supra* note 32; Layne-Farrar et al, *supra* note 32; J. Gregory Sidak, Holdup, *Royalty Stacking, and the Presumption of Injunctive Relief for Patent Infringement: A Reply to Lemley and Shapiro*, 92 MINN. L. REV. 714 (2008); Douglas Lichtman, *Understanding the RAND Commitment*, 47 HOUSTON L. REV. 1023 (2010).

⁷³ For a discussion of the interplay between the next-best alternative and patent law's reasonable royalty analysis, see Jennifer C. Tempesta, *Non-Infringing Alternatives in Relation to Reasonable Royalty Patent Damages*, NEW YORK LAW JOURNAL (2013).

⁷⁴ See, e.g., Michael J. Meurer & Craig Allen Nard, *Patent Policy Adrift in a Sea of Anecdote: A Reply to Lichtman*, 93 GEO. L.J. 2033, 2035 (2005) (arguing that "the limited evidence indicates that many firms do read patents"); Scott Kieff, *Coordination, Property & Intellectual Property: An Unconventional*

vulnerable to injunctive relief can simply flip through the public record and identify potential obstacles ahead of time. In practice, however, that approach simply does not work. Trouble begins with the fact that every patent is written in its own vocabulary. Two patents might therefore describe the exact same technology, but the descriptions would look nothing alike, and might similarly bear no resemblance to how potential infringers talk about their own products and services.⁷⁵ To make matters worse, patent language is subject to hopelessly nuanced rules of interpretation. Indeed, there are actually cases where the Federal Circuit has struggled to decide “plausible disagreements” as to the meanings of seemingly innocuous words like “to,” “on,” “about,” and “through.”⁷⁶ In a world with that much hairsplitting—let alone the large

Approach to Anticompetitive Effects and Downstream Access, 56 EMORY L.J. 327 (2006) (arguing that patents have a “beacon” effect that helps interested parties find one another and ultimately coordinate efficient transactions).

⁷⁵ Consider in this light the pending billion-dollar dispute between, among others, MIT and the University of California over who was first to invent a promising gene-editing technology known as CRISPR. The various patents that were filed with respect to this technology all use slightly different words to articulate its details, and, thus, the Patent Trial and Appeal Board has had to evaluate extensive briefing on the question of how the technology should be defined for purposes of ultimately awarding a single definitive patent to one, but only one, of the various claimants. For details, see UC et al., Substantive Motion 3 (To Substitute Count 1 with Proposed Count 2), as filed in Patent Interference 106,048 (May 23, 2016). For a more reader-friendly summary, see Joe Palazzolo & Amy Dockser Marcus, *Who Owns Key Gene Technology? Question Heads to Court*, THE WALL STREET JOURNAL (Dec. 5, 2016).

⁷⁶ Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 LEWIS & CLARK L. REV. 29, 53 (2005) (collecting cases where the Federal Circuit had to decide “plausible disagreements” over the meanings of these words). For some other evidence in similar spirit, see Kimberly A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1 (2001) (documenting the frequency with which the Federal Circuit reverses lower court claim constructions); R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105 (2004) (showing how judges at the Federal Circuit themselves often squabble over the meaning of words and the methodologies by which to determine meaning in the first place).

number of patents in force—identifying and interpreting every potentially relevant patent is simply implausible.⁷⁷

The preceding summary applies to issued patents; patents that have yet to issue pose even more significant problems. Patent applications can be kept from public view for at least eighteen months after filing, and a strategic applicant can maintain secrecy even longer by (for example) certifying to the Patent Office that the relevant application has not been filed in any country that requires publication.⁷⁸ Moreover, even years after an original patent filing, a patent applicant can return to the Patent Office and file new claims based on an old submission.⁷⁹ Those new claims can be broader than were the original claims, and yet (1) the Patent Office will act as if those new claims were filed back when the original application was submitted,⁸⁰ and (2) any resulting patent will be valid even against an infringer who started using the relevant technology before the new claims were filed.⁸¹ Thus, a technology might be patent-free when first evaluated,

⁷⁷ This is not to imply that no patents can be identified by means of a careful search. Often, even an amateur eye can spot at least a few relevant patents in short order. In practice, however, a firm cannot hope to reliably identify all patents relevant to a given product or service, and even a single missed patent can give rise to the hostage-taking dynamic discussed above.

⁷⁸ See 32 U.S.C. § 122(b) (establishing that “each application for a patent shall be published . . . promptly after the expiration of a period of 18 months from the earliest filing date for which a benefit is sought” and also identifying exceptions to that rule). Secrecy is helpful to applicants who end up withdrawing their applications and opting instead to protect their ideas as trade secrets.

⁷⁹ This process is called filing a continuation patent, or a continuation-in-part patent. See 35 U.S.C. § 120; 37 C.F.R. § 178. See Lemley & Moore, *supra* note 58 (discussing and criticizing this practice).

⁸⁰ See 35 U.S.C. § 120 (establishing that the continuation patent “shall have the same effect, as to such invention, as though filed on the date of the prior application” if it meets certain criteria).

⁸¹ A patent that is strategically delayed, such that it issues only after a competitor’s product is already on the market, is sometimes referred to as a “submarine” patent, presumably because it sneaks up on its target much like a submarine might. Shockingly, the Federal Circuit has taken the position that there is nothing “improper” about this tactic. See *Kingsdown Med. Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 874 (Fed. Cir. 1988) (stating “there is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor’s product from the market; nor is it in any manner improper to amend or insert claims

but years later that technology might nevertheless be subject to perfectly valid but at-the-time-undetectable patent protection.

Add to this the concern that the Patent Office is not particularly reliable when it comes to rejecting patent applications that cover already-known achievements.⁸² This means that, no matter how careful a company might be, there will always remain the real risk that some later patent applicant will claim to have invented a relevant technology and, despite the fact that the invention was already known and already in actual use, nevertheless convince the Patent Office to issue a patent. Against those sorts of mistakes even careful attempts at search are no answer.

The hostage-taking dynamic is therefore inevitable. Firms will regularly create patented technology and make investments related to that technology. Firms will regularly do so without knowing that a patent already was, or later will be, relevant. And if those firms are vulnerable to injunctive relief, the resulting negotiations will inevitably overvalue patents. Specifically, patent holders will be able to demand a price that reflects not only the value of the patented technology as compared to the next-best option, but also an additional amount that reflects the disruptions the infringer would suffer if it were forced to make a switch after having already committed to the patented approach. Injunctions, then, are not a promising mechanism by which to achieve accurate patent quantification. Like court-determined valuations, injunctions are in many instances highly unlikely to get the numbers remotely right. Worse, errors here

intended to cover a competitor's product the applicant's attorney has learned about during the prosecution of a patent application.").

