

TEXAS INTELLECTUAL PROPERTY LAW JOURNAL

INTELLECTUAL PROPERTY LAW SECTION OF THE STATE BAR OF TEXAS
THE UNIVERSITY OF TEXAS SCHOOL OF LAW

FOREWORD: WORKING WITH LIMITS

John Golden

GATEKEEPING TRENDS IN REASONABLE ROYALTY CASES

Drew Amerson

*BUYING MONOPOLY: ANTITRUST LIMITS ON DAMAGES
FOR EXTERNALLY ACQUIRED PATENTS*

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PATENT DAMAGES WITHOUT BORDERS

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ESTABLISHED PATENT PRINCIPLES*

Sue Ann Ganske

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Foreword:

Patent Damages: Working With Limits

John Golden*

Abstract

Debates over patent damages have frequently lain at the center of patent reform activity. These debates often point to fundamental questions about the nature of the patent system's aims as well as to the quality of the system's performance in pursuit of those aims. They both demand attention to fine points of procedure and call for imaginative ways of improving on existing forms of adjudication. This foreword highlights aspects of twelve articles prepared for publication in three symposium issues of the *Review of Litigation* and the *Texas Intellectual Property Law Journal*. Although these articles cover disparate ground using a variety of approaches, the articles feature a set of recurring themes: possibilities for procedural innovation and for greater reliance on heuristics or on new or oft neglected forms of evidence; the utility of other areas of law in suggesting how patent law might pursue its aims; and the desirability of coherence and evenhandedness in how the patent system operates. Although the symposium articles cannot be expected to bring exploration of these themes to a close, the articles succeed in deepening and advancing current conversations.

* Professor, University of Texas School of Law. The writing of this foreword and the articles for the symposium were supported by honoraria from the University of Texas School of Law. These honoraria were made possible by a gift to the law school from Intel Corporation to support conferences on patent damages.

Since the start of the twenty-first century, the United States patent system has been under intense scrutiny.¹ Prominent representatives of whole industry sectors, including business leaders in information and communications technology, have clamored that the system is in many ways impeding innovation, rather than promoting it.² The resulting drumbeat for reform has yielded steady results but also much turbulence. The Supreme Court has repeatedly overturned holdings or policies of the Court of Appeals for the Federal Circuit or the Patent and Trademark Office (PTO).³ Congress has rewritten substantial portions of the Patent Act and has added whole new forms of administrative proceedings.⁴ The Federal Circuit itself has revisited and rethought various aspects of precedent or accepted practice.⁵

Debates over patent damages, especially damages according to a reasonable royalty measure, have frequently lain at the center of this storm.⁶ As indicated by the symposium articles described below, such damages debates broach fundamental questions about the patent system's aims, the proper extent of the system's reach, and the best means for improving system performance. On a practical level, patent

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- ¹ See John M. Golden, *Proliferating Patents and Patent Law's "Cost Disease"*, 51 HOUS. L. REV. 455, 457 (2013) ("Since at least 1999, the exact words 'The patent system is in crisis' have appeared so often in academic literature that they might be considered a meme.").
- ² See John M. Golden, *Principles for Patent Remedies*, 88 TEX. L. REV. 505, 507 (2010) ("Perhaps most saliently, information-technology incumbents such as Microsoft Corporation and Intel Corporation have pushed strongly for rules to limit the reasonable-royalty damages available to nonincumbent patent holders False").
- ³ See, e.g., *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1935 (2016) (rejecting test for enhancement of patent damages adopted by the Federal Circuit); *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2118 (2013) (holding merely isolated DNA ineligible for patent protection despite longstanding PTO issuance of patents on such subject matter); *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 393-94 (2006) (rejecting the Federal Circuit's "general rule . . . that a permanent injunction will issue once infringement and validity have been adjudged" (internal quotation marks omitted)).
- ⁴ Recent Legislation, *Patent Law—Patentable Subject Matter—Leahy-Smith America Invents Act Revises U.S. Patent Law Regime*, 125 HARV. L. REV. 1290, 1290 (2012) (noting that the 2011 Leahy-Smith America Invents Act (AIA) newly instituted "a first-inventor-to-file priority standard, opportunities to challenge patents through administrative proceedings, and new budgetary flexibility for the PTO"); David W. Trilling, Recent Development, *Recognizing a Need for Reform: The Leahy-Smith America Invents Act of 2011*, 2012 U. ILL. J.L. TECH. & POL'Y 239, 241 (describing the AIA as "mark[ing] the beginning of a new era for patent law").
- ⁵ See, e.g., *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015) (en banc in relevant part) (overruling precedent "establish[ing] a heightened bar to overcoming the presumption that a [patent claim] limitation expressed in functional language without using the word 'means' is not subject to § 112, para. 6" of the Patent Act); *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1315 (Fed. Cir. 2011) (holding evidence based on a long used "25 percent rule of thumb" for the presumptive starting point over a royalty rate to be inadmissible for purposes of proving a reasonable royalty); *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337, 1344-46 (Fed. Cir. 2004) (en banc) (overruling precedent holding that refusal to produce an opinion of counsel or "failure to obtain an exculpatory opinion of counsel" on issues relating to potential patent infringement justify "an adverse inference" about what such an opinion says or would have said), *overruled in irrelevant part by In re Seagate*, 497 F.3d 1360 (Fed. Cir. 2007), *overruled in irrelevant part by Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016).
- ⁶ Golden, *supra* note 2, at 507 (noting the role of "information-technology incumbents" in advocating limitations on reasonable royalty damages).

damages debates demand attention to sometimes fine points of procedure and call for imaginative ways of improving adjudication.

In many ways, the fierceness and persistence of debates relating to patent damages is predictable. Relevant points of tension reflect the often uncomfortably restrictive limits against which the patent system naturally strains. These limits include (1) limits to theoretical agreement on substantive goals and implementing methodologies; (2) limits to the information available to apply theory correctly even if theoretical agreement is assumed; (3) limits to the abilities of courts and other decision-makers to assess liability or monetary awards properly based on whatever facts and theories apply; and (4) limits on the territorial and subject-matter reach of patent law that can lead to questionable gaps in coverage or discontinuities in results.

To advance conversations about how to proceed in the face of such limits, the University of Texas School of Law hosted a conference on patent damages (“PatDam1”) in June of 2016.⁷ A gift to the School of Law from Intel Corporation supported the conference as well as the offering of honoraria to authors of conference papers. At the same time, control over agenda and speakers for the conference was left wholly within the law school’s discretion. The conference featured three separate panels of trial judges, damages experts, and in-house counsel. The conference also featured sessions for the discussion of draft papers to be published as articles in three separate issues of *The Review of Litigation* and the *Texas Intellectual Property Law Journal*. The journal issue in which this Foreword appears presents four of those articles.

The twelve articles prepared in association with PatDam1 address a variety of issues related to patent damages via a mix of scholarly approaches. Through a series of one-paragraph descriptions, this Foreword highlights aspects of the individual papers. The Foreword concludes with a brief discussion of common threads.

In *Patent Damages Heuristics*,⁸ Thomas Cotter argues for addressing the limited fact-finding and decision-making capacities of courts by having them make more conscious and thoughtful use of heuristics—i.e., “shortcuts or ‘rules of thumb’ for reducing the time and effort needed to reach a solution or decision.”⁹ Cotter starts with the proposition that policymakers should use a “proposed heuristic when the sum of the administrative and error costs associated with its use is lower than the sum of the administrative and error costs resulting from” any competing alternative.¹⁰ Cotter then discusses how to weigh error costs versus administrability

⁷ Using funds donated by the Intel Corporation, the University of Texas School of Law also hosted a second conference on patent damages (“PatDam2”) in February of 2017.

⁸ Thomas F. Cotter, *Patent Damages Heuristics*, 25 TEX. INTEL. PROP. L.J. (forthcoming 2017).

⁹ *Id.*

¹⁰ *Id.*

savings in selecting appropriate heuristics.¹¹ He also develops a taxonomy for different types of heuristics in assessing patent damages, including heuristics for determining patentee eligibility for a particular form of damages, for providing a more readily calculated proxy for the amount of damages to which a patentee is theoretically entitled, and for informing more granular aspects of calculational methodology.¹² Finally, Cotter discusses the role of heuristics of various forms in past and present case law and suggests paths by which courts can improve their use, including through deployment of better heuristics for employing evidence of royalty rates from allegedly comparable licenses.¹³

In *Gatekeeping Trends in Reasonable Royalty Cases*,¹⁴ Andrew Amerson chronicles recent doctrinal developments in the case law on reasonable royalties¹⁵ and provides a descriptive empirical study of *Daubert* motions challenging proffered expert testimony on patent damages.¹⁶ Invoking concerns with predictability, efficiency, and effective judicial gatekeeping, Amerson suggests the desirability of simplifying the assessment of reasonable royalties, whether through use of one or more heuristics or through courts' commitment to a "baseball arbitration" approach in which the court will invariably use one or another of the parties' proposed reasonable royalty figures, rather than some value of the court's devising.¹⁷ A hope is that a baseball arbitration approach would moderate party positions by encouraging parties to compete to present more reasonable figures than their opponents, rather than to compete to anchor the court's decision-making on a very high or low value from which a compromise might be derived.¹⁸

In *How Patent Damages Skew Licensing Markets*,¹⁹ Erik Hovenkamp and Jonathan Masur focus specifically on the problem of using allegedly comparable licenses for purposes of assessing reasonable royalty damages.²⁰ They argue that reliance on past licenses to set reasonable royalty damages has problematic effects that include distortion of private incentives in licensing and the promotion of secrecy and obfuscation in contract design.²¹ Specifically, courts' use of such patent licenses can generate deadweight loss by encouraging patentees to maintain uniformly high royalty rates in light of possible reference to those rates in later

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

¹⁴ Drew Amerson, *Gatekeeping Trends in Reasonable Royalty Cases*, 25 TEX. INTEL. PROP. L.J. 1 (2017).

¹⁵ *Id.*

¹⁶ *Id.* In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), the Supreme Court held that, although "'general acceptance'" of scientific evidence is not required, *id.* at 588-89, "the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable." *Id.* at 589.

¹⁷ *Id.*

¹⁸ *See id.* at 4.

¹⁹ Erik Hovenkamp & Jonathan Masur, *How Patent Damages Skew Licensing Markets*, 36 REV. LITIG. 36 REV. LITIG. 377 (Symposium 2017).

²⁰ *Id.* at 378.

