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JURIES IN U.S. PATENT CASES: A COMPARATIVE PORTRAIT OF THE BOUNDARIES OF DEMOCRACY

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"It is clear that juries will necessarily differ in '*competence*,' *but it is at best incongruous to suggest that a society that sends its citizens routinely into space could never produce a jury competent to determine a case some judge might consider too* '*complex*' *for people with* '*common experience*' *to decide."*[4]

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[4] SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1127 (Fed. Cir. 1985) (Markey, C.J., additional views). Chief Judge Markey's defense of juries is admirable, but his comments here attack a straw man. Few would argue our society could *never* produce a competent jury, but some quite reasonably question whether the legal system can offer a set of capable, non-biased jurors on a consistent basis. In addition, Markey's chosen metaphor does little to help his argument, as rocket scientists and astronauts are far from typical citizens. Both occupations are extremely specialized and require massive amounts of both education and experience—practically the opposite concept of a civil jury consisting of "average" lay citizens.

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I. INTRODUCTION

The optimal boundaries of democracy are persistently challenged even in countries like the United States, with its relatively long history of democratic traditions. When we suggest that almost anyone possesses the cognitive and emotional training and competence to make a particular decision, we are assuming the complexity of that decision does not require special expertise that would need to be acquired through training and reflective experience. Consequently, expertise and democracy have always been awkward roommates.

Expertise is increasingly seen in many contexts as just another point of view.[5] Multiple factors have complemented the natural drive of our egos to see our conclusions as just as good as those of anyone else. For instance, our news industry has emerged as a 24-hour entertainment venue where argumentative fervor is a replacement for slow, reflective sharing of diverse observations.[6] Another factor in the burgeoning disrespect for expertise is the ease with which anyone can now use the Internet to cherry pick reasons to buttress whatever conclusion people wish to believe. Finally, student appraisal of what happens on campus is now protected

[5] *See* TOM NICHOLS, THE DEATH OF EXPERTISE: THE CAMPAIGN AGAINST ESTABLISHED KNOWLEDGE AND WHY IT MATTERS (2017). This compelling and important book discusses the causes and dangers of the idea that all opinions are worthy of equal respect. In other words, whatever method of knowing a person uses, his or her conclusions deserve an identical hearing. That idea is consistent with direct election of Supreme Court Justices, the evaluation of middle school students by their teachers, and accepting the conclusions of celebrities who counsel us to refrain from vaccinating our children for measles.

[6] *See* DANIEL KAHNEMAN, THINKING, FAST AND SLOW (2013). This magisterial comparison of (1) the dangers associated with speedy thinking that draws upon a huge array of cognitive biases and (2) the rich harvest from slow, systematic, and contextualized thinking should give pause to any consumer of the fever-pitch pronouncements that are the lifeblood of major contemporary news channels.

because of the emergence of customer satisfaction models in higher education; in turn, this has an immediate impact on university revenue.[7]

This article aspires to encourage legislators and jurisprudential scholars to re-examine the optimal boundaries of democracy. The complexity of patent disputes provides an illustration of a legal setting that almost all of us would agree is highly complex. The idea of a jury of citizen peers is a hallowed component of the American legal system. But principles and high-sounding abstractions cry out for cautious application because pursuing them in extreme forms risks trampling on conflicting principles. For example, we may be devoted to free speech, but a shout of "Fire!" reminds us public safety should not be sacrificed on an altar of devotion to robust public discourse. An examination of the adjudication process for patent cases in multiple countries provides us with a laboratory in which alternative attitudes toward the proper scope of democracy are modelled.

II. THE AMERICAN INFATUATION WITH THE SKILLS OF JURORS

Chief Judge Markey's comments in *SRI International v. Matsushita Electric Corp.* reveal obvious disdain for those who question the capabilities of lay juries, even in complicated patent cases. Throughout his decade-long tenure as head of the Court of Appeals for the Federal Circuit ("CAFC"), Markey consistently promoted the "fundamental Constitutional right" to a jury in civil cases—including patent trials.[8] His opinions contributed to the rapid

[7] *See* Bea González, *Students as Customers: The New Normal in Higher Education*, THE EVOLLLUTION (Oct. 28, 2016), https://evolllution.com/attracting-students/customer_service/students-as-customers-the-new-normal-in-higher-education/. As public support for higher education has dwindled, universities are more and more forced to embrace market logic as their institutional organizational framework. Revenue projections are then based on pleasing the customer base, providing the students with the housing, curriculum, and recreational opportunities they prefer. That students may need guidance from trained professionals in reshaping their preferences to match their long-run needs is seen as unfairly paternalistic. The students' desires are accepted as the major driver for the shaping of university services.

[8] John R. Alison, *The Role of Juries in Managing Patent Enforcement: Judge Howard Markey's Opinions and Writings*, 8 J. MARSHALL REV. INTELL. PROP. L.

rise of jury trials for such cases in U.S. district courts.[9] In addition to Judge Markey's enthusiastic support, the creation of standardized rules for jury instructions and interrogatories caused an increase in jury trials for patent cases.[10] While the right to a jury trial has been preserved since the creation of the Bill of Rights,[11] juries themselves were relatively uncommon in American patent litigation until the last few decades. In 1978, just over eight percent of all U.S. patent trials were argued before a jury;[12] by 2011, lay juries participated in almost seventy-five percent of cases involving patent disputes.[13]

This massive increase in the number of jury trials, combined with the special complexity of patent litigation,[14] begs the question: are juries competent enough to make fair decisions in long, highly technical patent suits? Chief Judge Markey's position was clear: he dismissed the idea that juries were incapable of understanding complicated scientific and technical issues.[15] Instead, Markey

(SPECIAL ISSUE) 41, 41–43 (2009) ("[B]y the time he left the bench in 1989, jury trials in patent cases had become common, and now are the norm.").

[9] *See id.* at 41.

[10] *See* Mark A. Lemley, *Why Do Juries Decide if Patents are Valid?*, 99 VA. L. REV. 1673, 1674–75 (2013) (revealing the surprising increase in the use of juries in patent trials over the last several decades).

[11] U.S. CONST. amend. VII ("[T]he right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law.").

[12] John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 211 (1998).

[13] *See* Mark A. Lemley, et al., *Rush to Judgment? Trial Length and Outcomes in Patent Cases*, 41 AIPLA Q. J. 169, 172–73 (2013) (explaining that of the 624 patent trials between January 1, 2000 and June 30, 2011, 466 trials, or 74.7%, were tried before juries).

[14] *See* Jordan M. Halle, *Avoiding Those Wearing Propeller Hats: The Use of Blue Ribbon Juries in Complex Patent Litigation*, 43 U. BALT. L. REV. 435, 435–36 (2014) ("However, while inventions as complicated as an engine the size of a single molecule have been developed, the juries tasked with analyzing claims to patents for such technology have not changed. At trial, the parties are likely to call expert witnesses to attempt to clarify complex scientific breakthroughs, but the matter discussed may be so far beyond the comprehension, training, and experience of the lay jury that fact-finding is rendered impossible.").