⁸² See, e.g., Richard Posner, *Why There Are Too Many Patents in America*, THE ATLANTIC (July 2012) (worrying that "many patent examinations are perfunctory" and as a result "too many patents are being issued."); Michael D. Frakes & Melissa P. Wasserman, *Does the U.S. Patent and Trademark Office Grant Too Many Bad Patents?: Evidence from a Quasi-Experiment*, 67 STAN. L. REV. 613 (2015) (discussing and evaluating the concern that the Patent Office issues a large number of invalid patents).

will systematically favor patent holders, always overstating the value of the patent as compared to the value the private parties would have chosen if only they had been able to negotiate prior to the first act of infringement.

It would be convenient at this point to assert that the Supreme Court understood all of this when, in its 2006 decision in *eBay v. MercExchange*, the Court unanimously rejected the “general rule” that, in patent cases, “a permanent injunction [should] issue once infringement and validity have been adjudged.”⁸³ But such an interpretation would be disingenuous. Concerns about hostage-taking were raised in the briefs that were filed at the Supreme Court during the pendency of the *eBay* appeal;⁸⁴ and concerns about hostage-taking have been examined at length in scholarly writing both before⁸⁵ and after⁸⁶ the *eBay* decision. But the Supreme Court’s decision did not focus on this dynamic. Instead, the Court rejected patent law’s “general rule” on the ground that injunctions in other areas of the law are based on a common-law, multi-factor test, and the Court saw no reason to deviate from that approach in the context of patent disputes.⁸⁷

Whatever the Supreme Court’s rationale, however, the important point is that the *eBay* decision empowered patent courts to deny injunctions even when meritorious patent plaintiffs request them. As a result, district courts today do exactly that: they

⁸³ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 393-4 (2006).

⁸⁴ See, e.g., Brief of Amicus Curiae Yahoo! Inc. in Support of Petitioner, *eBay, Inc. v. MercExchange, LLC* (2006) at 6-7 (explaining how injunctions can be used to “hold up” products and services); Brief Amici Curiae of 52 Intellectual Property Professors in Support of Petitioners, *eBay, Inc. v. MercExchange, LLC* (2006) at 5-6 (same).

⁸⁵ See, e.g., Robert P. Merges, *Of Property Rules, Coase, and Intellectual Property*, 94 COLUM. L. REV. 2655 (1994) (worrying about injunctions and holdup); Mark R. Patterson, *Inventions, Industry Standards, and Intellectual Property*, 17 BERKELEY TECH. L.J. 1043 (2002) (same).

⁸⁶ See *supra* note 32.

⁸⁷ *eBay, Inc.*, *supra* note 83, at 391.

deny injunctions in cases where public policy arguments suggest that injunctive relief would be inappropriate and they instead order adjudged infringers to pay ongoing, forward-looking royalties. Thus, for example, in *Paice, LLC v. Toyota Motor Corporation*, Judge David Folsom of the Eastern District of Texas declined to issue an injunction on the ground that an injunction would “interrupt . . . related businesses, such as dealers and suppliers,”⁸⁸ but Judge Folsom then ordered the defendant to pay an ongoing royalty of roughly \$98 per unit.⁸⁹ Similarly, in *Hynix Semiconductor v. Rambus*, Judge Ronald Whyte of the Northern District of California refused Rambus’s request for injunctive relief because “changing to a non-infringing technology would have cost the electronics industry hundreds of millions of dollars and many years,” but Judge Whyte then ordered Hynix to pay a court-ordered ongoing royalty as long as it continued to use the patented technology.⁹⁰

This creates the dynamic that is of central interest to me. Prior to the *eBay* decision, nearly every patent case would end with the court offering to issue an injunction against future infringement. Given that, delaying a court verdict by a year was tantamount to taking a year when prices would have been set by private negotiations undertaken in the shadow of an injunction and transforming that into a year when prices would instead have to be set explicitly by the court. After *eBay*, by contrast, there is a group of cases where injunctions are off the table and so the court has no choice but to answer the valuation question itself, either under the framework of traditional backward-looking damages or under the framework of the new, forward-looking ongoing royalties. In these cases, difficulties in valuation no longer argue in

⁸⁸ *Paice LLC v. Toyota Motor Corp.*, 2000 WL 2385139 (ED Tex 2006) at *6.

⁸⁹ *Paice LLC v. Toyota Motor Corp.*, 609 F.Supp 2d 620, 630 (2009). For some criticism of Judge Folsom’s economic analysis, see Mark Lemley, *Ongoing Confusion over Ongoing Royalties*, 76 MISSOURI L. REV. 695, 703-07 (2011).

⁹⁰ *Hynix Semiconductor, Inc. v. Rambus, Inc.*, 609 F. Supp.2d 951, 985 (N.D. CA 2009).

favor of fast decision-making. Either way, the infringer is paying a fee. Either way, that fee is determined by the court. Thus, the *eBay* decision opens the door to a new calculus as to the pros and cons of a modestly slower judicial process.

III. Delay: The Costs

In patent law, it is often assumed that faster is better. The International Trade Commission races to decide its cases in as little as sixteen months.⁹¹ Virginia prides itself on being a “rocket docket” jurisdiction where the median time to trial has in recent years clocked in at between eleven and sixteen months, depending on the specific reporting period.⁹² The recently enacted America Invents Act gives the Patent Office just twelve months to reexamine a patent that it previously issued but later doubts.⁹³

As I explained in the Introduction, one reason for all this haste is that Congress and the courts both want to minimize the importance of court-determined quantifications. Put another way, patent policy-makers are well aware of how difficult it is for judges and juries to value patent harms, and so patent law was built to reach injunctive relief with reasonable speed and thereby move valuation questions out of the courtroom and into the boardroom. As I also have pointed out, however, for a large class of cases today — cases where, under the Supreme Court’s *eBay* decision, no injunction will issue even if the patent holder wins on the merits — that justification no longer applies. In these cases, courts have no choice but to answer the valuation

⁹¹ See 19 C.F.R. § 210.51(a)(1) (authorizing interlocutory appeal of any order that sets a decision-making “target date” greater than 16 months after the date of institution of an original ITC investigation).

⁹² The Administrative Office of the United States Courts, U.S. District Courts, Median Time Intervals Report, available online at <http://www.uscourts.gov/statistics-reports/us-district-courts-judicial-business-2015> (updated every six months).

⁹³ 35 U.S.C. § 316(a)(11).

question themselves, and thus fast decisions no longer help from a valuation perspective. So why not slow things down?