²¹ *Id.* at 379-80.

litigation.²² Hovenkamp and Masur propose that, except perhaps in the context of patents subject to a prior commitment to reasonable and nondiscriminatory licensing, courts should uniformly approach the determination of patent damages as if there were no prior analogous licenses.²³ Hovenkamp and Masur contend that, as long as the results of courts' ad hoc calculations are randomly distributed without systematic bias, there will then be better ex ante incentives for both patent holders and members of society at large.²⁴

Colleen Chien and Eric Schulman provide a different take on the use of past patent licenses in *Patent Semi-Comparables*.²⁵ They argue that the courts' emphasis on using "truly 'comparable licenses'" to determine a reasonable royalty can wrongly lead to neglect or outright rejection of evidence of a patented invention's value that can be gleaned from "'semi-comparable' licenses" that differ substantially from the sort of bare license of a single patented invention that courts commonly envision as the model for a reasonable royalty.²⁶ To put their recommendation in context, Chien and Schulman describe three main categories of circumstances in which patent purchases or licenses can arise: *ex ante* transactions prior to the development or adoption of a new technology, *ex post* transactions to avoid or end litigation, and freedom-to-operate transactions commonly associated with acquiring, licensing, or cross-licensing large patent portfolios.²⁷ In situations in which damages or an "ongoing royalty" rate²⁸ are difficult to estimate, Chien and Schulman suggest that courts might revisit the desirability of appropriately tailored injunctions as a means to provide proportionate protection of patent rights.²⁹

In the *Final Report of the Berkeley Center for Law & Technology Patent Damages Workshop*,³⁰ Stuart Graham, Peter Menell, Carl Shapiro, and Tim Simcoe report on a roundtable-style workshop that the Berkeley Center for Law & Technology, with support from Intel Corporation, hosted on March 3, 2016.³¹ Graham, Menell, Shapiro, and Simcoe summarize points of agreement and disagreement that emerged during the discussions. For example, they report consensus on the points "that the patent holder is entitled to a royalty based on the value contributed by the patented invention"³² and that past licenses are often a

²² *Id.* at 380.

²³ *Id.*, Part. V.

²⁴ *Id.*

²⁵ Colleen Chien & Eric Schulman, *Patent Semi-Comparables*, 25 TEX. INTELL. PROP. L.J. (forthcoming 2017).

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Paice LLC v. Toyota Motor Corp.*, 504 F.3d 1293, 1314 (Fed. Cir. 2007) ("Under some circumstances, awarding an ongoing royalty for patent infringement in lieu of an injunction may be appropriate.")

²⁹ Chien, *supra* note 25.

³⁰ Stuart Graham, Peter Menell, Tim Simcoe & Carl Shapiro, *Preliminary Report of the Berkeley Center for Law & Technology Patent Damages Workshop*, 25 TEX. INTELL. PROP. L.J. 113 (2017).

³¹ *Id.*

³² *Id.* at 124.

problematic way to determine this value.³³ Graham, Menell, Shapiro, and Simcoe suggest a number of potential ways to improve courts' handling of damages claims, including the development of a technical guide for judges on patent valuation; greater use of independent, court-appointed experts; a code of conduct for expert witnesses that could help establish greater independence even for party experts; early exchanges of damages contentions, acceleration of the schedule for damages-related discovery; and earlier consideration of *Daubert* challenges to damages experts.³⁴

In *Rationalizing FRAND Royalties: Can Interpleader Save the Internet of Things?*,³⁵ Jason Bartlett and Jorge Contreras propose another procedural mechanism that courts might use, that of interpleader.³⁶ This procedural device “affords a party who fears being exposed to the vexation of defending multiple claims to a limited fund or property . . . a procedure to settle the controversy and satisfy the obligation in a single proceeding.”³⁷ Bartlett and Contreras contend that courts can helpfully use interpleader to bring together all owners of standard-essential patents (SEPs) in one proceeding in which the portion of an overall royalty attributable to each owner's set of SEPs might be determined.³⁸ Bartlett and Contreras suggest that such use of interpleader could help prevent “royalty stacking” problems in which separately determined royalty rates for subsets of SEPs result in an aggregate royalty rate that is unreasonably large overall.³⁹ Bartlett and Contreras also suggest that interpleader will help lead to less inconsistency between, and more justification for, the relative sizes of rewards achieved by different owners of SEPs associated with the same standard.⁴⁰

In *A Restitution Perspective on Reasonable Royalties*,⁴¹ Karen Sandrik and John Golden, the author of this foreword, look to the law of restitution for instruction on how courts might better approach assessment of reasonable royalty damages. Golden and Sandrik note how the role of reasonable royalty damages as a residual remedy in patent law compares to the role that restitution remedies play in areas of law like contract, in which monetary relief based on a restitution measure may result when there is a failure of proof with respect to expectation damages.⁴² Golden and Sandrik describe how, in order to promote appropriate private bargaining and to deter bad behavior, the Restatement (Third) of Restitution and Unjust Enrichment lays out both a multilayered set of measures for monetary relief

³³ Graham et al, *supra* note 30, at 125.

³⁴ Graham et al, *supra* note 30, at 128.

³⁵ Jason R. Bartlett & Jorge L. Contreras, *Rationalizing FRAND Royalties: Can Interpleader Save the Internet of Things?*, 36 REV. LITIG. 285 (Symposium 2017).

³⁶ *Id.* at 310.

³⁷ 7 CHARLES ALAN WRIGHT ET AL., FEDERAL PRACTICE AND PROCEDURE §1704 (2016).

³⁸ Bartlett & Contreras, *supra* note 35, at 310.

³⁹ *See id.* at 316-17.

⁴⁰ *Id.* at 320.

⁴¹ John M. Golden & Karen E. Sandrik, *A Restitution Perspective on Reasonable Royalties*, 36 REV. LITIG. 335 (Symposium 2017).

⁴² *Id.* at 336.

and corresponding tiers of relative fault or responsibility.⁴³ Golden and Sandrik suggest that, even without straightforward translation of restitution's measures and tiers, patent law might follow restitution in adopting an approach to reasonable royalty damages that incorporates greater sensitivity to relative fault and better advances patent system goals through (1) more context-sensitive allocation of burdens of proof and production, (2) at least partial attention to questions of innovation cost and social value, and (3) deployment of different potential damages measures.⁴⁴

In *Innovation Factors for Reasonable Royalties*,⁴⁵ Ted Sichelman highlights both the potential utility of patent-related costs in reasonable royalty determinations⁴⁶ and, more generally, the possible desirability of a more reliance-oriented damages regime.⁴⁷ Sichelman comes to his proposal on use of cost information from a different direction than that taken by Golden and Sandrik: Sichelman works primarily upward from patent law's aim "to promote innovation,"⁴⁸ rather than laterally from inquiry into what the law of patent damages might learn from another legal area.⁴⁹ Sichelman also does more than merely suggest that cost might be a factor in the damages calculus or perhaps an occasional measure of damages itself. Sichelman contends that courts should jettison perhaps the most widely accepted part of the prevailing *Georgia-Pacific* "test"⁵⁰ for reasonable royalty damages⁵¹—namely, the notion that reasonable royalty damages should equal a royalty to which a willing licensor and willing licensee would have agreed in a hypothetical negotiation occurring before infringement started.⁵² Sichelman argues that courts should instead look more to ensuring "a sufficient return" on the costs of research, development, and commercialization, including the opportunity costs of such investments.⁵³ Sichelman also emphasizes the relevance of technological value in awarding reasonable royalty damages, noting that such value or relative lack thereof can be indicated by whether "there would have been

⁴³ *Id.* at Part II.

⁴⁴ *Id.* at 377.

⁴⁵ Ted Sichelman, *Innovation Factors for Reasonable Royalties*, 25 TEX. INTELL. PROP. L.J. (forthcoming 2017).

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ See *supra* text accompanying notes 41-44.

⁵⁰ A district court opinion in *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), modified in irrelevant part, 446 F.2d 295 (2d Cir. 1971), is often characterized as laying out a "test" for the value of reasonable royalty damages, see, e.g., Daralyn J. Duric & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 LEWIS & CLARK L. REV. 627, 628 (2010) (criticizing "the non-exclusive, fifteen-factor 'Georgia-Pacific' test now taken as the gold standard for calculating reasonable royalty damages"), although the case technically only lists a non-exclusive set of fifteen potentially relevant factors, *id.* at 629.

⁵¹ Sichelman, *supra* note 45; see also David O. Taylor, *Using Reasonable Royalties to Value Patented Technology*, 49 GA. L. REV. 79, 122 (2014) ("It is important to recognize that the last of the fifteen Georgia-Pacific factors, the hypothetical negotiation construct, has, to a large degree, superseded the remainder of the factors in terms of importance.")

⁵² Sichelman, *supra* note 45.

⁵³ *Id.*

viable noninfringing alternatives [to the patented technology] for a substantially lower cost.”⁵⁴

In *Enhanced Damages for Patent Infringement: A Normative Approach*,⁵⁵ Keith Hylton investigates the question of what standard for supra-compensatory patent damages is best designed to advance social welfare.⁵⁶ Under the Patent Act, district courts have discretion to enhance damages “up to three times the amount [of compensatory damages] found or assessed.”⁵⁷ To analyze when courts should enhance damages, Hylton combines bottom-up analysis from the patent system’s interest in promoting innovation with lateral analysis of what patent law might learn from tort. Hylton observes that social interests in generating and preserving innovation incentives for would-be patent holders should be weighed against social benefits from unauthorized use of an invention.⁵⁸ Hylton concludes that, in determining whether to enhance patent damages, courts should consider analogs of many of the factors used to determine whether to enhance damages in tort law—for example, the level of reprehensibility of the wrongdoer’s conduct,⁵⁹ the likelihood that infringing activity will be detected and subjected to patent enforcement,⁶⁰ and the magnitude of social harm inflicted by infringement.⁶¹

In *Buying Monopoly: Antitrust Limits on Damages for Externally Acquired Patents*,⁶² Erik Hovenkamp and Herbert Hovenkamp look to antitrust law not so much for instruction on how patent law might be doctrinally structured as for guidance on the extent to which patent acquisition and enforcement problematically suppress competition.⁶³ In particular, Hovenkamp and Hovenkamp look to antitrust law in proposing the denial of patent damages if (1) the patent in question was “externally acquired”—i.e., did not result from the patent holder’s own research and development efforts—and (2) “the acquisition [of that patent] serves materially to expand or perpetuate the [patent holder’s] dominant position in the relevant technology market.”⁶⁴ Hovenkamp and Hovenkamp distinguish externally acquired patents from patents resulting from internal research efforts on grounds that “[d]eveloping valid patents internally and enforcing them is unilateral conduct” that the Patent Act authorizes and antitrust laws may not prohibit.⁶⁵ They acknowledge the general desirability of alienability of patent rights⁶⁶ but note broad agreement

⁵⁴ *Id.*

⁵⁵ Keith N. Hylton, *Enhanced Damages for Patent Infringement: A Normative Approach*, 36 REV. LITIG. 415 (Symposium 2017).

⁵⁶ *Id.* at 416-17.

⁵⁷ 35 U.S.C. § 284.

⁵⁸ Hylton, *supra* note 57, at 427.

⁵⁹ *Id.* at 430-31.

⁶⁰ *Id.* at 433.

⁶¹ *Id.* at 435-36.

⁶² Erik Hovenkamp & Herbert Hovenkamp, *Buying Monopoly: Antitrust Limits on Damages for Externally Acquired Patents*, 25 TEX. INTELL. PROP. L.J. 38 (2017).

⁶³ *Id.* at 39.

⁶⁴ *Id.* at 40.

⁶⁵ *Id.* at 50.