[15] Alison, *supra* note 8, at 43–44. Markey argued juries were already proven effective in the courtroom for civil and criminal cases involving complex fact patterns and legal applications, and thus a complexity exception for patent cases

promoted better trial organization,[16] such as simplification of how evidence is introduced to the jury, as well as creation of more specific verdicts as a way to focus jury attention on "key issues."[17] The backbone of Markey's support for the use of juries[18] is the Seventh Amendment.[19] He firmly believed the Bill of Rights guaranteed the right to a trial by jury no matter the circumstance, and for this reason he rebuffed court suggestions that some cases demanded a "complexity exception[]"[20] to skirt around use of juries.[21]

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was unnecessary. SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1130–31 (Fed. Cir. 1985).

[16] Alison, *supra* note 8, at 45. We have little doubt increasing procedural clarity in the courtroom would help juries (and perhaps even some judges). However, the effect of such changes is limited by the extent to which they represent a problem in the legal system. If deeper issues exist—such as the presence of natural limitations of civil juries' capabilities—all the clarity improvements in the world may not have much effect, and in that case Markey's argument would be little more than wishful thinking.

[17] *Id.*; *see also SRI Int'l*, 775 F.2d at 1128–32 (providing additional views of Chief Justice Markey).

[18] Alison, *supra* note 8, at 45 (quoting Markey in *SRI Int'l* as arguing, "[J]udges are nowhere authorized to exercise their personal predilection by revising or repealing the Seventh Amendment . . . To permit a judicial interpretation of a constitutional provision that destroys another constitutional provision is to place at risk the entire Constitution."). While Chief Judge Markey is far from the only supporter of lay juries, his high-profile position and the extent to which he wrote about preserving Seventh Amendment rights suggest his arguments are reasonable representations of thinkers who advocate relatively strict interpretation of the Constitution.

[19] U.S. CONST. amend. VII.

[20] Daniel P. Sullivan, *Must the Jury Reach a Verdict? The Constitutionality of Eliminating Juries in Patent Trials by Creating an Article I Tribunal*, 7 J. MARSHALL REV. INTELL. PROP. L. 754, 765–66 (2008) ("Over the last thirty years, the courts have begun to invoke a complexity exception, where a judge may remove a complex issue of law or fact from a jury and decide the issue herself."); *see also* James Oldham, *On the Question of a Complexity Exception to the Seventh Amendment Guarantee of Trial by Jury*, 71 OHIO ST. L.J. 1031, 1032 (2010) (analyzing the historical contexts during the creation of the Bill of Rights that would allow for a complexity exception in today's common law).

[21] Alison, *supra* note 8, at 45–46. Chief Judge Markey also fought against the "injection of 'expertise'" and specialization into the American legal system. *Id.*

Other commentators interpret the Seventh Amendment not as a guaranteed right applicable to all situations, but as a safeguard to preserve a basic democratic element of the American judicial system.[22] Support for this argument comes from the ambiguous language used in the Amendment itself,[23] as well as circumstances surrounding its creation.[24] Various courts have put forth similar justifications in the past few decades to carve out exceptions to the jury trial right.[25]

Of these court decisions, two stand out as highly skeptical of jury capabilities. In the first, the U.S. Court of Appeals for the Third Circuit held in *In re Japanese Electronic Products Antitrust*

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[22] *See* Tull v. United States, 481 U.S. 412, 426 (1987) (explaining that "[o]nly those incidents which are regarded as fundamental, as inherent in and of the essence of the system of trial by jury" are preserved by the Seventh Amendment); Galloway v. United States, 319 U.S. 372, 392 (1943) ("[T]he Amendment was designed to preserve the basic institution of jury trial in only its most fundamental elements."). In other words, some argue the right to a jury trial is *not* mandated in every civil case; rather, it merely must be available as part of the legal system at large.

[23] Sullivan, *supra* note 20, at 755 (explaining that "[w]hile the Framers all agreed on the importance of a civil jury, there was no consensus as to the extent of this right," and further, the final amendment was "purposefully vague" due to the Framers' "inability to determine which cases were (and were not) appropriate for juries to decide . . ."); *see also* Kenneth S. Klein, *The Myth of How to Interpret the Seventh Amendment Right to a Civil Jury Trial*, 53 OHIO ST. L.J. 1005, 1008–12 (1992) (discussing the establishment of the Seventh Amendment right).

[24] One source discusses:

> In the end, the debate returns to the fundamental question: *What* right to trial by jury in suits at common law was preserved by the Seventh Amendment? If a complex civil case in 1791 in England would either not have gone to a jury at all or would have gone to a form of jury that is today unlawful (the jury of experts, the special jury of merchants), it follows that a complexity exception to the Seventh Amendment should be constitutionally unobjectionable.

Oldham, *supra* note 20, at 1053 (emphasis in original)*; see also* Edith Guild Henderson, *The Background of the Seventh Amendment*, 80 HARV. L. REV. 289, 289–91 (1966).

[25] Sullivan, *supra* note 20, at 765 ("Courts have been able to whittle away a right to a jury trial because the right to a civil jury trial is not fundamental and because the Reexamination Clause of the Seventh Amendment does not guarantee that juries are the sole fact finders.").

Litigation[26] that it was constitutional to remove a case from the jury's responsibility if the complexities of the case were so great they raised due process concerns.[27] Years later the Supreme Court ruled in *Markman v. Westview Instruments, Inc.*,[28] that claim construction—the process by which the patent claims at issue are carefully interpreted and defined[29]—was a matter of law, not fact, and thus was to be decided not by juries but by the courts.[30] Many commentators agree claim construction is an extremely important part of a case's outcome,[31] so the Supreme Court's ruling in *Markman* yields more crucial questions about which aspects of patent trials, if any, are suitable for jury deliberation.

Concerns about jury responsibilities extend further if one examines the performance of district court judges in patent cases. These generalist judges immerse themselves in the legal system and—by nature of their job—are much more comfortable with a variety of legal terms and procedures than a lay person. Hence, one would expect to see this experience reflected in patent litigation at the district court level. However, many generalist trial judges display a severely inadequate understanding of the criteria for the *Daubert* test, which is essential for admitting proper scientific

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[26] *In re* Japanese Electronic Products Antitrust Litigation, 631 F.2d 1069 (3d Cir. 1980).

[27] *Id.* at 1084. *But see* Alison, *supra* note 8, at 45 (invoking Chief Judge Markey's discussion in *SRI Int'l* regarding the slippery slope of judicial decisions that attempt to point out conflicts between Constitutional Amendments).

[28] Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996).

[29] Greg Reilly, *Patent "Trolls" and Claim Construction*, 91 NOTRE DAME L. REV. 1045, 1045 (2016) ("Patent claim construction—the interpretation of the short paragraphs (or 'claims') at the end of the patent that define the scope of the patentee's rights—is 'overwhelmingly the most critical patent issue in litigation.'").

[30] *Markman*, 517 U.S. at 390.