One reason for courts to hurry is that a dollar paid today is not the same as a dollar paid next year. This concept is often referred to as the “time value of money”⁹⁴ and the intuition is likely familiar. If an infringer owes one dollar to a patent holder, that patent holder is obviously better off if the dollar is paid immediately rather than months from now. If the patent holder has possession of that dollar, after all, he can use it to support his business, use it to purchase some consumption item for himself or his family, or simply put it in the bank and earn interest. Delay thus threatens to underpay patent holders. If an infringer is determined to owe a particular royalty, but that determination is delayed by several years, the value of the payment to the patent holder is lower than it would have been had the payment been prompt.

This, of course, is not a reason to rush; it is instead a reason to award prejudgment interest. That is, patent courts can fully compensate for this harm by accounting for the time value of money when calculating damages. Section 284 of the Patent Act provides the necessary legal authority: “Upon finding for the claimant, the court shall award the claimant damages adequate to compensate for the infringement, . . . together with interest . . . as fixed by the court.”⁹⁵ And the Federal Circuit has made clear that the purpose of this language is “to compensate for the delay a patentee experiences in obtaining money he would have received sooner if no infringement had

⁹⁴ This is an issue familiar to the courts. *See, e.g.*, *Till v. SCS Credit Corporation*, 541 U.S. 465, 487 (2004) (“To put it simply, \$4,000 today is worth more than \$4,000 to be received 17 months from today because if received today, the \$4,000 can be invested to start earning interest immediately.”).

⁹⁵ 35 U.S.C. § 284.

occurred.”⁹⁶ The time value of money, then, is a reason to pay attention to delay, but not a reason to avoid it.

A more serious reason to be nervous about delay is the concern that some patent holders might not have the resources necessary to wait for a patent verdict. Yes, some patent litigants have tremendous resources and can patiently wait for a court to determine what monies are due. But some patents are held by smaller entities for whom a given case might be their primary or indeed only asset. The problem here is not that longer litigation is more expensive. It might be, for instance if lawyer time is continually wasted coming up to speed on the case in order to deal with some issue, only to then have the case sit idle again until the next big event. But it might not be, for instance if a slower pace allows the legal team to sequence work in a more efficient manner or to run the case with a smaller staff. The problem instead is that small patent holders might not have the liquidity they need to pay key employees and literally keep the lights on. Simply put, a patent holder cannot cover his gas bill by telling the gas company about an expected, two-year-away, highly-probable \$100 million patent verdict. That bill can only be paid in liquid cash.

This concern has more purchase than the concern about the time value of money, and it should be factored into any decision about court delay. Indeed, in instances where liquidity is a constraint, courts probably should endeavor to accelerate their work and in that way increase the likelihood that a patent holder with liquidity problems will nevertheless be able to see the relevant litigation through to completion. That said, in many patent cases, liquidity is not a plausible concern. Cisco, for instance, will not miss any bill payments, let alone close its doors, if it has to wait an extra six months before knowing exactly what will happen in its pending multi-venue patent

⁹⁶ *Sanofi-Aventis v. Apotex*, 659 F.3d 1171, 1184 (2011).

litigation against its technology rival, Arista.⁹⁷ Frequent patent litigants like Rovi⁹⁸ and Acacia⁹⁹ similarly cannot plausibly complain that an extra year of litigation would materially impact their enforcement efforts, especially if prejudgment interest is ultimately awarded to compensate for the time. Thus, while liquidity is a reason to think twice about delay, in many instances it is not a terribly compelling concern.

That takes us to the third and most important reason to avoid delay: delay increases the duration of patent uncertainty. Until a court definitively rules on a question of patent infringement, neither the patent holder nor the accused infringer will know for sure whether the patent is valid, whether the patent is infringed, and what costs will be imposed for past as well as future use.¹⁰⁰ The range of plausible outcomes can be large. In many patent cases, there is a realistic chance that the court will decide the patent is either invalid or not infringed, leading to a zero outcome. In those same cases, however, patent holders are often credibly seeking tens to hundreds of millions of dollars. Uncertainty between those extremes obviously matters, and maintaining

⁹⁷ Cisco has a market cap that exceeds \$150 billion; in 2014, it launched a series of patent cases against Arista, accusing its fast-growing rival of copying technology related to computer networking. See Don Clark, *Cisco Systems Sues Networking Rival*, THE WALL STREET JOURNAL (Dec 5, 2014) (discussing first cases); Don Clark, *Cisco Wins Another Patent Ruling Against Arista*, THE WALL STREET JOURNAL (Dec 9, 2016) (discussing one of many interim rulings).

⁹⁸ Rovi licenses a large portfolio of patents related to set-top boxes and cable television navigation. One indication of its overall financial health: Rovi just recently bought the well-known DVR company, TiVo, in a \$1.1 billion deal. See Joshua Jamerson, *Rovi to Buy TiVo in \$1.1 Billion Deal*, THE WALL STREET JOURNAL (April 29, 2016).

⁹⁹ Acacia Research Corporation is a patent clearinghouse of sorts; the firm purchases or licenses patents from others and then licenses or litigates with accused infringers. The company has been involved in countless patent trials over the years and has notched some notable wins. See, e.g., Ryan Davis, *Apple Hit With \$22M Verdict in Acacia Patent Trial in EDTX*, IP Law 360 (Sept 15, 2016).

¹⁰⁰ Third parties like customers and partners also experience this risk and uncertainty; and, interestingly, Cisco seemed to be using that uncertainty to its advantage when it sued Arista in the cases discussed *supra* note 97. See, e.g., Mark Chandler, *Protecting Innovation: Final Ruling Confirms Unlawful Infringement*, THE CISCO BLOG (June 23, 2016) (self-interestedly warning Arista that an appeal would “cause uncertainty for customers who were sold infringing products” and would “increase[] the risk for those customers who are planning their future networking needs”).

uncertainty for a longer time is therefore a real cost that must be factored into any conversation about delay.

That said, it is a mistake to think about uncertainty this way, because, while this approach focuses on the question of how long uncertainty lasts, it completely ignores the related question of how much uncertainty exists in the first place. Consider a very specific example. After trial, patent litigants are authorized to appeal almost any issue to the Federal Circuit.¹⁰¹ Those appeals regularly take eighteen months start-to-finish,¹⁰² and thus a simple analysis would conclude that they increase uncertainty by increasing the amount of time it takes for the patent system to definitively resolve disputes. That would be a ridiculous way to characterize the appellate process, however, because the entire purpose of the appellate process is to correct errors that might be made at the district court level. Thus, while patent appeals increase the timeframe during which uncertainty persists, they are designed to reduce uncertainty overall. Litigants know that there is some chance that the judge and/or jury will make a mistake at the district court level; but, because there exists the possibility to correct errors on appeal, patent litigants throughout the litigation process have more certainty that the system will ultimately reach a correct conclusion. To judge delay in terms of its implications on uncertainty, then, it is important to consider not only how much longer any given uncertainty might persist, but also how that extra time might reduce uncertainty by increasing the accuracy of the final outcome. It is to that question I now turn.