⁶⁶ *Id.* at 39.

among economists that “relatively competitive markets are more conducive to innovation than monopolized markets.”⁶⁷ Hovenkamp and Hovenkamp observe that courts have previously fashioned rules that limit patents’ effective enforceability⁶⁸ and argue that limiting patent damages could be a more efficient means to advance competition than standard mechanisms for antitrust enforcement.⁶⁹

In *Allocating Patent Litigation Risk Across the Supply Chain*,⁷⁰ Michael Meurer considers situations in which multiple parties—for example, product manufacturers and their customers—are liable for a single course of patent infringement.⁷¹ For such situations, Meurer investigates how damages or risk of damages might be best allocated among parties via indemnification, insurance, and court proceedings.⁷² Most particularly, Meurer investigates the extent to which indemnification agreements, including agreements that cap a party’s liability, affect the parties’ bargaining positions with respect to a relevant patent owner.⁷³ Meurer observes that caps on liability can create conflicts between the interests of contracting parties when they bargain with a patent owner.⁷⁴ On the other hand, liability caps can also generate benefits by potentially making at least one of the parties a harder bargainer.⁷⁵ Meurer suggests that these hard-bargaining benefits might be especially useful when “patent notice works poorly and patent clearance is difficult.”⁷⁶

In *Patent Damages Without Borders*,⁷⁷ Sapna Kumar questions current case law that restricts the availability of monetary relief for U.S. patent infringement when relevant profit-making occurs abroad.⁷⁸ She contends that such case law misapplies the general presumption against extraterritorial reach for U.S. law.⁷⁹ Kumar discusses the justifications for this presumption⁸⁰ and its historical application to not only U.S. patent law but also trademark and copyright law.⁸¹ Kumar concludes that, with respect to extraterritorial damages, U.S. patent law is out of step with other areas of law.⁸² In her view, U.S. courts should be able to

⁶⁷ *Id.* at 42.

⁶⁸ *Id.* at 67.

⁶⁹ *Id.* at 46.

⁷⁰ Michael J. Meurer, *Allocating Patent Litigation Risk Across the Supply Chain*, 25 TEX. INTELL. PROP. L.J. (forthcoming 2017).

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ Sapna Kumar, *Patent Damages Without Borders*, 25 TEX. INTELL. PROP. L.J. 72 (2017).

⁷⁸ *Id.* at 77-78.

⁷⁹ *Id.* at 76.

⁸⁰ *Id.*

⁸¹ *Id.* at 94-97.

⁸² *Id.* at 109.

award extraterritorial damages for domestic patent infringement,⁸³ but they should do so only after appropriately weighing concerns of comity against the U.S. “interest in making victims of domestic patent infringement whole.”⁸⁴ Further, courts should not award extraterritorial damages when their connection to domestic infringement is “too speculative or tenuous.”⁸⁵

These twelve symposium articles cover disparate ground but feature common themes. Authors such as Amerson, Cotter, and Kumar explore how decision-making might be simplified or made more evenhanded and coherent. Amerson, coauthors Bartlett and Contreras, and coauthors Graham, Menell, Shapiro, and Simcoe discuss procedural innovations that might improve aggregate and even individual results. Chien, Sichelman, and coauthors Golden and Sandrik investigate additional factors or evidence that courts might use in assessing reasonable royalties. Meurer and coauthors Hovenkamp and Masur study interactions between court-awarded damages and contractual mechanisms of private ordering. Finally, Hylton, Kumar, coauthors Hovenkamp and Hovenkamp, and coauthors Golden and Sandrik show how other areas of law—tort, copyright, trademark, antitrust, and restitution—can provide direction and insight for the law of patent damages. In short, despite taking widely different approaches to frequently distinct endpoints, the symposium articles feature repeated use of certain tactics to achieve better understanding of how the awarding of patent damages functions and might be improved.

Of course, there are further potential tactics that are missing from this limited set of articles. Just as the patent system must work with limits inevitable in any human-made and human-implemented system of law, so too is the academic enterprise bounded by the limited capacities of its practitioners and the circumstances in which they appear. Thus, this symposium’s articles will not bring an end to patent damages debates. Nonetheless, these embodied applications of the legal thinker’s toolkit deepen those debates and point out ways to move forward. The symposium articles offer a richly rewarding read.

⁸³ *Id.*

⁸⁴ *Id.* at 110.

⁸⁵ *Id.* at 111.

Gatekeeping Trends in Reasonable Royalty Cases

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Five years ago, in Uniloc USA Inc. v. Microsoft Corporation, the Federal Circuit rejected the well-established “25-percent rule of thumb” used to calculate reasonable royalties in patent infringement cases. Viewing that rule of thumb as an arbitrary starting point untethered to the facts of the underlying infringement claim, the Uniloc court found it inconsistent with the standards of acceptable expert testimony established in Daubert v. Merrell Dow Pharmaceuticals, Inc. In a series of decisions since Uniloc, the Federal Circuit has addressed alternative reasonable royalty methodologies, endorsing some while criticizing others. Irrespective of methodology, the Federal Circuit has enforced its gatekeeping role by emphasizing

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that the data utilized in any reasonable royalty analysis must be sufficiently tied to the facts of the case.

This paper reviews the landscape of Federal Circuit decisions over the last five years and describes why they are unlikely to lead to the type of rational certainty that business markets crave and the legal system strives for. The paper also explores the possibility that perhaps there is a better way to incentivize the behavior we wish from the parties by using procedural rules, including the possibility of applying a baseball-style arbitration system to patent litigation to encourage parties to present more “realistic” damage calculations. In that system, the parties each enter a number, and the trier of fact may choose only one of the two numbers offered, not some number in between.

I. Introduction

It is no secret that patent damage calculations have caused considerable heartburn over the last decade, particularly for products that contain large numbers of patented components. Patent cases have included eye-popping damage awards, some of which are reduced substantially on appeal or after trial.¹ The smart phone wars and other epic patent disputes have spilled into the news, becoming highly public battles. Moreover, the possibility of large and outsized damage awards has, at times, created a casino atmosphere in which patent holders are willing to roll the dice in hopes of hitting it big.

The lack of a quick and reliable method of predicting damages dooms parties to the types of wild swings that make a case difficult to resolve before reaching the courthouse steps. At the end of the day, the ability to accurately predict the value of a patent claim is essential for the rational functioning of the patent litigation system.

Uncertainty breeds opportunism, inviting behavior that is less than optimal. Such behavior can be particularly tempting for those whose business model involves mass market patent litigation.² Like venture capitalists or private equity funds, these market players can roll the dice across a large number of cases, gambling that at least one will return the type of massive award that can fuel the entire enterprise. This may be good for the player's bottom line, but it is bad for the patent system. Courts waste time on cases that should have settled early or not been filed at all. Defendants waste money fending off claims of uncertain value, and the entire system becomes bogged down.

Predictability, a value in business, can also be a virtue in litigation. A legal system, however, must temper such predictability with fairness. As an extreme example, imagine a criminal justice system that executes murder defendants no-matter-what. Such a totalitarian system might be predictable, but certainly not fair. There must be a balance struck between fairness and predictability.

How can the legal system foster both fairness and predictability in its evaluation of patent damages? One key aspect of this question revolves around the role of the expert in identifying an appropriate damage number. Experts, and the standards by which they can recommend a damage measure, have been at the center of the struggle to define a workable damages standard in patent law. In particular, over the past five

¹ See, e.g., *Lucent Techs. Inc. v. Gateway, Inc.*, 509 F. Supp. 912 (2007) (vacating a jury award of \$1.52 billion in damages for insufficient evidence to establish the correct royalty base), *aff'd* 543 F.3d 710 (Fed. Cir. 2008) (affirming judgment as a matter of law due to lack of standing to sue over one patent and non-infringement on the second patent, which obviated the need to decide damages issues).

² See, Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 STAN. TECH. L. REV. 1, 23-25 (2012).

years, beginning with *Uniloc v. Microsoft Corp.*, the Federal Circuit has criticized, limited, and flat out rejected several methodologies that had been industry standards.³ Some of these standards, like the so-called 25% rule of thumb, had the virtue of predictability, but ranked low on the scale of fairness and rationality. In the alternative, the Federal Circuit has largely assigned trial courts the role of gatekeeper for evaluating damages methodologies, creating a landscape with few signposts. Although the Circuit has attempted repeatedly in recent years to provide additional clues for the trial courts, the morass remains.

This paper reviews the landscape of Federal Circuit decisions over the last five years and describes why they are unlikely to lead to the type of rational certainty that business markets crave and the legal system strives for. The paper also explores the possibility that perhaps there is a better way to incentivize the behavior we wish from the parties by using procedural rules. The substantive test itself influences a party's choices whether to bring a case and what to assert, but perhaps a procedural rule could further incentivize the behavior desired. With this in mind, the final section explores ways to encourage the parties to choose a damages approach similar to that used in baseball arbitration, in which both parties present a number, and the trier of fact can choose only one or the other, but nothing in between.

The suggestion certainly risks being burned at the stake for heresy. Baseball arbitration rules would disrupt the intricate dance of patent litigation that has become so familiar—and frankly so lucrative for expert fees, attorney's fees, and for the Eastern District of Texas which specializes in patent cases. Nor would they be easy to implement in our judicial system, requiring some finesse, at a minimum. Nevertheless, bringing rationality to the patent system would benefit all.

II. How Courts Determine Patent Damages

The proper starting point for determining damages in a patent infringement lawsuit is Section 284 of the Patent Act, which instructs courts to award “damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention.”⁴ While this statutory language seems perfectly straightforward, its application has caused a great deal of confusion.

There are two general methods for determining damages for patent infringement: (1) the lost profits method, which calculates a patent holder's lost income due to the infringement, and (2) the reasonable royalties approach, in which a reasonable royalty

³ See, e.g., *Uniloc USA Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1315 (Fed. Cir. 2011) (rejecting the well established 25% rule of thumb); *VimnetX Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1332 (Fed. Cir. 2014) (rejecting the Nash Bargaining Solution); *Commonwealth Scientific and Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1301-1305 (Fed. Cir. 2015) (refining the application of the apportionment with the smallest salable patent-practicing unit).

⁴ 35 U.S.C. § 284 (2012).

rate is applied to an appropriate royalty base.⁵ Of the two, it is the calculation of reasonable royalties that has caused so much consternation in recent years. While the focus of this paper is on reasonable royalty analyses in district courts, the interplay between the two forms of damage calculations is important for understanding the full landscape.

As its name suggests, lost profits are simply the profits from sales that the patent holder would have made if the infringer had not interfered.⁶ To prove lost profits, the patent holder must show: (1) demand for the patented product; (2) the absence of acceptable non-infringing substitutes; (3) the patent holder's ability to exploit the additional demand by expanding manufacturing capacity; and (4) the extent of profits the patentee would have made.⁷ Patent holders can prove all these elements only if they are already using and selling the invention in the market.

The reasonable royalty approach comes into play if patent holders cannot prove all the elements of lost profits.⁸ Even if they can prove lost profits, patent holders sometimes opt to try their luck recovering reasonable royalties; or they present damage calculations under both theories simultaneously.⁹ Calculating a reasonable royalty starts with the simple principle that a patent holder should be able to recover a fair share of the sales made by the infringer.¹⁰ Damages are measured by multiplying the infringer's total sales of the infringing product (royalty base) by a reasonable royalty rate (royalty rate).¹¹

Although simple in the abstract, this process, in reality, is mired in confusion. Unlike a lost profits calculation, which aims to capture actual damages, the determination of a reasonable royalty is typically structured in the context of a

⁵ See *Lucent Techs. Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1324 (Fed. Cir. 2009).