[31] Markman v. Westview Instruments, Inc., 52 F.3d 967, 989 (Fed. Cir. 1995) (Mayer, C.J., concurring) ("[T]o decide what the claims mean is nearly always to decide the case."); *see* Reilly, supra note 29, at 1051 ("Claim construction is widely recognized as the most important step in patent litigation. It is a threshold step for virtually every other issue in a patent case."); *see also* Kimberly A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1, 8 (2001) (arguing the results of claim construction frequently predict the outcome of the case).

evidence from expert witnesses.[32] Because the validity of such scientific evidence becomes crucial in deciding many patent cases, the fact that few state trial court judges can establish the criteria for accepting such evidence is worrisome. To argue by extension, if these judges—with strong legal backgrounds and years of experience as actual judges—have trouble identifying valid expert witnesses, how would a lay jury have a fighting chance of doing a credible job accomplishing the same daunting task? And if both sides present opposing experts who seem to make valid points, by what prior skills or knowledge are jury members expected to weigh the credibility and accuracy of specialized scientists and technicians?

Recent empirical evidence further advances the case against lay juries. One study reveals a twelve percent advantage for the patentee in cases decided by juries versus those presided over by a judge.[33] Another describes jurors as more apt to sympathetically support small entities or individual inventors in disputes against big companies.[34] Still more evidence suggests juries are less proficient at sifting through multi-issue cases and deciding each claim on its own merits; rather, jury members more often side with one party for

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[32] Stephanie L. Damon-Moore, *Trial Judges and the Forensic Science Problem*, 5 N.Y.U. L. REV. 1532, 1537–41, 1557 (2017) (suggesting that trial judges are in a unique position to keep junk science out of the courtroom yet routinely fail to do so due to factors such as lack of scientific knowledge and reliability on mental heuristics). The article also notes judges statistically have a massive bias toward admitting prosecution experts over defense experts, with 95.8% of the former being admitted at trial versus 7.8% of the latter. *Id. See generally* Keelah E. G. Williams & Michael J. Saks, *Why Don't the Gatekeepers Guard the Gates? Comments Prompted by Edmond*, 36 ADEL. L. REV. 109 (2015) (exploring the failure of trial judges to adequately understand and apply *Daubert* and examining the judicial worldviews that would lead to this failure).

[33] *See* Lemley et al., *supra* note 13, at 173 (detailing that from 2000 to 2011, patentees succeeded in roughly 63% of cases decided by juries, but only 51% of suits heard by judges for a sixteen-year period).

[34] Kimberly A. Moore, *Populism and Patents*, 82 N.Y.U. L. REV. 69, 81 (2007) ("The data, however, show that in jury trials from 1990–2003, individuals won 74% of patent lawsuits against corporations. There was no similar discrimination in bench trials. In fact, corporations were slightly more successful with judges when their adversaries were individuals. Individuals prevailed against corporations in only 46% of bench trials.").

all issues in a patent suit.[35] Besides these patent-specific studies, a vast array of social science research on the questionable effectiveness of lay juries is more than enough to raise serious concerns of fairness—even for the most ardent advocate of lay participation in the law.[36]

III. IMPACT OF INEQUALITY ON THE WISDOM OF USING AMERICAN JURIES FOR PATENT PROTECTION

Another danger in maintaining the current state of American patent litigation is the vastly unequal distribution of power between large, resource-rich corporations and individual entities.[37] For example, consider the fact that the "vast majority of licensing revenues are collected by large firms"[38] and "small companies are less likely to litigate to protect their patents."[39] One might infer small

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[35] Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 366 nn.7–8 (2000) ("The data suggests that judges are statistically more capable of resolving cases issue-by-issue instead of case-by-case.").

[36] *See* THEODORE EISENBERG ET AL., *JUDGE-JURY AGREEMENT IN CRIMINAL CASES: A PARTIAL REPLICATION OF KALVEN AND ZEISEL'S THE AMERICAN JURY* 343 (Cornell Law Faculty Publications 2005) (Partially replicating Kalven and Zeisel's *The American Jury* (1966, Little and Brown), which found that judges and juries give conflicting verdicts for the same cases about 20% of the time. This study found similar results. This replication also found that as evidence gets more complex and/or technical, juries disagree with judges even more often (as much as 54% in high-complexity cases).); *see also* Bruce D. Spencer, *Estimating the Accuracy of Jury Verdicts*, 2 J. EMPIRICAL L. STUD. 4 (2007) (finding that judges and juries disagree about 23% of the time. While these figures tend to favor agreement between judges and juries, the fact that juries disagree with judges in almost a quarter of all cases seems to provide a troubling outlook for the fairness of trials.).

[37] Jeff A. Ronspies, *Does David Need a New Sling? Small Entities Face a Costly Barrier to Patent Protection*, 4 J. MARSHALL REV. INTELL. PROP. L. 184, 184 (2004) ("[I]n today's legal environment, small businesses and individual inventors holding patents are placed at a significant disadvantage when their patents are challenged by large businesses.").

[38] Peter N. Detkin, *Leveling the Patent Playing Field*, 6 J. MARSHALL REV. INTELL. PROP. L. 636, 641 (2007).

[39] Ronspies, *supra* note 37, at 197; *see* Richard W. Goldstein & Donika P. Pentcheva, AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION (AIPLA), LAW PRACTICE MANAGEMENT COMMITTEE, REPORT OF THE ECONOMIC SURVEY

entities are also less likely to file for patents, but this is far from the case.[40] Additionally, the average quality and ingenuity of individuals' patents does not appear to be the issue, as one commentator notes "[o]ver half of the sixty-one most important innovations of the 20th century came from independent inventors or small firms."[41] If creativity and originality are not essential causal factors, why the discrepancy in who benefits from patent protection?

In many instances patent infringement disputes are "make it or break it" for individuals and small businesses, whereas powerful corporations often have the capability to survive an unfavorable judgment—and the capital to prolong a case on appeal for years.[42] The complex nature of patent suits demands lengthy, highly technical trials, often involving numerous expert witnesses who only add to the extensive list of legal expenses incurred by both sides.[43] Cases that reach a judgment on the merits may last three to seven years,[44] and by that time changes in the market may have

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2015 (2015), https://www.accmeetings.com/AM16/faculty/files/Article_482_7928_LitSpend___AIPLA_2015_Report.pdf [hereinafter AIPLA REPORT] (calculating that the median cost of litigating a patent infringement case where the amount at stake is less than $1 million to be $600,000).

[40] Julia Cronin-Gilmore, *Exploring Marketing Strategies in Small Business*, 1 J. MARKETING DEV. & COMPETITIVENESS 6, 96 (2012) ("Small businesses drive the economy and sustain the technological lead in the global marketplace resulting in one-third of all new patents issued.").

[41] Ronspies, *supra* note 37, at 193.

[42] Grace Heinecke, *Pay the Troll Toll: The Patent Troll Model Is Fundamentally at Odds with the Patent System's Goal of Innovation and Competition*, 3 FORDHAM L. REV. 84 (2015) (describing how an entire industry of "patent trolls" has sprung up and how these trolls purchase large numbers of broad patents, usually from bankruptcy proceedings at a discounted price, and use the patents for the sole purpose of bullying small firms into paying licensing fees for using technology similar to that contained in the patent; if the small firm refuses to pay, the patent troll firm can sue and use its greater amount of capital to outlast the small firm in litigation.).

[43] *See* ExpertPages, *2016 Expert Witness Fees & Practices Survey* (2016), http://www.debow.com/documents/EP-2016Survey-ExecSummary-Final-Archive.pdf (showing that the average hourly rate of an expert witness is $341 per hour).