¹⁰¹ See 28 U.S.C. § 1295.

¹⁰² See Gibson Dunn, *Federal Circuit Year in Review 2014/2015* (available online at www.gibsondunn.com) (stating that the average time from a lower tribunal decision to a Federal Circuit decision from August 1, 2014 to July 31, 2015 was 596 days).

IV. Delay: The Benefits

In appropriate cases, modest delay can significantly improve overall judicial accuracy. One reason is that modest delay can even the playing field as between patent holders and accused infringers. A fast case will often be heavily biased in favor of the patent holder simply because a fast case in practice gives the patent holder more time than his adversary. Before filing, for instance, a patent holder can pick its lawyers; line up its infringement, validity and damages experts; work through its own documents in an effort to identify and mitigate problems; and reverse engineer the accused products or services.¹⁰³ An accused infringer, by contrast,¹⁰⁴ typically can do none of these things prior to litigation because the accused infringer will typically not even know that the relevant patent exists until the patent holder steps forward and serves a patent complaint.¹⁰⁴ The faster a case hits key milestones, the more this imbalance matters.¹⁰⁵

This is a particularly severe problem in cases involving a large number of patents and/or a large number of products. When ParkerVision sued Qualcomm in 2011, for instance, ParkerVision accused 71 Qualcomm products of infringing 86 claims drawn from six different patents.¹⁰⁶ As Qualcomm would ultimately argue to the court, that approach imposed a “bone-crushing burden” on Qualcomm,¹⁰⁷ seemingly for strategic

¹⁰³ This advantage is well understood by the practicing patent bar. *See, e.g.,* Maximilian A. Grant, Katharine R. Saunders, & Mia R. Sussman, *Dive Early, Dive Deep: The Importance of Pre-suit Investigation* (2009), available <https://m.lw.com/thoughtLeadership/importance-of-pre-suit-investigation> (recommending that attorneys conduct a “comprehensive pre-suit investigation”).

¹⁰⁴ *See supra* notes 74 -82 and accompanying text.

¹⁰⁵ For some data on the timing of discovery deadlines in patent cases, *see* Brian J. Love & James C. Yoon, *Predictably Expensive: A Critical Look at Patent Litigation in the Eastern District of Texas*, 44 STAN. TECH. L. REV. (forthcoming, 2017), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2835799.

¹⁰⁶ Docket Entry No. 270, Qualcomm’s Motion for Partial Summary Judgment and Accompanying Memorandum of Law, ParkerVision, Inc. v. Qualcomm Incorporated, No. 3:11-cv-719 (M.D. FL, May 22, 2013) at 2.

¹⁰⁷ *Id.*

reasons. After all, as Qualcomm also pointed out, ParkerVision did this knowing full well that, on the eve of trial, it would have no choice but to narrow its case because “it is not feasible to present more than a handful of claims to a jury” anyway.¹⁰⁸

In addition to evening the playing field, delay can improve accuracy in another way: it can open the door to greater involvement by the Patent Office. The Patent Office today offers several different procedural mechanisms through which a suspect patent can be brought back for a second look.¹⁰⁹ These procedures are promising for a host of intuitive and practical reasons. First, Patent Office reviews are run by experienced patent examiners,¹¹⁰ rather than relying on inexperienced examiners, lay judges, or lay juries. Second, most of these Patent Office procedures are adversarial, where the patent holder must square off against a motivated party ready to argue that the patent is invalid.¹¹¹ The initial process of patent review, by contrast, is a private interaction that involves only the patent applicant and the government.¹¹² Third, unlike courts, patent examiners are not required to show any deference toward their colleagues’ original

¹⁰⁸ *Id.*

¹⁰⁹ These mechanisms include Post-Grant Review, Inter Partes Review, and Covered Business Method Reivew. See 35 U.S.C. §§ 311-29. For a good summary of all the options, see Ryan J. Gatzemeyer, *Are Patent Owners Given a Fair Fight? Investigating the AIA Trial Practices*, 30 BERKELEY TECH. L.J. 531 (2015).

¹¹⁰ See 35 U.S.C. § 6 (requiring that the administrative judges who preside over post-grant proceedings be “persons of competent legal knowledge and scientific ability”). And, while some patent practitioners complain about the degree to which particular Patent Office judges are in fact familiar with the technologies they are asked to evaluate, see, e.g., Charles W. Shifley, *Your PTAB Judges Will Be Experts, Right? . . . Not So Fast*, Banner & Witcoff (July 26, 2016), it is hard to argue with the basic notion that the judges of the Patent Trial and Appeal Board are more experienced and better informed than would be almost any lay judge or lay juror.

¹¹¹ See 35 U.S.C. §§ 311-29 (inviting and defining third-party involvement).

¹¹² See 35 U.S.C. §§ 131-33 (limiting third-party involvement in the initial patent application process). See also Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law’s Presumption of Validity*, 60 STAN. L. REV. 45, 54-57 (2007) (explaining why the patent application process is not, and cannot plausibly be, a meaningfully adversarial process).

decision to issue a patent.¹¹³ These processes thus operate on a clean slate.¹¹⁴ Fourth, because only a tiny fraction of all patents are brought into these Patent Office reviews,¹¹⁵ the Patent Office can invest significant resources in this work. Bluntly, the Patent Office cannot convene the National Academy of Sciences to evaluate every pending patent application, because over 300,000 applications are filed each year.¹¹⁶ But only a tiny fraction of those applications turn out to matter in the world, and that smaller subset is the subset that might plausibly be brought back for these more careful, less deferential, adversarial expert reviews.¹¹⁷

¹¹³ Courts are required to defer heavily to the Patent Office's original decision to issue a patent. See 35 U.S.C. § 282 (stating "[a] patent shall be presumed valid"); *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91 (2011) (interpreting that provision to require "clear and convincing evidence" of invalidity). There is no such presumption, however, when the Patent Trial and Appeal Board (PTAB) reexamines an issued patent. See, e.g., *Synopsys, Inc. v. Mentor Graphics Corp.*, 814 F.3d 1309, 1326 (Fed. Cir. 2016) ("A critical aspect of the [Patent Office reexaminations] . . . is the easier standard of patent invalidation that is accorded to these PTAB proceedings. Although patents submitted for PTAB review have all been previously examined and granted and carry the statutory presumption of validity, the AIA assigns the standard of preponderance of the evidence for invalidation, whereas the district courts must apply the standard of clear and convincing evidence for invalidation.").