⁶ *Id.*

⁷ *Panduit Corp. v. Stahl Bros. Fibre Works Inc.*, 575 F.2d 1152, 1156 (6th Cir. 1978). This is the predominant but not the exclusive framework used by the Federal Circuit to analyze lost profits. See also *Gyromat Corp. v. Champion Spark Plug Co.*, 735 F.2d 549 (Fed. Cir. 1984).

⁸ It is worth noting that non-practicing entities, which are bringing a growing proportion of patent actions, are not eligible for lost profits. As such, they are responsible, in part, for the increase in reasonable royalty cases. See PricewaterhouseCoopers LLC, 2015 Patent Litigation Study: A Change in Patentee Fortunes, 8 (2015), <http://www.pwc.com/us/cn/forensic-services/publications/assets/2015-pwc-patent-litigation-study.pdf>.

⁹ See *id.* at 8 (providing that between 2005-2014, 81 percent of the awards included a reasonable royalty); see also PricewaterhouseCoopers LLC, 2016 Patent Litigation Study: Are We at an Inflection Point?, 6 (2016), <http://www.pwc.com/us/en/forensic-services/publications/assets/2016-pwc-patent-litigation-study.pdf> (stating that between 2006-2015, among patentees that are practicing entities, 61 percent of successful claims received a reasonable royalty only; 21 percent received lost profits only; and, 18 percent received a hybrid award of lost profits and reasonable royalties).

¹⁰ See *Panduit Corp.*, 575 F.2d at 1157-58; 35 U.S.C. § 284 (2012).

¹¹ ROBIN FELDMAN, *RETHINKING PATENT LAW* 85 (2012).

hypothetical negotiation.¹² As such, it rests on a legal fiction.¹³ Nevertheless, this hypothetical approach has become the gold standard in reasonable royalty analyses. Under this fictional approach, a reasonable royalty is the court-determined licensing deal that would have taken place between the parties if the deal had occurred before the patent was infringed.¹⁴

Courts must carry out a tortuous thought experiment in which they try to divine how parties would have acted in the past, without regard for what has actually transpired in the market and between the parties. This exercise is made all the more difficult by the fact that patent negotiation is an extraordinarily complex and unpredictable endeavor when it occurs in real time. Trying to replicate results that would have occurred at some point in the past while shrouded under a veil of ignorance and the fog of time is an activity fraught with uncertainty.¹⁵ Rather than serving as a guidepost to objective and efficient dispute resolution, this hypothetical framework has allowed for uncertain¹⁶ – and sometimes astounding¹⁷ – monetary awards.

Perhaps in response to such unpredictable and outsized awards, the Federal Circuit has increased its scrutiny of the expert testimony used to help establish reasonable royalties. Beginning with *Uniloc v. Microsoft Corp.*, the Federal Circuit has tossed aside several methodologies that had been standard.¹⁸ At the same time, the Federal Circuit has enforced its gatekeeping role by emphasizing that the data

¹² See John C. Jarosz & Michael J. Chapman, *The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog*, 16 STAN. TECH. L. REV. 769, 782 (2013) (“The most important, and lasting, impact of *Georgia-Pacific* . . . has been the elevation of a hypothetical negotiation construct as the primary tool for considering reasonable royalty damages.”).

¹³ See *Panduit Corp.*, 575 F.2d at 1159 (“Created in an effort to ‘compensate’ when profits are not provable, the ‘reasonable royalty’ device conjures a ‘willing’ licensor and licensee, who like Ghosts of Christmas Past, are dimly seen as ‘negotiating’ a ‘license.’”).

¹⁴ *Riles v. Shell Exploration & Prod. Co.*, 298 F.3d 1311 (Fed. Cir. 2002).

¹⁵ FELDMAN, *supra* note 11.

¹⁶ See Jarosz & Chapman, *supra* note 12, at 808 (“The net result is that *Georgia-Pacific*’s hypothetical negotiation approach has been used to support a wide range of reasonable royalty damages.”) (collecting citations supporting the variability of awards).

¹⁷ See, e.g., *Lucent Techs. Inc. v. Gateway, Inc.*, 509 F. Supp. 912 (2007) (vacating a jury award of \$1.52 billion in damages for insufficient evidence to establish the correct royalty base), *aff’d* 543 F.3d 710 (Fed. Cir. 2008) (affirming judgment as a matter of law due to lack of standing to sue over one patent and non-infringement on the second patent, which obviated the need to decide damages issues).

¹⁸ See, e.g., *Uniloc USA Inc. v. Microsoft Corp.*, 632 F.3d 1292 (Fed. Cir. 2011) (rejecting the well established 25% rule of thumb); *VirnetX Inc. v. Cisco Sys. Inc.*, 767 F.3d 1308, 1325 (Fed. Cir. 2014) (rejecting the Nash Bargaining Solution); *Commonwealth Scientific and Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295 (Fed. Cir. 2015) (refining the application of the apportionment with the smallest salable patent-practicing unit).

utilized in any reasonable royalty analysis must be sufficiently tied to the facts of the case.¹⁹

Since the *Uniloc* decision, there has been a boom in the number of *Daubert*²⁰ challenges heard by district courts.²¹ Whether in response to the vacuum left by the defunct 25% rule of thumb, or simply fueled by the simultaneous surge of patent infringement cases²², it is clear that *Daubert* motions now play an important role in the patent litigation process.

III. The Role of Daubert in Determining Patent Damages

In *Daubert*, the Supreme Court of the United States uprooted 70 years of precedent, which had held that expert testimony based upon a scientific principle should be admissible only if that principle had gained “general acceptance” in its field.²³ Beginning with *Daubert*, the Court instituted a more flexible analysis to be administered by the trial court. Instead of looking solely at the general acceptance of a scientific principle within its field, the Supreme Court directed lower courts to consider the utility of the evidence more broadly and to “ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.”²⁴ Thus, *Daubert* cloaks trial courts with the role of gatekeeper to determine whether expert testimony “both rests on a reliable foundation and is relevant to the task at hand.”²⁵

The Court enumerated several factors that a trial court may use to determine whether testimony based upon scientific knowledge is sufficiently reliable. These factors, which are not exhaustive, include whether the “theory or technique has been subjected to peer review and publication,” “the known or potential rate of error,” “the existence and maintenance of standards controlling the technique’s operation,” and whether the technique has been generally accepted in the relevant scientific community.²⁶ The Court emphasized that the inquiry was “a flexible one” with “[i]ts

¹⁹ See, e.g., *Summit 6, LLC v. Samsung Electronics Co., Ltd.*, 802 F.3d 1283, 1296 (Fed. Cir. 2015) (“[W]here the methodology is reasonable and its data or evidence are tied to the facts of the case, the gatekeeping role of the court is satisfied and the inquiry on the correctness of the methodology and of the results produced thereunder belongs to the factfinder.”).

²⁰ *Daubert v. Merrell Dow Pharms. Inc.*, 509 U.S. 579 (1993).

²¹ See Joel Lutzker, *Daubert and Damages Experts Post-Uniloc*, Law360 (September 9, 2011), available at: <http://www.law360.com/articles/268150/daubert-and-damages-experts-post-uniloc> (discussing the increased emphasis on *Daubert* challenges after the Federal Circuit’s decision in *Uniloc USA*); see also *infra* Chart 1.

²² See *infra* Chart 2.

²³ *Daubert*, 509 U.S. at 585.

²⁴ *Id.* at 589.

²⁵ *Id.* at 597.

²⁶ *Id.* at 593-94.

overarching subject” being “the scientific validity and thus the evidentiary relevance and reliability—of the principles that underlie a proposed submission.”²⁷

In *Kumho Tire Co. v. Carmichael*, the Supreme Court clarified that a trial court’s gatekeeping obligation extends to all expert testimony, even if based upon experiential or other non-scientific knowledge.²⁸ The Court held that there should be no distinction between scientific knowledge and other knowledge, noting that the judge’s role as gatekeeper can assist the jury in deciphering all varieties of knowledge.²⁹ The Court also reiterated *Daubert’s* flexible approach and granted trial courts “considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable.”³⁰

The holdings in these cases have been adopted in Rule 702 of the Federal Rules of Evidence³¹, which was amended in 2000 to provide:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.³²

The amended Rule 702 codifies several key points from the *Daubert* and *Kumho* holdings.³³ First, it maintains the trial court’s gatekeeping role to ensure that the expert testimony is based on reliable principles and methods. Second, its role extends to all expert evidence, not just scientific evidence. Third, it states that judges both evaluate whether there are some facts or data supporting the expert’s opinion and determine whether the data are “sufficient” to support that opinion. Finally, the amended Rule 702 requires that courts decide whether the basis for the expert’s opinion can be “reliably applied” to the particular case.³⁴

Despite this codification in Rule 702, there remains confusion on the part of trial court judges, who have been given greater flexibility but little guidance on how to apply *Daubert*.³⁵ A national study has shown that trial court judges are not certain which standards should be applied or the relative weight that should be afforded to

²⁷ *Id.* at 594-95.

²⁸ *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147 (1999).

²⁹ *Id.* at 147-48.

³⁰ *Id.* at 152.

³¹ Cassandra H. Welch, *Flexible Standards, Deferential Review: Daubert’s Legacy of Confusion*, 29 HARV. J.L. & PUB. POL’Y 1085 (2006).

³² Fed. R. Evid. 702.

³³ David L. Faigman, *The Daubert Revolution and the Birth of Modernity: Managing Scientific Evidence in the Age of Science*, 46 U.C. DAVIS L. REV. 893, 920 (2013).

³⁴ *Id.*

³⁵ Welch, *supra* note 31, at 1096.

each of those standards.³⁶ The study, which surveyed 400 state court trial judges revealed many discrepancies in their understanding of *Daubert*. In particular, the specter of the old “general acceptance in the field” hung heavily over the decisionmaking. Among judges who were willing to weight the *Daubert* factors by their importance, half were still giving the most weight to the question of whether a principle or methodology was generally accepted in its field. The remaining factors were split nearly evenly. In addition, approximately twenty percent of all the judges responding to the survey admitted to being unsure of how to combine the factors.³⁷

While the 2001 study is now dated, confusion over the correct application of *Daubert* remains. The flexibility afforded by *Daubert* has allowed the Federal Circuit to focus on the requirements of Federal Rule of Evidence 702 regarding the “reliable application” of “sufficient facts or data” in gatekeeping for patent cases. We will discuss in the next section how the Federal Circuit is increasingly emphasizing the importance of tethering case-specific facts to a reasonable methodology when evaluating expert testimony.

IV. The Development of Patent Damage Methodologies at the Federal Circuit: From Georgia-Pacific to Summit 6

With a touch of melodrama, the plight of the patent damages expert can be likened to that of Sisyphus, the figure in Greek mythology who the gods doomed to roll a giant boulder uphill every day and watch it roll back down at the end.³⁸ Instead of pushing a boulder uphill, however, it is the expert’s Sisyphian task to raise a new reasonable royalty methodology into common use over and over again. To succeed, the new theory must first survive a *Daubert* motion. The jury must then adopt the motion, which the trial judge later affirms. If it gets that far, other damages experts might borrow and refine the motion. Ultimately, however, the Federal Circuit is sure to weigh in, threatening to send the boulder tumbling downhill by vacating or remanding the damages award. If the damages expert is lucky, however, the Federal Circuit might spare the methodology, choosing instead to focus on how it is applied to the facts of the case.³⁹

³⁶ *Id.* at 1098-99.