[44] Detkin, *supra* note 38, at 640.

already rendered the patent in question obsolete.[45] For the solitary inventor, this can be devastating, especially because the patent suit itself is often time-consuming and draining—leaving little time for developing new ideas or technologies that can be patented and licensed.[46]

Large entities often can easily divert resources to fight legal battles without hindering market performance or impeding development of future products, but small inventors do not share this advantage.[47] Even if an individual manages to find a law firm willing to take her case on contingency[48] and endures years of grueling court hearings, it is far from guaranteed she will receive appropriate compensation for successfully defending her patent rights.[49] Assuming the final decision awards the individual patent holder with a reasonable award for lost profit due to infringement, a substantial portion of that award—perhaps several million dollars' worth[50]—necessarily reimburses her team of lawyers for years of legal work. After accounting for all legal fees, including the costs of expert witnesses (to persuade the court of the patent's validity) and

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[45] Ronspies, *supra* note 37, at 196 n.85 (quoting James V. Grimaldi, *After Historic Flight, Wrights Went to Court*, WASH. POST, Sept. 22, 2003, at E01 [therein quoting a letter from Wilbur Wright to his lawyer: "Unnecessary delays by stipulation of counsel have already destroyed fully three fourths of the value of our patent . . . . The opportunities of the last two years will never return again."]).

[46] *See id*. at 201 (describing the difficulties encountered by small businesses and individual inventors in trying to stay afloat while also "devot[ing] substantial portions of . . . time to the defense of a patent"). Large corporations have the benefit of in-house counsel which can lead to "lower litigation costs."

[47] The economies of scale are clear: an entity with a yearly income of $50 million can more readily afford an expensive patent case than an inventor who makes $50,000 a year. *Id.* at 185–86.

[48] Often contingency represents an unappealing option for lawyers because damages in patent suits are often "difficult to calculate" or predict—and for patents which haven't made it to market yet, the risk is even higher as the profitability of the patent is unproven. *Id.* at 197–198.

[49] *Id.* at 199 ("[S]mall-entity patentees may find themselves granted an award of lost profits only to see it equaled or exceeded by the costs incurred during litigation.").

[50] Patent litigants in the United States can expect to pay anywhere from $600,000 to $5,000,000 to fight a case through appeal. *See* AIPLA REPORT, *supra* note 39, at 37.

at least one certified public accountant (to testify as to the patent's market value in terms of lost profit),[51] the individual inventor may find herself with little to no reward for retaining her intellectual property.[52]

In sum, the current legal landscape for patent law rewards those with deep pockets and the luxury of excessive patience—the very two advantages seldom possessed by small entities and individual creators. The consequences of inequality in patent litigation are clear. As one commentator remarks, "These aspects of patent litigation can have negative social effects, including the relative chilling of innovative activity . . . ."[53] Without improvements to the efficiency and accuracy of the current system, unhealthy power imbalances will linger in American patent law.

IV. PATENT LITIGATION AROUND THE WORLD

A number of countries—including Japan, Great Britain, Germany, the Netherlands, and Thailand—have implemented some type of judicial structure that explicitly handles intellectual property cases. Each system differs in scope and effectiveness, but each of these countries saw fit to give special attention to the highly complex and technical nature of patent litigation.

A. *Patent Litigation in Japan*

Recent reforms in Japanese intellectual property litigation naturally invite comparisons with the current patent trial system in the United States.[54] Strengthening the comparison is the fact that

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[51] *See generally* ExpertPages, *supra* note 43.

[52] *See* AIPLA REPORT, *supra* note 39*; see also* Lauren Cohen et al., *"Troll" Check? A Proposal for Administrative Review of Patent Litigation*, 97 B.U. L. REV. 1775 (2017) (arguing that the cost, complexity, and length of the average patent case creates a chilling effect on small inventors seeking patents at all, let alone litigating patents).

[53] Cohen, *supra* note 52, at 1794.

[54] Japanese reformers borrowed ideas from the U.S. patent system in their quest for increased efficiency. However, the Japanese purposefully avoided imitating the exact structure of American patent litigation, instead stretching beyond the U.S. system in an attempt to make the reforms specific to Japanese culture and society. In many respects the Japanese legal reforms are broader than any in recent U.S. history (including the creation of the CAFC). *See* Toshiko Takenaka, *Success*

both U.S. and Japanese trials rely on a form of the adversary system.[55] Japan has an unusual combination of code in which "the Continental European system is maintained" while "the best characteristics of Anglo-American law have been adopted." The "adoption of the adversary system in the court procedure" and a lay-judge system for certain types of cases that acts "much like the jury system adopted in the United States and elsewhere"[56] mean any comparison between the two countries' legal procedures, while not synonymous, is arguably more compatible than any attempted parallel between the U.S. and a purely civil law country.

Perhaps the most obvious difference between the two legal systems is Japan's lack of jury trials in the traditional American style.[57] For this article, the absence of a jury is helpful, as we are interested in analyzing the effectiveness of patent courts with a reduced or eliminated role for the jury.

However, a lack of lay juries in civil cases is not the only reason Japan's revised legal structure is worth studying; both Japan and the United States have a long-lasting, deeply embedded tradition of

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or Failure? Japan's National Strategy on Intellectual Property and Evaluation of its Impact from the Comparative Law Perspective, 8 WASH. U. GLOBAL STUD. L. REV. 379 (2009).

[55] Use of the adversary system differentiates Japan from many other civil law countries. *See generally* SUP. CT. OF JAPAN, OUTLINE OF CRIMINAL JUSTICE IN JAPAN (2016), https://tinyurl.com/y9oy8uuh (providing an in-depth look at criminal trials in Japan and the basis of the Japanese legal system found in the systems of other countries).

[56] *Id.* at 5–7.

[57] *See* Randall R. Rader, *The Comparative Moot Court with US and Japanese Patent Law* 37, www.win-cls.sakura.ne.jp/pdf/2/36-37.pdf ("[T]he Japanese trial resembles a US trial without a jury."). However, as of May 2009, the Japanese conduct criminal trials using the "saiban-in," a mixed jury system combining three judges and six lay jurors on a single panel. Lay jurors have an increased role in comparison to the responsibilities of jury members in the United States, as the Japanese jury can ask questions directly to witnesses. *See* Robert E. Precht, *Japan, the Jury - Opinion - International Herald Tribune*, N.Y. TIMES (Dec. 1, 2006), http://www.nytimes.com/2006/12/01/opinion/01iht-edprecht.3738928.html. Because the function of Japanese patent courts is unaltered by the addition of a jury to criminal trials, any further discussion of the saiban-in is beyond the scope of this article.

courts headed by generalist judges.[58] Specialization is the exception, not the rule. Both countries highly value judicial leaders with a broad array of knowledge,[59] thus any divergence from a generalized court system deserves our attention. Japan's rapid embrace of specialized patent courts counts as a noteworthy deviation, but these changes inspire a few questions: Why the strong desire to reform patent litigation? Why now? And why so quickly?