¹¹⁴ Mark Lemley and I have argued that courts, too, should evaluate patents on a close-to-clean slate, taking seriously the Patent Office's reasoning but not necessarily deferring to its conclusions. See Lichtman & Lemley, *supra* note 112 (arguing against the current presumption of validity under which courts can invalidate a patent only in the face of "clear and convincing" evidence); Doug Lichtman, *Patently Obvious*, THE NEW YORK TIMES (April 15, 2011) (same).

¹¹⁵ The Patent Office publishes statistics along these lines at www.uspto.gov. The most current report regarding the number of Patent Trial and Appeal Board cases can be found at https://www.uspto.gov/sites/default/files/documents/aia_statistics_october2016.pdf. And the most current chart counting patent applications and issued patents is available at https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm.

¹¹⁶ See the second chart identified *supra* note 115.

¹¹⁷ This is in fact a bigger point than it might at first seem. The patent system as it stands today endeavors to evaluate every patent application as it is filed, which means that the Patent Office inevitably ends up investing substantial resources evaluating patents that, in the end, turn out to never be read and never be licensed. A better approach would be to simply register patent applications as they are received and then invest in evaluation only with respect to that tiny handful of patents that turn out to matter. See Mark Lemley, Doug Lichtman & Bhaven Sampat, *What to Do about Bad Patents*, REGULATION MAGAZINE (Vol. 28, Winter 2005) (making this argument); Mark Lemley, *Rational Ignorance at the Patent Office*, 95 Nw. U. L. Rev. 1495 (2001) (same).

Courts cannot benefit from these administrative reviews, however, unless they are willing to wait for them to conclude. And that today is a problem. Some courts do voluntarily stay their proceedings in order to allow the Patent Office the time it needs. In *Intellectual Ventures II, LLC v. Huntington BancShares Inc.*, for example, the patent holder asserted five patents against the accused infringer, and the accused infringer did not itself file any petitions for Patent Office review.¹¹⁸ Yet, because IBM and other unaffiliated parties did file petitions against the five patents at issue, the court exercised its discretion to stay the case pending decisions from those proceedings. The court reasoned that it would “benefit from the [PTO’s] expertise” and that, even if the Patent Office’s decisions in the end did not “completely resolve this case,” they would “make this litigation simpler and more efficient.”¹¹⁹ In *Transocean Offshore Deepwater Drilling v. Seadrill Americas*, a Texas federal court similarly stayed a four-patent dispute, acknowledging that the Patent Office’s “insight and expertise regarding the validity of the patents would be of invaluable assistance to this court.”¹²⁰ More generally, a recent study suggests that roughly 60% of the time, district courts grant motions to stay in order to allow the Patent Office to review the patents in dispute.¹²¹

But the converse is the jarring number: in roughly 40% of the cases where accused infringers ask for a delay in order to invoke Patent Office review, district court judges refuse. In the middle of 2016, for instance, Judge Gregory Sleet of the District of Delaware allowed trial to proceed in a case involving five patents relevant to the blockbuster multiple sclerosis drug, Ampyra, even though four of those patents were at

¹¹⁸ *Intellectual Ventures II, LLC, v. Huntington BancShares Inc.*, 2014 WL 2589420 (S.D. OH 2014).

¹¹⁹ *Id.* at 4.

¹²⁰ *Transocean Offshore Deepwater Drilling, Inc. v. Seadrill Ams., Inc.*, Civil Action No. H-15-144, 2015 WL 6394436, at *3 (S.D. Tex. Oct. 22, 2015).

¹²¹ See Brian J. Love & James C. Yoon, *Predictably Expensive: A Critical Look at Patent Litigation in the Eastern District of Texas*, STAN. TECH. L. REV. (forthcoming, 2016) at 26.

the time already under review at the Patent Office.¹²² That set up a race: if the district court decides that the patents are valid, but the Patent Office decides that the patents are invalid, the first decision to make it through the appellate process will be binding on the parties even if the second decision is then also affirmed.¹²³ Apple similarly is currently caught in a race with respect to four patents asserted by the patent holding company, VirnetX. As it stands today, there is a pending jury verdict against Apple for \$302 million, but, in separate Patent Office proceedings, the patents undergirding that decision have all been tentatively found invalid.¹²⁴ The timing of appellate review will determine whether the Patent Office has a meaningful say over the outcome of this dispute; delay would have given the Patent Office a cleaner shot.

Aside from the above considerations, delay offers yet other advantages as well. For example, delay can increase participation by private parties. When the aforementioned patent holding company, VirnetX, sued Microsoft for patent infringement in 2007,¹²⁵ other technology companies were caught flat-footed. No one in the industry knew much about VirnetX, let alone had focused on the firm's patent claims. Thus, Microsoft alone defended its case, putting on a traditional defense in

¹²² *Compare* Docket, *Acorda Therapeutics, Inc. v. Alkem Laboratories Ltd.*, No. 1:14-cv-00882 (D. Del.) (bench trial held September 19, 2016 through September 23, 2016, with respect to U.S. patents 5,540,938; 8,007,826; 8,354,437; 8,440,703; and 8,663,685), *with* IPR2015-01853 (patent review for patent 8,007,826, instituted on March 11, 2016); IPR2015-01858 (same for patent 8,354,437); IPR2015-01850 (same for patent 8,440,703); *and* IPR2015-01857 (same for patent 8,663,685).

¹²³ See *Fresenius USA, Inc. v. Baxter International*, 721 F. 3d 1330, 1339 (Fed Cir. 2013) (analyzing situations involving inconsistent validity determinations as between the Patent Office and the courts); *Versata Software, Inc. v. SAP America, Inc.*, 564 Fed. Appx. 600 (Fed. Cir. 2014) (same).

¹²⁴ See *Verdict Form, VirnetX, Inc. v. Apple, Inc.*, Civil Case No. 6:10-cv-00417-RWS (October 3, 2016) (awarding \$302 million dollars for infringement of U.S. patents 7,418,504 and 7,921,211); *Decision on Appeal, Patent Trial and Appeal Board, Appeal No. 2016-004435* (September 12, 2016) (invalidating relevant claims of the '504 patent); *Decision on Appeal, Patent Trial and Appeal Board, Appeal No. 2016-004466* (September 12, 2016) (invalidating relevant claims of the '211 patent).