³⁷ *Id.* (citing Sophia I. Gatowski et al., Asking the Gatekeepers: A National Survey of Judges on Judging Expert Evidence in a Post-Daubert World, 25 Law & Hum. Behav. 433 (2001)).

³⁸ Jim Bergman, Speaking in March 28, 2016 Webinar sponsored by the California Bar: “Apportionment in Patent Damages: Daubert Proof Patent Damages Using the CAFC Valuation Methodology – Careful Apportionment Using Facts and Circumstances”

³⁹ *Id.*; see also, *Commonwealth Scientific and Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295 (Fed. Cir. 2015); *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283 (Fed. Cir. 2015); *VirnetX Inc. v. Cisco Sys. Inc.*, 767 F.3d 1308, 1325 (Fed. Cir. 2014); *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201 (Fed. Cir. 2014); *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312 (Fed. Cir. 2012); *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51 (Fed. Cir. 2012); *Whitserve, LLC v. Computer Packages, Inc.*, 694 F.3d 10 (Fed. Cir. 2012); *Uniloc USA, Inc.*

By emphasizing the importance of tethering the methodology to the specific facts of the case, the Federal Circuit has risked untethering the district courts from precedent. By keying in on the facts unique to each case, district courts may unwittingly defer to the expert witnesses who can best exploit those facts of by choosing and applying the most appropriate methodology to support their client's claim. Deferring too greatly to scientific wunderkinds spouting impressive sounding conclusions is dangerous. Scientific expertise alone does not make one a neutral and dependable arbiter of difficult legal dilemmas.⁴⁰ Nevertheless, the Federal Circuit appears to be encouraging fact specific rulings at the expense of generalized defensible logic. This is an example of the Federal Circuit's inclination to rely on ever-finer distinctions at the expense of a coherent logical base, which has been criticized by the Supreme Court.⁴¹

Even if the Sisyphus analogy is a stretch, it remains true that since 2009 the Federal Circuit has vacated several damages awards or reduced them as being unsupported by the evidence.⁴² The remainder of this section will explore some of the most influential reasonable royalty methodologies, as well as the Federal Circuit decisions that address them.

a. *Georgia-Pacific v. U.S. Plywood* (1970)

Of all the reasonable royalty methodologies, only one has withstood the test of time: the *Georgia-Pacific* analysis. Unfortunately, it is the test that provides the least for a judge to hold onto in the middle of the maelstrom. Specifically, in 1970, Judge Tenney of the Southern District of New York issued an opinion in *Georgia-Pacific v. U.S. Plywood*⁴³ that has become the “touchstone of modern reasonable royalty damages analysis.”⁴⁴ In it, Judge Tenney compiled a list of considerations used in other cases he found especially pertinent to the dispute before him. Here is the original formulation of the 15-factor test, which has since become sacrosanct:

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

v. *Microsoft Corp.*, 632 F.3d 1292 (Fed. Cir. 2011); *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860 (Fed. Cir. 2010); *Wordtech Sys., Inc. v. Integrated Network Solutions, Inc.*, 609 F.3d 1308 (Fed. Cir. 2010); *i4i Ltd. P'ship v. Microsoft Corp.*, 589 F.3d 1246 (Fed. Cir. 2009); *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301 (Fed. Cir. 2009).

⁴⁰ See ROBIN FELDMAN, *THE ROLE OF SCIENCE IN LAW* 59-61 (Oxford 2009).

⁴¹ See Robin Feldman, *Coming of Age for the Federal Circuit*, GREEN BAG, Autumn 2014, at 29-30.

⁴² L. Scott Oliver and Dawn Rice Hall, *Patent Infringement Remedies—An Overview and Update* from the 10th Annual Patent Law Institute, PLI Intellectual Property Course Handbook Series, number G-1268 at p. 12 (2016).

⁴³ *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970).

⁴⁴ RICHARD F. CAULEY, *WINNING THE PATENT DAMAGES CASE* 7 (2009).

1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.
2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.
3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.
4. The licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.
5. The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter.
6. The effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or conveyed sales.
7. The duration of the patent and the term of the license.
8. The established profitability of the product made under the patent; its commercial success; and its current popularity.
9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.
10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.
11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.
12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.
13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.
14. The opinion testimony of qualified experts.
15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the

amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention— would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.⁴⁵

Although Judge Tenney thought a complete collection of reasonable royalty factors could be compiled, he did not intend for his list to be exhaustive.⁴⁶ Nevertheless, it has become indispensable; so much so that the Federal Circuit has explicitly recognized that “a ‘reasonable royalty’ rate under section 284 “is calculated with reference to the long list of factors outlined in *Georgia-Pacific*. . . .”⁴⁷

Notwithstanding the affirmation of the Federal Circuit and its widespread adoption, the *Georgia-Pacific* analysis is cumbersome and unwieldy.⁴⁸ “[N]ot all factors are relevant to all cases and courts do not always use the same factors.”⁴⁹ With such variability, the test has been described as involving “more the talents of a conjurer than those of a judge.”⁵⁰ Nowhere is that more apparent than in Factor 15, which teed up the hypothetical negotiation framework that is now synonymous with a reasonable royalty estimate.⁵¹

“The *Georgia-Pacific* test is particularly troubling in the way it has been applied to complex multipart products.”⁵² When a product is made up of many components, the price of the product may reflect not just one patented process or component, but potentially thousands of other patented inventions.⁵³

The price may also reflect unpatented technology included in the product, as well as the value added by the manufacturer in putting everything together and marketing the product. The *Georgia-Pacific* test does not adequately take all of this

⁴⁵ *Georgia-Pac.*, 318 F. Supp. at 1120 (S.D.N.Y. 1970), modified, *sub nom. Georgia-Pac. Corp. v. U.S. Plywood-Champion Papers, Inc.*, 446 F.2d 295 (2d Cir. 1971).

⁴⁶ See Jarosz & Chapman, *supra* note 12, at 781 (describing Tenney’s list as “nonexhaustive” and noting that the factfinder has discretion to weigh each factor on that list).

⁴⁷ *Parental Guide of Texas, Inc. v. Thomson, Inc.*, 446 F.3d 1265, 1270 (Fed. Cir. 2006).

⁴⁸ See Daralyn J. Durie & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 LEWIS & CLARK L. REV. 627, 628 (2010); Jarosz & Chapman, *supra* note 12, at 784-85 (2013).

⁴⁹ Robin Feldman, *Intellectual Property Wrongs*, 18 STAN. J.L. BUS. & FIN. 250, 261 (2013).

⁵⁰ *Fromson v. W. Litho Plate & Supply Co.*, 853 F.2d 1568, 1574 (Fed. Cir. 1988); see also FELDMAN, *supra* note 11, at 85-88 (describing problems with the *Georgia-Pacific* test in the context of bargaining within the patent system).

⁵¹ See Jarosz & Chapman, *supra* note 12, at 782.

⁵² Feldman, *supra* note 49, at 261.

⁵³ Estimates of the number of patents implicated in a contemporary smart phone range from a few hundred to 250,000. See Mike Masnick, *There Are 250,000 Active Patents That Impact Smart Phones; Representing One In Six Active Patents Today*, TECHDIRT (Oct. 18, 2012, 8:28 AM), <https://www.techdirt.com/blog/innovation/articles/20121017/10480520734/there-are-250000-active-patents-that-impact-smartphones-representing-one-six-active-patents-today.shtml>.

into account,⁵⁴ and patented inventions that make a small contribution to an overall product have received damages awards well beyond their contribution to the whole.⁵⁵

Despite its shortcomings, experts must account for the *Georgia-Pacific* factors in their analysis, even when they think another methodology is superior.⁵⁶ Until Congress or the courts decide to simplify or replace this fifteen-factor test, every expert opining on a reasonable royalty rate must acknowledge the rule. Given the broad and multifactorial framework, it is difficult for courts to exercise their gatekeeping function. No matter the factual circumstances of a case, at least one of the *Georgia-Pacific* factors will likely support a claimed reasonable royalty calculation.⁵⁷

b. The 25% Rule of Thumb and *Uniloc v. Microsoft* (2011)

In many ways, the twenty-five percent rule of thumb is the polar opposite of the *Georgia-Pacific* analysis. It is simple to grasp and easy to apply. Unfortunately, it lacks generalizable logic, and it is no longer relevant. Before being cast aside by the Federal Circuit in *Uniloc v. Microsoft*,⁵⁸ however, courts used the twenty-five percent rule of thumb for more than forty years to help value patent licenses. Although primarily used with patents, the rule also applied to copyright, trademark, and trade secret.⁵⁹

The rule calls for an estimate to be made of the licensee's expected profits for the product that embodies the patent at issue. Those profits are divided by the anticipated net sales over the same period to arrive at a profit rate; which, in turn, is multiplied by twenty-five% to identify a running royalty rate.⁶⁰

The theory supporting the twenty-five percent rule of thumb is that the licensor and licensee should share in the profits attributable to the patented technology. The seventy-five– twenty-five% split was chosen as a starting point because it was thought that the licensee should retain a majority of the profits after overcoming substantial development, operational, and commercialization risks.⁶¹ With a baseline

⁵⁴ Feldman, *supra* note 49, at 261. See also FELDMAN, *supra* note 11, at 86

⁵⁵ *Id.*

⁵⁶ See, e.g., Jarosz & Chapman, *supra* note 12, at 810 n.197 (affirming their continued use of the *Georgia-Pacific* hypothetical negotiation construct “until courts and/or Congress no longer allow” its use, while arguing for an improved approach to calculating reasonable royalties).

⁵⁷ Duric & Lemley, *supra* note 48, at 632.

⁵⁸ *Uniloc USA Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1315 (Fed. Cir. 2011).

⁵⁹ Robert Goldscheider, et al, *Use of the 25 Per Cent Rule in Valuing IP*, 37 *les Nouvelles* 123, 123 (2002).

⁶⁰ *Id.* at 124.