1. *Reform of Patent Protection in Japan*

Japan's economy suffered greatly throughout the 1990s.[60] With the new millennium approaching and no end in sight for its economic troubles, Japan sought to transform from a primarily industrial and manufacturing based economy to one based on information.[61] One of the key elements identified in such a transformation was a much greater importance placed on promoting and protecting intellectual property.[62] Having identified IP as a weakness and a key area of concern, Japan reformed its judicial

[58] Most Japanese judges train and perform as generalists, and many have no prior specialized knowledge of intellectual property before they arrive in the IP division. *See* Judge Shinohara Katsumi, *A Retrospective and a Prospective Look at the First Year of the Intellectual Property High Court*, 31 A.I.P.P.I., Sept. 2006 [hereinafter *Retrospective*]; *see also* Judge Shinohara Katsumi, *Outline of the Intellectual Property High Court of Japan*, 30 A.I.P.P.I., May 2005, at 131 http://www.ip.courts.go.jp/eng/vcms_lf/200505.pdf [hereinafter *Outline*] ("In the United States, there seems to be a strong tendency to pick judges with wide knowledge and experience, with the so-called generalist preferred to the specialist.").

[59] *See Outline*, *supra* note 58.

[60] *See* Naoyuki Yoshino & Farhad Taghizadeh-Hesary, *Effectiveness of the Easing of Monetary Policy in the Japanese Economy, Incorporating Energy Prices*, 14 J. COMP. ASIAN DEV. 227, 228–29 (2015) (describing the conditions surrounding Japan's recession and the country's struggles to spark economic growth).

[61] *See* EDWARD J. LINCOLN, ARTHRITIC JAPAN: THE SLOW PACE OF ECONOMIC REFORM (2001) (describing the conditions surrounding Japan's recession and the country's struggles to spark economic growth).

[62] *See History*, INTELL. PROP. HIGH CT. (2005), http://www.ip.courts.go.jp /eng/aboutus/history/index.html (giving a comprehensive history of IP courts in Japan, including recommendations from the "Strategic Council on Intellectual Property" which suggested intellectual property should be one of Japan's "top priorities").

system to ensure greater quality and speed of litigation in patent cases (as well as those involving other IP, such as trademarks and copyrights).[63]

Japanese courts have incorporated several Intellectual Property Divisions for almost sixty years,[64] but it wasn't until 2004 that Japanese officials amended the national district court structure and removed patent case jurisdiction from almost all district courts except those in Tokyo and Osaka.[65] One year later, the IP High Court was established as a unique branch of the Tokyo High Court.[66] Both judicial reforms were introduced, discussed, and implemented as part of a concerted effort to "reinforce the system for resolving IP cases with more expertise" and "ensure more effective and speedy trial proceedings in IP cases."[67] The IP High Court is roughly analogous to the CAFC, as both are appeals courts with national jurisdiction over patent litigation.[68] Both courts' powers are held in check by their respective Supreme Courts, although in practice, the relatively small number of cases accepted by each Supreme Court means both the IP High Court and CAFC are often the last court of appeal.[69] Despite these similarities, several important factors

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[63] *See* Judge Toshiaki Iimura, *Intellectual Property Infringement Litigations and Recent Movement toward System Reforms*, INTELL. PROP. HIGH CT. (Sept. 2004), http://www.ip.courts.go.jp/eng/documents/thesis/thes_01_thesis_01/index.html (detailing the process behind the reforms and the creation of the IP High Court).

[64] *See Outline*, *supra* note 58, at 131 ("The half-century long history of the intellectual property division . . . of the Tokyo High Court opens a new page with the start of the Intellectual Property High Court as a kind of 'special branch' within the Tokyo High Court as of April 1, 2005.").

[65] *See* Chief Judge Ryuichi Shitara, *Decade History and Future Prospects of Intellectual Property High Court*, INTELL. PROP. HIGH CT. (Apr. 2015), http://www.ip.courts.go.jp/eng/vcms_lf/2015syotyoukouen.pdf (noting these two district courts now have exclusive "first instance" jurisdiction for all civil patent cases as well as any other intellectual property disputes).

[66] *See* Iimura, *supra* note 63.

[67] *History*, *supra* note 62.

[68] *But see* Shitara, *supra* note 65 (providing that one major difference between Japanese High Court and the CAFA is Japan's IP High Court only handles IP cases (both infringement and validity) whereas the CAFC hears other appeals in addition to patent disputes).

[69] *See Outline*, *supra* note 58, at 146.

distinguish the Japanese IP courtroom as more specialized than its American counterpart.

2. *Embrace of Specialization*

First and foremost, the experience of Japan's intellectual property judges is considerable.[70] Every patent case funnels through the IP divisions of just two district courts, resulting in more yearly patent cases for each IP judge than an American district court judge might see in a lifetime.[71] Increased repetition yields familiarity with complicated court procedures and ideally results in higher efficiency and more reliable case outcomes.[72] Judicial experience is further enhanced by efforts to share case information among the patent judges of each IP court. In fact, Japan's IP judges hold monthly meetings to keep one another abreast of current cases.[73] This information sharing unifies the IP Division judges and contributes to greater consistency in court decisions.[74]

Another source of consistency is the Grand Panel system, which was formed as part of the IP High Court.[75] Acting as a court within a court, the Grand Panel is a five-judge tribunal that meets

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[70] *See Outline*, *supra* note 58, at 137–138; *see also Retrospective*, *supra* note 58, at 200 (discussing how Japanese judges, initially trained as generalists, develop expertise in intellectual property litigation through repeated exposure to "technical matters" in "highly specialized cases").

[71] "Estimates suggest that a [U.S.] district court judge presides over less than one patent trial per year on average." Donna M. Gitter, *Should the United States Designate Specialist Patent Trial Judges? An Empirical Analysis of H.R. 628 In Light of the English Experience and the Work of Professor Moore*, 10 COLUM. SCI. & TECH. L. REV. 169, 176–77 (2009). In contrast, the IP High Court sees roughly 600–700 cases per year, split among eighteen judges. *See* Judge Koichi Tanaka, IP High Court Judge, Intensified Case Management in Specialized Courts of Japan (Apr. 2007), http://www.ip.courts.go.jp/eng/vcms_lf/070412.pdf.

[72] *See supra* note 71 and accompanying text.

[73] *See Outline*, *supra* note 58, at 146 ("[T]he [IP High Court] judges are required to be aware of the cases presided over by other judges at all times, especially the cases pending at other divisions . . . .").

[74] *See id.* ("[T]he sense of unity . . . is [as] strong as ever before among the judges belonging to the IP Division.").