¹²⁵ *Amended Complaint, VirnetX, Inc. v. Microsoft Corp.*, Civil Case No. 6:07-cv-00080-LED (E.D. Tex, February 15, 2007) (alleging infringement of patents 6,502,135 & 7,188,180).

court¹²⁶ and also asking the Patent Office to review the patents as part of the Patent Office's "Inter Partes Review" process.¹²⁷ Within a few years, however, it became clear that VirnetX was going to assert the same patent families against dozens of other technology companies as well. So Apple and a host of other entities joined the fray, filing their own petitions with the Patent Office and in the process bringing forward hundreds of pages of evidence that Microsoft had overlooked.¹²⁸ The Microsoft appeal moved too quickly for Microsoft to benefit from those extra disclosures, however, and the end result is that Microsoft has already paid over \$200 million in licensing fees for patents that are today well on their way toward being declared invalid thanks to evidence unearthed by other firms.¹²⁹

Evidence of independent invention is yet another type of information that would become available if only courts were willing to slow down long enough to receive it. Inventors are not entitled to patent protection if their "invention" would have been obvious to someone skilled in the relevant art.¹³⁰ One good way to objectively test for obviousness is to wait and see if a large number of people skilled in the art in fact do independently come up with the same idea. If so, the idea might well have been obvious, and the patent applicant's only real contribution might be that it was first to

¹²⁶ See Docket, *VirnetX, Inc. v. Microsoft Corp.*, Civil Case No. 6:07-cv-00080-LED (E.D. Tex).

¹²⁷ See IPR2014-00558 (filed by Microsoft against the '135 patent); IPR2014-00405 (filed by Microsoft against the '180 patent).

¹²⁸ See, e.g., IPR2014-00481 (filed by Apple, successfully invalidating 19 claims of the '180 patent); IPR2015-01046 (filed by Mangrove Partners, joined by Apple, successfully invalidating 7 claims of the '135 patent).

¹²⁹ Microsoft settled its case in 2010 for a one-time payment of \$200 million. See Jeanette Borzo, *Microsoft to Pay VirnetX \$200 Million in Patent Case*, THE WALL STREET JOURNAL (May 16, 2010). As noted above, the patents were later deemed invalid by the Patent Office. See *supra* note 128.

¹³⁰ See 35 U.S.C. § 103; *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 403 (2007) (stating that the proper question before the Court was "whether a pedal designer of ordinary skill in the art, facing the wide range of needs created by developments in the field, would have seen an obvious benefit to upgrading [the pedal] with a sensor").

commemorate the obvious idea in the form of a patent application. This evidence takes time to percolate, however, particularly if patent holders tend to write up obvious ideas long before any commercial entity would plausibly consider implementing them. Here again, then, modest litigation delay could lead to better legal outcomes.

V. Patented Standards: An Application

Patents that relate to technical standards have been targeted for particular scrutiny over the past several years, with the Federal Trade Commission, the Department of Justice, and the European Commission all publicly expressing reservations about these patents and their implications.¹³¹ Part of the reason for this public scrutiny is that these patents have been at the center of several controversial, big-ticket litigations. When Nokia used standard-essential patents to sue Apple, or Motorola asserted a handful of standard-essential patents against Microsoft, it is no surprise that policy-makers, regulators, and commentators took notice.¹³² Part of the explanation is that these patents frequently change hands as part of billion-dollar patent sales. In 2009, for example, Microsoft, Apple, EMC, Ericsson and Sony teamed up to

¹³¹ See THE FEDERAL TRADE COMMISSION, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (March 2011) at 28-29 (worrying that standard-essential patents might be abused); *Complaint*, Federal Trade Commission v. Qualcomm, Inc., No. 5:17-cv-00220 (N.D. Cal., Jan 17, 2017) (accusing Qualcomm of charging excessive royalties for its standard-essential patents); *Statement of Joaquin Almunia, Vice-President of the European Commission* (February 13, 2012) (expressing concern about the use of standard-essential patents to squelch competition); James Kanter & Steve Lohr, *Europe's Antitrust Chief Censures Google's Motorola Mobility of Key Patents*, THE NEW YORK TIMES (April 29, 2014) (reporting on EU decision criticizing Motorola's use of its standard-essential patents); *Statement of the Department of Justice's Antitrust Division on Its Decision to Close Its Investigations of Google Inc.'s Acquisition of Motorola Mobility Holdings Inc. and the Acquisitions of Certain Patents by Apple Inc., Microsoft Corp. and Research in Motion Ltd.* (February 13, 2012) (also expressing concern about standard-essential patents).

¹³² See Saul Hansell & Kevin J. O'Brien, *In Lawsuit, Nokia Says iPhone Infringes Its Patents*, THE NEW YORK TIMES (October 22, 2009) (the Nokia/Apple litigation); *Microsoft Corporation v. Motorola, Inc.*, 696 F.3d 872 (2012) (appellate decision summarizing litigation between Motorola and Microsoft over Motorola's WiFi patents).

buy Nortel's standard-essential patents for \$4.5 billion.¹³³ A few weeks later, Google spent over \$12 billion to acquire Motorola's vast, standards-relevant patent portfolio.¹³⁴ And part of the explanation is that technical standards are simply of enormous importance in modern society. The fact that Verizon, AT&T, Sprint, Google, Samsung, Apple, HTC, and Microsoft were all able to agree on what it means to deploy first a 3G and now a 4G wireless network means that consumers have been able to use their cell phones and computers to communicate seamlessly across these various networks, geographies, and brands. The fact that a similar who's-who of technology companies agreed on what it means to encode music in MP3 format, store motion pictures on a DVD, and define web content using HTML5 similarly made possible industries and interactions that today seem central. That each of those standards is governed by hundreds to thousands of patents means that the patent issues were bound to attract substantial attention as well.

For my purposes, however, standard-essential patents are important for a different reason: all of the issues I have raised here resonate with particular force in the context of standard-essential patents. Start with my concern about patent valuation. I argued in Part I that courts find it difficult to accurately value patents in situations where a given product or service implicates dozens, hundreds, or thousands of patents. The problem: judges and juries understandably focus on the handful of patents directly in dispute, but for practical reasons pay comparatively little attention to all of the other patents that might be relevant to valuation but are simply not at issue in the specific case. As I phrased the point earlier, the interaction is akin to asking a layperson to

¹³³ See Peg Brickley, *Nortel \$4.5-Billion Patent Sale to Apple, Microsoft, Others Approved*, THE WALL STREET JOURNAL (July 11, 2011).