⁶¹ *Id.*

established, the split rises or falls by applying the factors outlined in the *Georgia-Pacific* framework.⁶²

In *Uniloc*, the Federal Circuit rejected the twenty-five percent rule of thumb because it was in no way tied to the facts of the case.⁶³ In order to prove damages through a generalized methodology, the patent holder's expert must tie the theory to the facts of the case.⁶⁴ When there is no reason in the factual record to support setting the starting point of a hypothetical negotiation at twenty-five percent, then the rule of thumb could not suffice. This is true even when accounting for the *Georgia-Pacific* factors because, as the Federal Circuit noted, "[b]eginning from a fundamentally flawed premise and adjusting it based on legitimate considerations specific to the facts of the case nevertheless results in a fundamentally flawed conclusion."⁶⁵

If the *Uniloc* decision left any doubt as to whether the twenty-five percent rule of thumb could still be used as a general starting point, the Federal Circuit resolved the issue resoundingly in 2013 when it vacated a reasonable royalty award in *Douglas Dynamics* because the district court had applied the "infamous twenty-five % rule of thumb, which this court held in *Uniloc* was fundamentally flawed."⁶⁶

c. The Entire Market Value Rule

The *Uniloc* decision is notable not only for its rejection of the twenty-five percent rule of thumb; it also refined the Federal Circuit's stance on another method of calculating damages: the entire market value rule. Under the entire market value rule, a patent holder can recover damages based on the value of an entire apparatus containing multiple features, but only when the patented feature constitutes the basis for customer demand.⁶⁷ In *Uniloc*, the Federal Circuit determined that the "Supreme Court and this court's precedents do not allow consideration of the entire market value of accused products for minor patent improvements simply by asserting a low enough royalty rate."⁶⁸ To safeguard against this potential manipulation, the Federal Circuit allowed the entire market value rule to be invoked only when the patented technology creates the basis for customer demand.⁶⁹ Unfortunately, the entire market value rule has proven difficult to implement in products in which many patents may be implicated. For example, it is hard to believe that any single one of the several

⁶² *Uniloc*, 632 F.3d at 1317.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Douglas Dynamics, LLC v. Buyers Prods. Co.*, 717 F.3d 1336 (Fed. Cir. 2013).

⁶⁷ *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1336 (Fed. Cir. 2009)

⁶⁸ *Uniloc*, 632 F.3d at 1320.

⁶⁹ *See id.* at 1317.

hundred thousand patented components that are part of a smart phone is really responsible for customer demand.

Closely related to the entire market value rule is the concept of apportionment, in which a patent holder must apportion royalties between patented and unpatented features. In *Uniloc*, the Federal Circuit emphasized proper apportionment as being critical to the selection of appropriate royalties. Support of such apportionment must be reliable and tangible, rather than conjectural or speculative.⁷⁰ In practice, this is extremely difficult to show, especially when the multiple components in a product complement one another, creating synergistic value greater than the sum of each part.

d. *Laser Dynamics v. Quanta Computer* (2012) and the Smallest Salable Patent Practicing Unit

In *Laser Dynamics v. Quanta Computer*,⁷¹ the Federal Circuit tightened its concept of apportionment by adopting the Smallest Salable Patent-Practicing Unit doctrine, which seeks to identify the most discrete, individually salable component of a product that reflects the patent.⁷² That component sets the revenue base when determining reasonable royalties. This formulation was first advanced in a decision in the Northern District of New York, *Cornell Univ. v. Hewlett-Packard*.⁷³

Although *Cornell* was a district court case, the former Chief Judge Rader of the Federal Circuit, sitting by designation, wrote the opinion.⁷⁴ Ruling on a post-trial motion, Chief Judge Rader reduced a damages award from \$184 million to \$53 million by “correcting” the royalty base to reflect the value of Hewlett-Packard’s processors, rather than the higher value that formed the central processing unit brick revenue base.⁷⁵ This change was made because the processors, rather than the bricks, were the smallest salable patent-practicing units.

The Federal Circuit’s *Laser Dynamics* case followed the same theme. The jury awarded damages based on a royalty base formed by the sales of an entire computer, rather than sales of the optical disk drive, which the Federal Circuit recognized as the patent practicing component.⁷⁶ In vacating the jury’s award, the Federal Circuit clarified that the principle of apportionment required the use of the “smallest saleable unit” incorporating the patented feature as a royalty base.⁷⁷ The Federal Circuit held

⁷⁰ *Id.* at 1318 (quoting *Garretson v. Clark*, 111 U.S. 120, 121 (1884)).

⁷¹ *Laser Dynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51 (Fed. Cir. 2012).

⁷² *Laser Dynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2012).

⁷³ *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 287 (N.D.N.Y. 2009).

⁷⁴ *Id.* at 282.

⁷⁵ *Id.* at 291-93.

⁷⁶ *Laser Dynamics*, 694 F.3d at 60, 61, 63, 68.

⁷⁷ *Id.* at 67-68.

that it is “generally required that royalties be based not on the entire product, but instead on the ‘smallest salable patent-practicing-unit.’”⁷⁸

After *Laser Dynamics*, it is still possible to determine damages based on the sales of the entire product when the patented feature drives consumer demand for the whole product. This is a narrow exception, however, since it is difficult to prove that consumer demand of any multi-component product is due to a single patented feature.⁷⁹

e. *VirnetX v. Cisco Systems* (2014) and the Nash Bargaining Solution

Two years later, in 2014, the Federal Circuit tightened its scrutiny of apportionment methodologies even further beyond the concept of the smallest salable patent-practicing unit. In the case of *VirnetX Inc. v. Cisco Systems Inc.*, the jury had awarded damages based on the total sales receipts from all relevant Apple devices, despite the fact the patents at issue related to only one aspect of Apple’s FaceTime software program.⁸⁰ In vacating the jury’s damage award, the court rejected the theory that “when the smallest salable unit is used as the royalty base, there is necessarily no further constraint on the selection of the base.”⁸¹ Instead, “[w]here the smallest salable unit is, in fact, a multi-component product containing several non-infringing features with no relation to the patented feature . . . the patentee must do more to estimate what portion of the value of that product is attributable to the patented technology.”⁸²

In addition to further refining the smallest salable unit definition, the *VirnetX* decision also criticized another formula that juries employed to calculate a damages value: the Nash bargaining solution. The Nash bargaining solution is premised on the notion that bargaining parties will seek to “jointly maximize the product of the surpluses generated by a successful bargain.”⁸³ In other words, rational bargaining partners will try to evenly maximize the net payoffs to each side, and, will therefore divide down the middle the total surplus gains from their deal.⁸⁴

The Nash bargaining solution can be an interesting academic thought exercise. Given that a hypothetical negotiation framework lacks much grounding in reality anyway, one could imagine an argument that Nash is as good as anything else. The Federal Circuit disagreed, however, finding that the fifty-fifty split of the bargained surplus proposed by the Nash bargaining solution was just as arbitrary as the twenty-

⁷⁸ *Id.* at 67 (quoting *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 287-88 (N.D.N.Y. 2009)).

⁷⁹ *Id.*

⁸⁰ *VirnetX Inc. v. Cisco Systems Inc.*, 767 F.3d 1308, 1325 (Fed. Cir. 2014).

⁸¹ *Id.* at 1327, 1334.

⁸² *Id.*

⁸³ See J. Gregory Sidak, *Bargaining Power and Patent Damages*, 19 Stan. Tech. L. Rev. 1, 7 (2015) (citing John Nash, *The Bargaining Problem*, 18 ECONOMETRICA 155, 159 (1950)).

⁸⁴ *Id.*

five percent rule of thumb rejected in *Uniloc*.⁸⁵ In doing so, the Federal Circuit may have signaled its interest in finding an analytic framework beyond the realm of the pure hypothetical and grounded in some form of reality more directly related to the case.

The *VirnetX* case must be understood in the context of continued battles between the Federal Circuit and the Supreme Court over patent doctrines. In particular, the Supreme Court in a quartet of cases repeatedly, and sometimes pointedly, rejected the Federal Circuit's attempts to conjure up bright-line rules in the realm of patentable subject matter.⁸⁶ The Supreme Court decided the fourth case in the quartet, *Alice v. CLS Bank*,⁸⁷ in June of 2014, and the Federal Circuit handed down its decision in *VirnetX* three months later.⁸⁸ Thus, *VirnetX* may have reflected the Federal Circuit's attempt to avoid another drubbing by the Justices and to prove its loyalty to finding rationality in its rulemaking.

Commentators disagree over whether the Nash bargaining solution remains a viable methodology for calculating reasonable royalty damages.⁸⁹ At a minimum, however, the Federal Circuit has made it clear that any application of the Nash bargaining solution must "sufficiently establish that the premises of the theorem actually apply to the facts of the case at hand."⁹⁰ Without first demonstrating that the facts of the case satisfy the premises of the Nash bargaining solution, any analysis will be rejected as a theoretical exercise that is useless to the finder of fact.⁹¹

Although the Federal Circuit endorsed the smallest salable unit in *Laser Dynamics* and *VirnetX*, the court later left open a back door method of avoiding smallest salable unit by using license agreements as evidence. In *Ericsson v. D-Link Systems*,⁹² the court ruled that comparable licenses can be used as a basis for calculating reasonable royalty damages, even if those license fees are calculated by

⁸⁵ *VirnetX*, 767 F.3d at 1332.

⁸⁶ For an examination of the struggles between the Federal Circuit and the Supreme Court over jurisprudential approaches and the patentable subject matter quartet of cases, see Robin Feldman, *Coming of Age for the Federal Circuit*, 18 GREEN BAG 2D 27 (2014); See also Robin Cooper Feldman, *A Conversation in Judicial Decision-Making*, 5 HASTINGS SCI. & TECH. L.J. 1 (2013).

⁸⁷ See *Alice Corp. v. CLS Bank*, 573 U.S. ___, 134 S.Ct. 2347 (2014) (decided on June 19, 2014).

⁸⁸ *VirnetX*, 767 F.3d at 1332 (decided September 16, 2014).

⁸⁹ Compare Sidak, *supra* note 83, at 6 (arguing that the Federal Circuit's "rejection of the Nash bargaining solution is tantamount to a rejection of the admissibility of any damages calculation based on a theory of bargaining that is mathematically complex, not replicable or falsifiable by the finder of fact, and not sufficiently tied to the facts of the specific case), with Lance Wyatt, *Keeping Up With the Game: The Use of the Nash Bargaining Solution in Patent Infringement Cases*, 31 SANTA CLARA HIGH TECH L.J. 427, 448 (2015) (stating that "because the Federal Circuit did not place an outright bar on the use of the [Nash bargaining solution], it still stands as a reliable method for calculating damages").

⁹⁰ *VirnetX*, 767 F.3d at 1332.

⁹¹ *Id.*

⁹² *Ericsson, Inc. v. D-Link Systems, Inc.*, 773 F.3d 1201 (Fed. Cir. 2014).

the entire value of a product while the technology relates to only one component of a product.⁹³ Pragmatically, the court noted that requiring comparable licenses to be tied to the smallest salable unit “would often make it impossible for a patentee to resort to license-based evidence.”⁹⁴

On the one hand, using evidence of other licenses could have the potential to ground the hypothetical bargaining exercise in some semblance of reality. On the other hand, with the problem of patent trolling, licenses may reflect a company’s calculation of the cost of fighting off an aggressor, resulting in a figure that is largely unrelated to the value of patented item.⁹⁵ Thus, prior licenses may be a poor indication of the valuation a court should capture.

The Federal Circuit also has demonstrated that it is unwilling to fully embrace smallest salable unit—at least not as a sole approach. In the 2015 case of *Commonwealth Scientific v. Cisco Systems*,⁹⁶ the court rejected the notion that all damages models must be based on a single approach, such as the smallest salable unit. In *Commonwealth Scientific*, the defendant argued that the any damage analysis must start with the smallest salable patent-practicing unit.⁹⁷ The Federal Circuit found such a position untenable and reaffirmed that a reasonable royalty rate may be based on comparable licenses, which “are not inadmissible solely because they express the royalty rate as a percentage of total revenues, rather than in terms of the smallest salable unit.”⁹⁸

The court recognized that there are many reliable methods for estimating a reasonable royalty. “This adaptability is necessary because different cases present different facts.”⁹⁹ The Federal Circuit again emphasized the importance of tethering the damages analysis to the facts of the case. Where the data used is not sufficiently tied to the facts of the case, “a damages model cannot meet the substantive statutory requirement of apportionment of royalty damages to the invention’s value.”¹⁰⁰

⁹³ *Ericsson, Inc. v. D-Link Systems, Inc.*, 773 F.3d 1201, 1228 (Fed. Cir. 2014).