[75] *See* Shitara, *supra* note 65, at 9 ("It is internationally noteworthy that the High Court level decisions including Grand Panel judgment and decisions has been rendered in Japan promptly as a result of efficient proceedings of the court.").

irregularly to hear "extremely important matter[s] of law."[76] Similar in function to the *en banc* panel of the CAFC,[77] the Grand Panel was created to provide a cohesive opinion of Japanese patent judges on important IP issues of the day, without having to wait for a case to slowly make its way to the Supreme Court on appeal.[78] Grand Panel decisions—along with the continual sharing of information and discussion among IP judges—enhance the reliability and consistency of Japan's patent courts.[79] In addition, specialization allows the IP High Court judges to focus on becoming intellectual property experts. To that end, they participate in continuing education programs, attend conferences, and even take university courses to learn more about the process of research and development in the private sector.[80]

3. *A System of Experts*

Besides the experienced judicial core, Japan's IP courts are characterized by their extensive use of scientific and technical experts.[81] While it is unrealistic to expect patent judges without scientific or technical degrees to maintain a level of specialized knowledge equal to a person "skilled in the art" of a particular field,[82] patent cases demand judges be temporary experts for the

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[76] The IP High Court normally serves as an appeals court that decides matters of fact, with the Supreme Court primarily deciding matters of law. *See Outline*, *supra* note 58, at 146. The Grand Panel is simply a collaborative system for establishing "reliable rules" earlier in the patent litigation process. *Id.*

[77] Unlike the CAFC's *en banc* panel, the Grand Panel does not consist of every active judge in that court; rather, only five judges are present for each case. *Id*. Additionally, as the primary goal of the Grand Panel is to provide reliable and consistent standards, the judges are required to come to a unanimous decision. *See Retrospective*, *supra* note 58, at 210.

[78] *See Outline*, *supra* note 58, at 133.

[79] *See Retrospective*, *supra* note 58, at 211.

[80] *See id.* at 200–01 (describing the various ways in which judges on the IP High Court "take advantage of opportunities to develop their expertise").

[81] *See* JUDGE RYUICHI SHITARA, A NEW TREND IN IP LITIGATION (2006) (paper delivered at The Pan-European IP Summit in Brussels, Belgium), http://www.ip.courts.go.jp/documents/pdf/thesis/061207_08_2.pdf (introducing the idea of the expert commissioners as "a unique system from [a] comparative law standpoint").

[82] To clarify, it seems unreasonable and perhaps even far-fetched to expect judges with little technical expertise to understand a complex biotechnology

duration of the trial.[83] This scientific expertise requires resources to bring judges up to speed in a reliable, efficient, and neutral manner. Two separate entities—research officials and the expert commissioner system—offer personal assistance to Japanese IP judges during complex cases.[84]

Research officials are full-time clerks assigned to an IP division.[85] Each official comes from either the Japanese Patent Office ("JPO") or a private patent firm, and each is chosen for having expertise in a specific technical area.[86] While the extent of involvement for research officials generally depends on the court and the specific case in question,[87] their role includes questioning involved parties and strengthening their understanding before composing an official opinion for the case judges.[88] The research officials fill a valuable role in the decision-making process, but in some twenty percent of all IP cases in Japan, judges require an even more specific level of advanced expertise to ensure they understand the particular technical aspects of a claim.[89]

Enter the expert commissioner system: as unique as it is helpful, this group of part-time, court-appointed advisors is composed of over two hundred experts from a multitude of backgrounds.[90] Unlike

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patent with the same expertise as a veteran biologist—and yet, during patent trials these judges are expected to do just that. Court-provided experts provide an avenue for judges to quickly and accurately enhance their knowledge in a neutral manner.

[83] *See Outline*, *supra* note 58, at 136–37.

[84] *Id.* at 138–40.

[85] *See Retrospective*, *supra* note 58, at 201.

[86] *Id.* ("Because all research officials sit in a single room, they can easily exchange information with each other and can deal with technical matters outside his or her field of expertise.").

[87] Research officials for the IP High Court typically have a more significant role throughout the case as compared to the Tokyo and Osaka district courts. *Id.*

[88] The opinion may be delivered either orally or via written report. *Id.*

[89] Around forty percent of Japanese patent court cases may have a use for expert commissioners, but judges feel comfortable with provided evidence in roughly half of those cases. *Id.* at 212–13.

[90] *See* Shitara, *supra* note 81, at 4–5 (providing that expert commissioners are "chosen from among leading experts of various technical fields, including university professors, researchers at public organizations or private companies and patent attorneys").

in other countries—such as Germany, where experts are rarely used and often add extensive time to the length of a case[91]—the Japanese eagerly use these scientific and technical professionals to aid patent judges' comprehension. At least one expert commissioner is assigned to intricate cases, and up to three commissioners may work together, depending on the nature and complexity of a case.[92] These experts play a significant role in interpreting highly technical evidence and arguments for the judges. However, it is important to note statements from expert commissioners may not be used as actual evidence; rather, a commissioner's purpose is to help the judges understand the nature of evidence submitted by both parties.[93] So far, the expert commissioners have been successful in providing IP judges with the ability to make higher quality, more efficient, and more confident decisions.[94]

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[91] *See* GAR YEIN NG, COUNCIL OF EUROPE, EUROPEAN COMM'N FOR THE EFFICIENCY OF JUSTICE, WORKING GROUP ON THE QUALITY OF JUSTICE, STUDY ON THE ROLE OF EXPERTS IN JUDICIAL SYSTEMS OF THE COUNCIL OF EUROPE MEMBER STATES 20 (2014), https://static1.squarespace.com/static/534f89eee4b0aedbe40ae270/t/558a6d15e4b0dfba0a2afcc8/1435135253774/3rev_2014_CEPEJ-GT-QUAL_RoleExperts_en.pdf (introducing experts into the German patent litigation process causes delays in an estimated 20-50% of cases); *see also* Wolfgang von Meibom & Boris Kreye, *Germany*, 142 MANAGING INTELL. PROP., Sept. 2004, at 39, 40 (revealing that appointment of court experts "is the exception rather than the rule" in German courts).

[92] *See Retrospective*, *supra* note 58, at 213 ("An expert commissioner specializing in a field can be combined with others specializing in the neighboring fields . . . such collaboration would contribute to higher quality of technical explanation and smoother case management.").

[93] *See* Shitara, *supra* note 81, at 5. ("Although explanations given by expert commissioners in the proceedings are not competent as evidence in principle, they are very useful to help the court to deepen its understanding of the invention and other references involved in the case and to make a decision based on the evidence.").

[94] *See Retrospective*, *supra* note 58, at 213–14 ("[W]ith assistance of expert commissioners, judges can identify genuine issues among various allegations, request parties to voluntarily withdraw unnecessary arguments, and focus their arguments and case on narrowed issues, which contributes to expeditious proceedings."). Katsumi goes on to discuss a positive side effect: parties put more effort into preparing good arguments for cases with expert commissioners involved. In the end, the added expertise "increases reliability and confidence of parties in the judiciary." *Id*.

4. *Results of Reform*

Case type	Length, 1998	Length, 2008	% Change	Length, 2016
First-instance IP cases in district courts	25.7	13.7	- 53.1%	13.3
Appeals to IP High Court from district courts	11.5	7.7	- 67.0%	8.3
District trial + appeal to IP High Court	37.2	21.4	- 57.5%	21.6
Appeals to IP High Court from JPO decisions	17.2	8.0	- 46.5%	8.0
IP Appeals to any appeals court	12.1	7.7	- 63.6%	7.8

JAPANESE IP CASES, AVERAGE TIME INTERVALS FROM COMMENCEMENT TO DISPOSITION, IN MONTHS[95]

The system has been in place for fifteen years now, and the results have been promising from the beginning. The length (and therefore cost) of legal disputes dropped dramatically from 2003 to 2008 and have remained consistent as Japan's legal reforms stabilized and its judges gained more experience with court procedures and found more confidence in their roles as highly trained specialists.