¹³⁴ See Evelyn M. Rusli, *How Google-Motorola Deal Came Together*, THE WALL STREET JOURNAL (September 13, 2011).

value a car's rearview mirror without telling that layperson much of anything about the car's engine, its doors, or its windshield.

This dynamic takes hold in nearly every patent case involving standard-essential patents because nearly every major technical standard implicates dozens, hundreds, or thousands of patents. For example, over 7,000 patents have thus far been declared essential to the 3G wireless standard,¹³⁵ and over 4,000 patents are today thought essential to the standard that defines Radio Frequency Identification (RFID) tags.¹³⁶ The list of patents declared essential to the MPEG-2 video compression standard literally runs for 24 single-spaced pages;¹³⁷ and even the protocol that governs how information is stored on a DVD, a technology that has been in widespread use for nearly twenty years, still today is known to implicate at least 870 still-active patents.¹³⁸ With numbers like those, of course patent valuations in standards-relevant cases are far from perfect.

Consider now the issue I raised in Part II: the concern that injunctions are inappropriate in certain cases because they lead to hostage-taking. This is an enormous problem with respect to standard-essential patents, because firms that sell standards-compliant products and services inevitably make large, vulnerable, long-run investments. Verizon, for example, has invested billions of dollars to deploy its 4G

¹³⁵ See David J. Goodman & Robert A. Myers, *3G Cellular Standards and Patents* (IEEE Wireless, June 13, 2005) (reporting a study of 7,796 patents that had been declared essential as of 2003).

¹³⁶ See Mark Robert, *New Report on RFID Patents*, *RFID JOURNAL* (Jul. 6, 2004), <http://www.rfidjournal.com/article/pdf/1016/1/1/rfidjournal-article1016.PDF> (noting that 4,279 RFID-related patents were issued in the United States before December 31, 2003).

¹³⁷ See *MPEG-2 Patent List*, MPEGLA, <http://www.mpegla.com/main/programs/M2/Pages/PatentList.aspx> (last visited 10/27/16).

¹³⁸ See *Patent List, DVD-Video Player, DVD6C Licensing Group*, http://www.dvd6cla.com/list/list_01_07.html (last visited October 27, 2016) (listing and offering to license 870 patents).

wireless network,¹³⁹ investments that can be held hostage by any injunction that would interfere with Verizon's continued use of the 4G standard. Apple similarly stands extremely exposed, in its case not only because of its large investments in design, marketing, and manufacturing, but also because of its contractual commitments to customers, partners, and suppliers.¹⁴⁰

Courts have recognized this problem and indeed have cited the Supreme Court's *eBay* decision as a justification for denying injunctive relief in cases that involve standard-essential patents. For example, in *Apple v. Motorola*, Judge Richard Posner of the Seventh Circuit cited *eBay* in support of his decision to deny Motorola's request for injunctive relief against Microsoft's continued use of certain patents allegedly relevant to the UMTS wireless standard.¹⁴¹ And the Ninth Circuit likewise pointed to *eBay* as part of its justification for supporting a lower court's decision to bar Motorola from enforcing an injunction that a German court had issued against Microsoft with respect to some Motorola patents allegedly relevant to WiFi.¹⁴²

Government agencies, technology companies, and scholars have also recognized these hostage-taking concerns. The Federal Trade Commission, for instance, warned in 2012 that "high switching costs combined with the threat of [injunction] could allow a patentee to obtain unreasonable licensing terms . . . , not because its invention is

¹³⁹ See SEC 10-Q, Verizon Corporation (filed January 19, 2016) (reporting \$17.7 billion in 2016 infrastructure spending, largely in support of its 4G network).

¹⁴⁰ For background on Apple's constraints, see *Complaint*, *Apple v. Qualcomm*, cited *supra* note 68. Note that standards make possible a second type of hostage-taking as well: the standard itself can be held hostage. I discuss this issue in Douglas Lichtman, *Understanding the RAND Commitment*, 47 HOUSTON L. REV. 1023, 1034 (2010).

¹⁴¹ *Apple, Inc. v. Motorola, Inc.*, 2012 WL 1959560 (N.D. Ill. 2012) (Judge Posner sitting by designation).

¹⁴² *Microsoft v. Motorola*, 696 F.3d 872 (9th Cir. 2012).

valuable, but because implementers are locked into practicing the standard.”¹⁴³ Scholars including Anne Layne-Farrar, Mark Lemley, Joe Miller, Joe Miller, Mark Patterson, Carl Shapiro and I have all also articulated this same basic concern.¹⁴⁴ Microsoft and Apple have gone so far as to publicly commit not to pursue injunctive relief in support of their standard-essential patents.¹⁴⁵ And Google has been criticized for not making a similar pledge.¹⁴⁶ As applied to standard-essential patents, then, the hostage-taking concern is real.

¹⁴³ *Third Party United States Federal Trade Commission's Statement on the Public Interest*, filed on June 6, 2012, in *In re Certain Wireless Communication Devices, Portable Music & Data Processing Devices, Computers & Components Thereof*, Inv. No. 337-TA-745, https://www.ftc.gov/sites/default/files/documents/advocacy_documents/ftc-comment-united-states-international-trade-commission-concerning-certain-wireless-communication/1206ftcwirelesscom.pdf.

¹⁴⁴ See Anne Layne-Farrar, Gerard Llobet & A. Jorge Padilla, *Preventing Patent Hold Up: An Economic Assessment of Ex Ante Licensing Negotiations in Standard Setting*, 37 AIPLA Q.J. 445 (2009); Anne Layne-Farrar, A. Jorge Padilla, & Richard Schmalensee, *Pricing Patents for Licensing in Standard-Setting Organizations: Making Sense of FRAND Commitments*, 74 ANTITRUST L.J. 671 (2007); Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007); Mark A. Lemley, *Ten Things to Do About Patent Holdup of Standards (and One Not to)*, 48 B.C. L. REV. 149, 155 (2007); Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and the Theory of the Firm*, 40 IND. L. REV. 351 (2007); Mark R. Patterson, *Antitrust and the Costs of Standard-Setting: A Comment on Teece & Sherry*, 87 MINN. L. REV. 1995, 1997 (2003); Mark R. Patterson, *Inventions, Industry Standards, and Intellectual Property*, 17 BERKELEY TECH. L.J. 1043 (2002); Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in 1 INNOVATION POLICY AND THE ECONOMY 119 (Adam Jaffe et al. eds., 2000); Carl Shapiro & Hal R. Varian, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 229 (1999); Douglas Lichtman, *Understanding the RAND Commitment*, 47 HOUSTON L. REV. 1023, 1034 (2010).