⁹⁴ *Id.* at 1228.

⁹⁵ For an empirical analysis of patent trolling, see Robin Feldman, Tom Ewing, & Sara Jeruss, *The America Invents Act 500 Expanded: Effects of Patent Monetization Entities*, 17 UCLA J.L. & TECH. 1 (2013); see also Robin Feldman & Thomas Ewing, *The Giants Among Us*, 2012 STAN. TECH. L. REV. 1 (2012).

⁹⁶ *Commonwealth Scientific and Industrial Research Organization v. Cisco Systems, Inc.*, 809 F.3d 1295 (Fed. Cir. 2015).

⁹⁷ *Id.* at 1303.

⁹⁸ *Id.*

⁹⁹ *Id.* at 1302-03.

¹⁰⁰ *Id.* at 1302 (quoting *Ericsson*, 773 F.3d at 1226).

f. *Summit 6 LLC v. Samsung Electronics* (2015)

*Summit 6 v. Samsung*¹⁰¹ represents the Federal Circuit's most recent dive into the gatekeeping duty of the courts. After a review of *Daubert* and the Federal Rules of Evidence, the court states that "where the methodology is reasonable and its data or evidence are tied to the facts of the case, the gatekeeping role of the court is satisfied and the inquiry on the correctness of the methodology and of the results produced thereunder belongs to the factfinder."¹⁰² The court also acknowledges that estimating a reasonable royalty is an inexact science. "The record may support a range of reasonable royalties, rather than a single value."¹⁰³

Likewise, the Federal Circuit recognizes that there may be more than one reliable method for estimating a reasonable royalty. "A party may use the royalty rate from sufficiently comparable licenses, value the infringed features based upon comparable features in the marketplace, or value the infringed features by comparing the accused product to non-infringing alternatives. A party may also use what this court has referred to as 'the analytical method,' focusing on the infringer's projections of profit for the infringing product."¹⁰⁴ The court views its flexibility on reasonable royalty methodologies as a necessary complement to its requirement that case specific facts be emphasized in any analysis.

In summary, none of the recent guidance from the Federal Circuit is likely to help trial courts find their way through the haze. Smallest salable unit is appropriate, but there are ways around it. Lawyers will battle over which components constitute the smallest salable units while experts use multiple, alternative theories to support their estimated amount of reasonable royalties. Thus, it is entirely predictable that the trial courts will continue to struggle, that experts will be stuck pushing the Sisyphean bolder up the hill, and that the area of law will defy any efforts to discern predicable and reliable doctrines.

V. Trends in District Court *Daubert* Decisions

Having reviewed the Federal Circuit's positions on reasonable royalties in the previous section, I turn now to the front lines of gatekeeping – the district courts. In this section, I will first review the growth of *Daubert* decisions in patent litigation. The past five years have witnessed an explosive increase in the number of *Daubert* decisions issued by judges. This increase cannot be fully accounted for by the slower and steadier growth in patent litigation. I will then survey the *Daubert* decisions that have been issued by district courts between January and May 2016. It is becoming

¹⁰¹ *Summit 6, LLC v. Samsung Electronics Co., Ltd.*, 802 F.3d 1283 (Fed. Cir. 2015).

¹⁰² *Id.* at 1296.

¹⁰³ *Id.* (citing *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1315 (Fed. Cir. 2014)).

¹⁰⁴ *Id.* (citations omitted).

apparent that experts are using more than one methodology to support their calculations of reasonable royalties.

For the purposes of this symposium, I took a brief look at the number of trial court *Daubert* decisions in reasonable royalty cases from January 1, 2008 through December 31, 2015. This is not intended as a detailed quantitative exploration—that would require extensive research into the details of the individual cases—but as a rough look at the contours of the landscape. According to the patent litigation analytics website, Docket Navigator, there were only six *Daubert* decisions issued on challenges to reasonable royalty testimony in 2008.¹⁰⁵ In 2015, the number of *Daubert* decisions had grown to 74, an increase of more than twelvefold. Over the same period, the number of patent cases slightly more than doubled, increasing from 2608 in 2008 to 5767 in 2015.¹⁰⁶ The growth of *Daubert* decisions from 2008 through 2015 was nearly six times greater than the growth of patent cases.

Of course, an increase in *Daubert* decisions does not necessarily indicate an increase in the number of *Daubert* motions filed. If the pace of judicial decision making has changed, that could alter the number of decisions. It could be, for example, that judges used to sit on such motions for some reason and are now able to decide more of them.

There is reason to believe, however, that the number of decisions is reasonably related to the number of motions being filed. Since the Federal Circuit's 2011 ruling in *Uniloc* to end the use of the 25% rule of thumb, it has become more common for litigants on each side of a patent infringement case to file *Daubert* motions attacking expert witness testimony on damages. This is consistent with what those entrenched in the system are reporting anecdotally. In a recent decision from the District of Delaware, Judge Robinson noted that, “[a]s per the normal course of events, both plaintiffs and defendants accuse the opposing experts of basing their economic analyses on inappropriate data.”¹⁰⁷ The comment is particularly telling coming from Judge Robinson. She has been identified as the most active district court judge – by far – in deciding patent litigation disputes between 1996-2015. According to PricewaterhouseCoopers most recent annual study on patent litigation, Judge Robinson has produced more than twice the identified patent litigation decisions of the second most active judge.¹⁰⁸

¹⁰⁵ See <http://docketnavigator.com>; see also Chart 1, *infra*.

¹⁰⁶ See Chart 2, *infra*.

¹⁰⁷ *Amgen Inc. v. Sanofi*, 2016 WL 675576, at *2 (D. Del. Feb. 18, 2016).

¹⁰⁸ See 1111PRICEWATERHOUSECOOPERS, 2016 PATENT LITIGATION STUDY: ARE WE AT AN INFLECTION POINT?171 (2016), available at <http://www.pwc.com/us/en/forensic-services/publications/assets/2016-pwc-patent-litigation-study.pdf>.

To help visualize the trend that Judge Robinson described, I created a chart of federal district court rulings on motions to exclude expert testimony on reasonable royalties from January 1, 2008 through December 31, 2015:

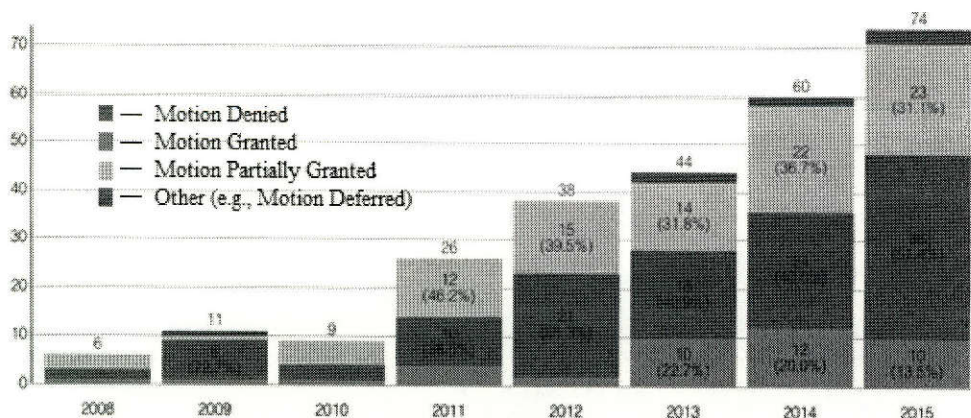


Chart 1 – Daubert Decisions Per Year¹⁰⁹

Uniloc was decided on January 4, 2011. This chart reveals a significant increase in *Daubert* motions filed in 2011 over the number filed in 2010. After the Federal Circuit wiped away the 25% rule of thumb in *Uniloc*, motions in limine seeking to exclude expert testimony on reasonable royalties nearly tripled from 9 in 2010 to 26 in 2011.¹¹⁰

An increase in the number of *Daubert* motions, however, must be examined in the context of number of patent lawsuits filed over the same period. The number of patent lawsuits increased in the same time period as well. Thus, more motions could simply flow from an increase in patent lawsuits.

The data, however, suggest that the number of *Daubert* motions has been rising faster than the number of patent lawsuits in the relevant period. The chart below shows the number of patent lawsuits filed tracked as well as the number of *Daubert* motions filed.¹¹¹

¹⁰⁹ This chart was created using Docket Navigator, <http://docketnavigator.com>.

¹¹⁰ None of the opinions included in the data for 2011 were issued before *Uniloc*.

¹¹¹ See Chart 2 – Daubert Decisions vis-avis Patent Cases Filed

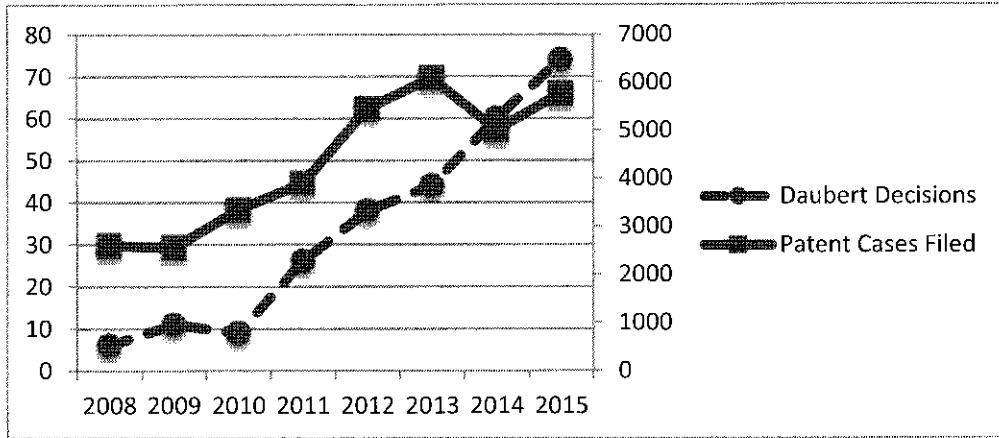


Chart 2 – *Daubert Decisions vis-à-vis Patent Cases Filed*

While the two trend lines track each other pretty closely, an inspection of the data reveals that the ratio of *Daubert* decisions to patent cases has steadily increased each year since *Uniloc*: 0.0027% in 2010; 0.0067% in 2011; 0.0069% in 2012; 0.0072% in 2013; 0.0119% in 2014; and 0.012% in 2015.¹¹² This data shows a shift to more *Daubert* decisions issued per patent cases filed. Regardless of the underlying reason, the increasing frequency of *Daubert* motions indicates points to their increasing prominence in patent litigation.

The bottom line is that—at least at a superficial level—the numbers suggest what is predicted in the paper: recent Federal Circuit decisions have not stemmed the tide or provided the type of resolution that would bring certainty, clarity, and rationality.