Japan's two-part combination of specialized patent courts and judges and a robust system of scientific and technical experts present

[95] *Statistics*, INTELL. PROP. HIGH CT., http://www.ip.courts.go.jp/eng/documents/statistics/index.html (providing a database of Japanese patent case intervals from 1998 to 2016).

a compelling alternative to expensive, lengthy patent litigation in the United States. Two additional points strengthen this comparison: Japan's tradition of legal generalists, which mirrors the American preference for "jack of all trades" judges, and the influence of the American legal system on the recent Japanese reforms. While Japanese patent litigation may not be perfect,[96] the United States would certainly do well to investigate the benefits of juryless, specialized district courts in the context of patent protection.

B. *Patent Litigation in Europe*

Filing intellectual property lawsuits in Europe is complex, given no central source exists for the resolution of patent disputes.[97] The European Patent Office (EPO) primarily accepts, revokes, and invalidates patents; any infringement cases must be initiated separately in each European country where the alleged infringement takes place.[98] However, the prospect (and expense) of fighting a dozen simultaneous battles is enough to give pause to many patentees, even those with deep pockets, and this strategy makes even less sense considering the first case's decision often has considerable bearing on the same case in other countries around Europe.[99] For these reasons, one common approach is to "test the

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[96] *See* Takenaka, *supra* note 54, at 391–93 (discussing issues such as (1) the negative effect of the IP High Court on certainty as to patent validity, (2) limited damages awarded compared to those of the United States, and (3) the extremely low chance of a Japanese court actually finding infringement). While Takenaka rightfully criticizes these problems, he also concedes "[t]he Japanese government was successful in creating a court system more advanced than its U.S. counterpart in dealing with IP issues." *Id.* at 390.

[97] *See generally* Stuart J.H. Graham & Nicolas Van Zeebroeck, *Comparing Patent Litigation Across Europe: A First Look*, 17 STAN. TECH. L. REV. 655 (2014) (examining the downsides of the fractured European patent system and how European policy makers, recognizing these downsides, are in the process of establishing a unitary patent system for Europe).

[98] *See* European Patent Office, *Facts and Figures 2009*, EPO 8–9, http://documents.epo.org/projects/babylon/eponet.nsf/0/5ba711cb78950ed3c12575b500421775/$FILE/epo_facts_and_figures_2009_en.pdf (describing the EPO's role in granting patent protection in almost forty countries throughout Europe, all with a single application).

[99] *See* Naomi Rovnick, *German Efficiency Shames Patent Court into Rethink*, THE LAWYER 2 (Aug. 19, 2002) ("[I]f they believe their patents have been

waters" by filing a single infringement lawsuit in a country that promises inexpensive proceedings and a quick, definitive outcome.[100]

Germany has emerged as the "most popular European jurisdiction"[101] for patent litigation as it offers experienced specialist judges, streamlined procedures, and comparatively fast decisions—all of which contribute to lower costs. While IP cases in the United Kingdom are usually more expensive than those in Germany, the numbers still pale in comparison to the average expense of taking a patent case through appeal in the United States.[102] In addition to cost, both European countries share important similarities regarding patent litigation, one of which is the use of experienced justices.[103]

Specialized judges with large amounts of experience reign in Europe, whether the legal system is based in civil law (Germany) or common law (England). German patent infringement disputes are heard by judges assigned strictly to handle patent cases, and although these judges may not always have a technical background, they gain experience quickly due to high case volume and the nature of specialization.[104] Likewise, specialized judges have decided patent cases in Britain for decades.[105] Although the UK sees fewer

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infringed they will have to bring a case in every European country. But it is that vital first case that will influence judgments in the rest of Europe.").

[100] One patent lawyer remarked, "[I]f I want an injunction quickly, I'll often go to Germany." *Id*.

[101] German patent courts hear roughly 600 cases a year, whereas during the first six months of 2002, the UK Patent Court "heard just 26 applications or trials." *Id*.

[102] One estimate places the cost of an English patent case at anywhere from $490,000 to $3,365,000, whereas clients would need to spend somewhere between $600,000 and $5,000,000 to fight a patent dispute through appeal in the U.S. *See* Michael Burdon, *The UK: Can a High-cost Country Change its Ways?*, WIPO MAG., Feb. 2010, at 6–8; AIPLA REPORT, *supra* note 39, at 37; *see also* von Meibom & Kreye, *supra* note 91, at 40 (revealing that filing in Germany might only cost $75,000 to $150,000, depending on case complexity).

[103] *See generally* Graham & Zeebroeck, *supra* note 97 (summarizing the similarities between U.K. and German courts).

[104] *See* von Meibom & Kreye, *supra* note 91, at 39.

[105] While the Patents Court was only created in 1977, anyone disputing a patent in England over the past sixty years has likely presented their case in front of a specialized patent judge. *See* Gitter, *supra* note 71, at 183 n.70.

overall patent cases than Germany,[106] all British patent judges have a technical background.[107]

One major difference between the countries arises within their individual court structures. British patent judges belong to one of two specialized patent courts—the Patents Court or the Patents County Court—but both courts utilize identical procedures, share jurisdiction for all patent-related cases, and hear both infringement and validity disputes.[108] Patent litigation in Germany is bifurcated, so judges hear either infringement or validity cases, but not both.[109] Adjudication of infringement cases occurs in special "patent chambers" within the *Landgericht*, the German equivalent of district courts, and these hearings are overseen by judges much closer to generalists in nature.[110] The opposite is true for invalidation decisions, which are brought in a separate court, the *Bundespatentgericht* (hereinafter "German Federal Patent Court"), and presided over by "judges with both legal and technical training".[111] Despite these structural differences, both types of patent disputes are spearheaded by judges experienced with the complexities of patent litigation.[112] Notably, neither Great Britain nor Germany employ juries in patent trials, as introducing lay

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[106] *See supra* note 102 and accompanying text.

[107] Gitter, *supra* note 71, at 185 ("[S]ome of the judges in the English system possess a technical degree, and 'all have technical experience.'").

[108] *See id.* at 182-85.

[109] Katrin Cremers et al., *Patent litigation in Europe*, 44 EUR. J. L. ECON. 1, 5–6 (2017) [hereinafter *Europe*] ("The [Landgericht] have no jurisdiction to decide on the validity of a patent—neither in form of a defense against a patentee's claims for patent infringement nor in form of a (counter-) claim for declaratory judgment of invalidity. This is referred to as bifurcation of infringement and validity proceedings. In both patent and utility model infringement proceedings the infringement court has the discretion to stay the proceedings until parallel revocation proceedings before EPO, DPMA (Deutsches Patent- und Markenamt) and BPatG (Bundespatentgericht) have come to a conclusion.").

[110] *See generally* Katrin Cremers et al., *Invalid but Infringed? An Analysis of the Bifurcated Patent Litigation System*, 131 J. ECON. BEHAV. & ORG. 218, 221 (2016) [hereinafter *Invalid*].