¹⁴⁵ News Release, *Microsoft's Support for Industry Standards* (published February 8, 2012) (available at <http://blogs.microsoft.com/on-the-issues/2012/02/08/microsofts-support-for-industry-standards/>) (last visited Oct. 27, 2016); Letter from Apple to Luis Jorge Romero Saro, ETSI Director-General (dated November 11, 2011) (available at <http://blog.ksnh.eu/de/wp-content/uploads/2012/02/80899178-11-11-11-Apple-Letter-to-ETSI-on-FRAND.pdf>) (last visited Oct. 27, 2016).

¹⁴⁶ See Statement of the Department of Justice's Antitrust Division, *supra* note 131 (“The division’s concerns about the potential anticompetitive use of SEPs was lessened by the clear commitments by Apple and Microsoft to license SEPs on fair, reasonable and non-discriminatory terms, as well as their commitments not to seek injunctions in disputes involving SEPs. Google’s commitments were more ambiguous and do not provide the same direct confirmation of its SEP licensing policies.”).

That takes us to the costs of delay. As I noted previously, delay is most problematic in situations where the relevant patent holder lacks the resources necessary to persist for an extra few months or years in litigation. That concern, however, has little purchase in the context of standard-essential patents. Plaintiffs in these cases are typically financially stable organizations like Nokia, Samsung, InterDigital, and Google.¹⁴⁷ Those entities are unlikely to run out of cash even if their patent cases drag on a little longer than normal. Moreover, even smaller patent holders in this market typically have outside funding and/or lawyers willing to work on contingency, both of which significantly lessen any concern about plaintiff liquidity.¹⁴⁸

As to the benefits of delay, two stand out. First, as I explained earlier, a longer litigation cycle would level the playing field as between patent plaintiffs and accused patent infringers. This is of particular importance as applied to standards. Consider Samsung. Samsung's Galaxy line of smartphones implements over a dozen technical standards, including the wireless GSM, 2G, 3G, 4G, WiFi, and Bluetooth standards, the MP3 standard for audio, and the MPEG-2 standard for video.¹⁴⁹ Taken together, these standards implicate tens of thousands of known patents and an untold number of patents that have yet to surface. Given those numbers, Samsung cannot possibly prepare a thoughtful analysis for each patent in advance of a conflict. Yet a patent holder looking to sue on its patents will pick some small handful of patents that it happens to own, prepare its case, and then serve Samsung with a complaint. Samsung starts that fight at a huge disadvantage; delay can mitigate the imbalance.

¹⁴⁷ Nokia, Samsung, InterDigital and Google each have market caps that exceed \$3 billion.

¹⁴⁸ See Federal Trade Commission, PATENT ASSERTION ENTITY ACTIVITY (FTC Study, October 2016) (research report on the patent industry, with particular focus on how entities that license standards-relevant patents fund their litigation and licensing campaigns).

¹⁴⁹ See http://www.gsmarena.com/samsung_galaxy_s7-7821.php (explaining the inner workings of a typical Samsung Galaxy smartphone).

Second, delay makes it more likely that the Patent Office will have an opportunity to reevaluate the validity of any patents alleged to be essential to a standard. Here again, this is a point about numbers. The Patent Office cannot invest sufficient resources to accurately evaluate all of the tens of thousands of patents supposedly relevant to technical standards; but the Patent Office can invest substantial resources in the much smaller number of patents that actually are picked for litigation. The only way this works, however, is if the Patent Office is given enough time to do its work after those patents are affirmatively identified in actual patent complaints.

As I argued above, Patent Office review along these lines would be a worthwhile step in almost any patent case. But it is particularly valuable as applied to standard-essential patents because these patents are part of what should be viewed as a suspect class. Bluntly, if it takes 10,000 patents to make a cellular device compliant with the 3G standard, many of those patents must describe what are, at most, incredibly modest contributions. In a normal setting, patents like these would never be asserted, because the odds of a substantial financial recovery based on a transparently weak patent would be small. For a patent that potentially applies to a standard, however, the size of the market transforms even a low-odds litigation into a case worth trying. For example, in the first three months of 2016, Apple and Samsung combined to sell over 120 million 4G-compliant smartphones.¹⁵⁰ Even a palpably weak patent is attractive for litigation if the low-odds upside is measured by taking some fraction of a dollar and multiplying by 120 million. Thus, in the context of technical standards, weak patents are particularly dangerous and Patent Office involvement is particularly warranted.

¹⁵⁰ See Press Release, *TrendForce Reports Global Smartphone Shipments Reached 292 Million Unites in First Quarter with iPhone Plunging 43.8%* (published April 18, 2016) (available online at <http://press.trendforce.com/node/view/2418.html>); Apple Inc., Q2 2016 Unaudited Summary Data (available at <http://images.apple.com/pr/pdf/q2fy16datasum.pdf>) (reporting sales of 51.2 million iPhones between January and March).

Conclusion

My argument is by now familiar. Patent courts in the past felt significant pressure to finish their work promptly because the end of a patent case also marked the end of the court's role in patent valuation. Infringement that took place during the pendency of a case had to be quantified as patent damages. Infringement that took place after the end of the case would be governed by injunction. Today, however, the Supreme Court's decision in *eBay* means that there is a large class of cases for which injunctive relief is completely off the table. In these cases, the above tradeoff disappears. Delay no longer creates an additional period during which patent valuation will be measured by the court instead of being determined through private negotiations. Instead, delay means an additional period during which the court will measure patent value under the rubric of backward-looking damages rather than measuring patent value under the rubric of ongoing royalties. Delay as a result is significantly less costly than it once was. Either way, money changes hands. Either way, the court determines the amount. Thus, the benefits of delay can in appropriate cases be harnessed.

This matters for specific cases. More importantly, however, it matters for the patent system writ large. After all, if I am right that appropriately modest delay can significantly increase the patent system's overall accuracy, that benefit will be felt not only in the implicated cases, but more generally throughout patent law's entire incentive structure. Investors, inventors, and infringers will all know that bad patents will more reliably be rejected. Investors, inventors, and infringers will likewise all know that good patents will more reliably be vindicated. This will shift behavior in the obvious ways, helping the patent system more efficiently achieve its big-picture goal of encouraging the creation and use of new, worthwhile technologies.

None of this is to imply that delay is a panacea. Nor do I mean to argue that delay should be introduced in every case. I also am not advocating outlandish delays that would tack five, six or ten years onto already-long litigation calendars. What I do mean to champion, however, is a simple but important insight: modest delay is a promising but previously unnoticed implication of the Supreme Court's recent jurisprudence questioning patent law injunctions.