[111] *Id.*

[112] *See id.*

participants into either system would likely undermine the efficiency created by specialization.[113]

Such efficiencies are clear given a comparative analysis of trial costs and lengths. Though England is known as for being an expensive place for patent litigation,[114] a British patent dispute could potentially cost as little as one-quarter to one-half of an equivalent case in the United States.[115] Patent litigation in Germany is even cheaper,[116] and relatively short case lengths make it an extremely attractive venue for those looking to begin defending their patents in Europe.[117] The sheer number of annual cases in German patent courts suggests patent holders appreciate the speed and efficiency of the system.[118]

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[113] *See id.* at 224 n.22 ("A key argument for specialization is that sufficient judicial expertise with the law as well as with technology is crucial for accurate decision-making in patent litigation. (cf. Moore, 2001; Pegram, 2000; Kesan and Ball, 2011). In particular, in order to accurately determine a patent's validity, judges require a sound understanding of the relevant, potentially invalidating, prior art."). *See generally Europe*, *supra* note 109 at 6–7 (discussing the patent system in four litigation systems including Germany and the UK). Juries are experienced neither as lawyers nor in patent litigation, and many lack expertise in even one highly technical field, much less multiple complex areas of study. A quote from the Honorable Paul R. Michel, U.S. Court of Appeals for the Federal Circuit, commenting on how jury trials have stuck around in American patent law despite its roots in English common law: "even England stopped having jury trials in patent cases at the beginning of the last century." Gitter, *supra* note 71, at 184 note 82 (citation omitted).

[114] Alastair J. McCulloch, *Patent Litigation in Europe: The U.K. Returns as a Forum of Choice*, JONESDAY (2006), https://www.jonesday.com/Patent-Litigation-in-Europe-The-UK-Returns-as-a-Forum-of-Choice-05-05-2006/.

[115] *See* Burdon, *supra* note 102 and accompanying text.

[116] *See* von Meibom, *supra* note 91, at 41.

[117] *See* Graham & Zeebroeck, *supra* note 97, at 667 (indicating that German patent trials usually take 12-18 months to see a judgment, whereas UK trials can take 24-36 months)*; see also* von Meibom, *supra* note 91, at 39 (stating that for infringement cases, it can take up to 9-12 months to receive a first instance judgment in Germany and a "hearing on the merits" can take less than a day; an appeal can take 12 to 15 months).

[118] *See* Graham & Zeebroeck, *supra* note 97, at 667 (If patentees were unhappy with the speed, quality or consistency of decisions from the German specialized courts, they would simply take their disputes elsewhere in Europe.).

One unique factor of the German system is, surprisingly, the rare use of expert witnesses.[119] While judges have the capability to appoint a neutral expert as a court aide to understand the important facts of a case, often German patent judges rely solely on their own extensive technical capabilities.[120] Arguably this expertise is closely linked to the nature of the German court system itself. It would be a stretch to suggest generalist district court judges in America could ever match the knowledge and efficiency of specialized German patent judges, but these differences lie primarily in the natural structure of each country's legal system.[121]

In short, the German courts are directed by two major principles: specialization and decentralization, i.e., there are several different types of German courts that handle specific types of cases, and the rulings these courts give tend not to affect German law as a whole.[122] These are derived primarily from Germany's "federal nature" and the "historical development and codification of German law."[123] Civil law lends itself toward specialization because often the code is complicated, requires extensive familiarity, and serves as the primary source of answers for judges.[124] As such, generalist experience becomes less efficient compared to specific knowledge of a particular section of civil code.[125] In Germany, five areas of law—one being intellectual property litigation—are represented by independent courts of non-overlapping jurisdiction, each with

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[119] *See* von Meibom, *supra* note 91, and accompanying text.

[120] Jim Patterson, *Übung Macht den Meister: How US District Courts can Better Adjudicate Patents by Learning from Germany's Specialized Courts*, CASRIP Newsletter 27 (Winter 2000) (https://tinyurl.com/y7gt2ozr).

[121] *See* Sarang Vijay Damle, *Specialize the Judge, Not the Court: A Lesson from the German Constitutional Court*, 91 VA. L. REV. 1267, 1267–68 (2005) (quoting Judge Henry Friendly regarding the complexity of law and the increasing difficulty of maintaining competence as a generalist judge: "[I]t is altogether absurd to expect any single judge to vie with an assemblage of law professors in the gamut of subjects . . . that may come before his court.").

[122] *See generally Invalid*, *supra* note 110.

[123] Damle, *supra* note 121, at 1289–90 n.104 (quoting NIGEL G. FOSTER, GERMAN LEGAL SYSTEM AND LAWS 38 (2d ed. 1996)).

[124] Damle, *supra* note 121, at 1290–91.

[125] *See generally id*.

specialized judges well-versed in their respective legal code.[126] German judges have more direct control over courtroom proceedings than their American counterparts as a result of the inquisitorial system,[127] but the nature of civil law means judicial decisions in Germany technically have no effect on the law itself, unlike in the United States.[128]

Despite these fundamental differences, we need not dismiss the German experience as foreign and unapproachable. As the Japanese have recently shown, it is possible to create legal reforms which respond to the need for increased specialization in a way that still respects the nature of the current system. Perhaps we can ask some difficult questions and reconsider the role of juries and generalist judges in a patent system filled with inefficiencies and power inequalities.[129]

V. CONCLUSION

The United States holds democracy as one of its defining values, and the use of lay juries in its judicial system is a natural manifestation of that value. Yet, there are certain technical topics that the average layperson is not well equipped to handle simply because they have not spent the enormous amount of time required to become an expert in that field. The United States need not hinder

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[126] *Id.* at 1286; *see also* Daniel J. Meador, *Appellate Subject Matter Organization: The German Design from an American Perspective*, 5 HASTINGS INT'L & COMP. L. REV. 27, 31–41 (1981) (summarizing the specific variety of cases handled in each of the five judicial jurisdictions).

[127] Patterson, *supra* note 120, at 27 ("German judges are granted tremendous power to conduct research and actively question witnesses . . . German lawyers watch over the judges' work and make suggestions of pertinent legal theories, but are only slightly involved in fact finding, and are highly discouraged from contacting witnesses before the witnesses have been questioned by judges.").

[128] *Id.* ("German judges are much less active in shaping laws than they are in interpreting them; and previous court decisions are not legally binding on subsequent cases.").

[129] *Id.* ("The US legal community has traditionally received the notion of specialization with skepticism and contempt; but given the severe problems in patent adjudication in the district courts, and the significant costs of patent cases, now may be the time to put aside old prejudices and seek a higher ground.").

itself with tradition when other nations have different and demonstrably more efficient methods of handling patent trials. Specialized patent courts and technically trained judges have led to cheaper, faster patent trials for Japan and several European Union countries, especially Germany and the United Kingdom. The specialized, expert-based patent trial methods utilized by these countries are not incompatible with the United States' legal system; it is perhaps the American public's faith in democracy as a solution to all administrative issues that serves as the greatest obstacle to the implementation of these judicial techniques.

Experts undoubtedly make mistakes and are susceptible to ordinary cognitive biases when forming their judgment. Democracy is in large part a method of sparing us from abuses of power. Democracy that ignores knowledge acquired from intense training and extensive experience in the relevant field of study denies itself the fruits of specialization.