Although it is still too early to know whether the trend will continue in 2016, I have reviewed the *Daubert* motions regarding reasonable royalty calculations for the first half of the year. Using the same search terms in Docket Navigator for Chart 1 yields 40 rulings between January 1, 2016 and June 30, 2016.¹¹³ Of these 40 rulings, 26 allowed the challenged testimony while 14 excluded it.¹¹⁴

In nearly all instances, the district courts heeded the Federal Circuit’s emphasis on the application of case specific facts to a reasonable methodology. This is true even for the 14 rulings excluding testimony. Thirteen focused on the disconnect

¹¹² Here are the data points in Chart 2 for each of the following years: 2010 (9 *Daubert* motions to 3351 patent cases); 2011 (26 to 3900); 2012 (38 to 5454); 2013 (44 to 6090); 2014 (60 to 5008); 2015 (74 to 5767).

¹¹³ See Appendix 1. The search, conducted on Docket Navigator as outlined in footnote 93, revealed 21 separate written opinions. Some of these opinions include rulings on multiple expert witnesses or on multiple theories of damages. Taking into account all the rulings, there have been 40 *Daubert* decisions.

¹¹⁴ See *id.*

between methodology and relevant facts.¹¹⁵ In other words, there was nothing inherently wrong with the theories being used; they were simply not tethered to relevant facts for the case.

This 35% exclusion rate is slightly higher than other research has found in the past.¹¹⁶ This could mean that the district courts are exercising their gatekeeping functions with greater scrutiny. But it is worth noting that several of the rulings excluding testimony in our survey were for alternative theories of damages. Meaning, there appear to be more decisions granting in part and denying in part the *Daubert* motions.¹¹⁷ This suggests a trend to parties more often presenting multiple theories of damages.

Here is a chart showing the methodologies of all the reasonable royalty expert testimony challenged in the first half of 2016:

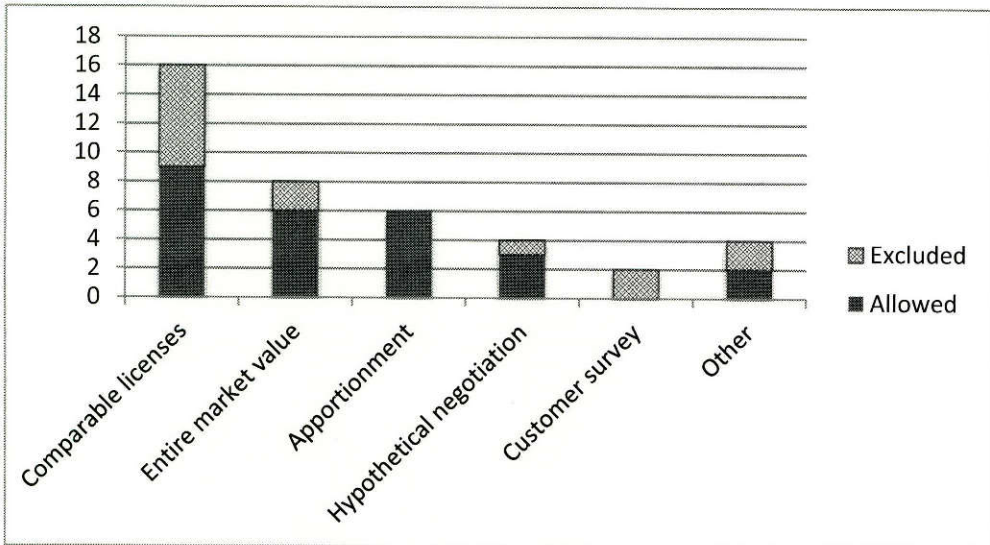


Chart 3 (District Court Daubert decisions in first half of 2016)

As can be seen in Chart 3, the comparable licenses approach has been the most commonly attacked methodology this year. Perhaps not surprisingly, it has also been the most vulnerable, with the testimony excluded in 7 of 16 instances. Most of the

¹¹⁵ See *id.* (In the one instance where the methodology was rejected, it was due to the fact that methodology used was personal experience, which the court found unreliable. See *BMC Software, Inc. v. Servicenow, Inc.*, No. 2:14-CV-903-JRG (E.D. Tex. Feb. 1, 2016)).

¹¹⁶ In a 2010 study, the exclusion rate was 23% when including exclusions in part. Daralyn J. Durie & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 LEWIS & CLARK L. REV. 627, 635 (2010) “Of the 39 cases . . . only 6 excluded the patentee’s expert testimony on reasonable royalty, with another 3 excluding the patentee expert’s testimony in part.”

¹¹⁷ In the 2010 study by Durie and Lemley, only 3 of the 39 decisions were partial. *Id.* In 2016, 7 of 24 opinions have been partial.

excluded testimony involved efforts to use litigation settlements as comparable licenses.¹¹⁸ To the extent such settlements may be allowed in a comparable license approach, the courts require an accounting for the coercive nature of the litigation environment to make the settlements more like licenses negotiated in the business world.¹¹⁹

The entire market value rule has been challenged eight times, resulting in only two exclusions. Typically, these challenges relate to a failure of the expert to use the smallest salable patent-practicing unit. Given the Federal Circuit's recent confirmation that apportionment need not begin with the smallest salable patent-practicing unit, the testimony invoking the entire market value is largely being allowed. This is especially true when the party challenging a failure to identify and apportion the smallest salable patent-practicing unit cannot offer an alternative smallest salable unit.¹²⁰

All six challenges to an expert's method of apportionment were denied, allowing testimony on the subject. As long as the facts being used to apportion are case specific, courts are allowing testimony on apportionment.

The four hypothetical negotiation rulings refer broadly to *Georgia-Pacific* factors. The only testimony excluded was an assumption regarding the length of the hypothetical license period that was not based in facts specific to the case.¹²¹

Of the two customer surveys that were challenged this year, both have been excluded. The rulings indicate that the surveys must relate specifically to the patented technology at issue.¹²²

Finally, the four methodologies captured in the "Other" bar in Chart 3 include the analytical approach (allowed); book of wisdom (allowed); personal experience (excluded); and the top-down approach (excluded).¹²³

VI. Reducing the Range

The Federal Circuit acknowledges that estimating a reasonable royalty is an inexact science. "The record may support a range of reasonable royalties, rather than a single value."¹²⁴ The obvious danger in having a range of acceptable royalty

¹¹⁸ See *infra* at Appendix 1.

¹¹⁹ See *id.*

¹²⁰ See *infra* at Appendix 1; see also, e.g., *ART+COM Innovationpool GmbH v. Google Inc.*, 155 F. Supp. 3d 489, 513-14 (D. Del. 2016).

¹²¹ See *infra* at Appendix 1.; see also *ART+COM Innovationpool GmbH v. Google Inc.*, No. 1:14-217-RGA (D. Del. Apr. 28, 2016).

¹²² See *infra* at Appendix 1; *M2M Solutions, LLC v. Enfora, Inc.*, 167 F. Supp. 3d 665 (D. Del. 2016).

¹²³ See *infra* at Appendix 1.

¹²⁴ *Summit 6.*, 802 F.3d at 1296.

estimates is that it encourages parties to push their calculations to the outer limits. This problem is exacerbated by the proliferation of methodologies available to support damages calculations.¹²⁵ A study of opinions issued since 1978 in which a suggested royalty rate was reported for both the patentee and the accused infringer has shown that the range between the damages calculations can be as great as 300 to 1.¹²⁶ Although that large a spread may be an outlier, the difference is more than 20 to 1 in many cases. And it is not decreasing over time.¹²⁷ The Federal Circuit's two most recent reasonable royalties cases illustrate the typical spread between expert estimates. In *Summit 6 v. Samsung*, the plaintiff's expert estimated the reasonable royalties at \$29 million, while defendant's expert arrived at \$1.5 million. The jury split the difference and awarded \$15 million. In *Commonwealth Scientific v. CISCO*, the experts' estimates totaled \$30.18 million for the plaintiff and \$1.05 million for the defendant. In a bench trial, the court split the difference and awarded \$16.24 million. The remainder of this section will explore what can be done to rein in such enormous ranges.

In *Summit 6*, the Federal Circuit praised the flexibility of its approach in allowing multiple methods of estimating reasonable royalties. But flexibility has its drawbacks. With so many factors and methods of analysis available, the gatekeeping role of the court is severely hindered. District courts exclude just a fraction of the expert testimony that is challenged.¹²⁸ Many courts end up punting the testimony to the jury, rationalizing that any problems with the methodology can be addressed on cross-examination.¹²⁹ But juries are easily swayed by scientific methods. A juror's strength lies in sorting out facts, not in sussing out the relative strengths of competing economic models while simultaneously juggling 15 factors that might or might not have been relevant to a fictional negotiation between the parties in some fanciful past.

Others have offered up a number of theories for simplifying and unifying the calculation of reasonable royalties.¹³⁰ Rather than adding another voice to an already

¹²⁵ Daralyn J. Durie & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 LEWIS & CLARK L. REV. 627, 632 (2010) ("The breadth of the available factors also means that it is difficult to exclude evidence or expert testimony espousing virtually any theory of reasonable royalty damages, no matter how outlandish.")

¹²⁶ See John C. Jarosz & Michael J. Chapman, *The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog*, 16 STAN. TECH. L. REV. 769, 809 (2013).

¹²⁷ See John C. Jarosz & Michael J. Chapman, *The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog*, 16 STAN. TECH. L. REV. 769, 809 (2013).

¹²⁸ See *supra* at Chart 3.

¹²⁹ See *infra* at Appendix 1.

¹³⁰ See, e.g., Daralyn J. Durie & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 LEWIS & CLARK L. REV. 627, 635 (2010); John C. Jarosz & Michael J. Chapman, *The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog*, 16 STAN. TECH. L. REV. 769, 811 (2013); Michael A. Greene, *All Your Base Are Belong to Us: Towards an Appropriate Usage and Definition of the 'Entire Market Value' Rule in Reasonable Royalties Calculations*, 53 B.C. L. REV. 233, 249 (2012); Thomas F. Cotter, *Four Principles for Calculating Reasonable Royalties in Patent Infringement Litigation*, 27 SANTA CLARA COMPUTER AND HIGH

muddled field of potential solutions, I suggest instead that it would be more helpful to settle on a single, simple approach. Regardless of the method selected, it would necessarily be more efficient and predictable than the current mess of methods mapped over the multifactorial *Georgia-Pacific* framework.

To that end, consider what the result would be if the Federal Circuit were to reverse the course it set in *Uniloc* and suddenly established the 25 percent rule of thumb as the starting point for all reasonable royalty analyses. Of course, parties could still adjust their share of the profits according to any and all relevant facts. For instance, if a patentee has comparable licenses that show a 10% royalty rate, that would trump the rule of thumb.

The primary downside to using a simple heuristic like the 25 percent rule of thumb is that we risk inaccuracy due to using an arbitrary starting point. But is that really such a concern when the Federal Circuit already acknowledges that a “range” of reasonable royalties is the best we can do? When the reasonable range – as measured by expert testimony surviving *Daubert* challenges – routinely differs by a factor of 20 between opposing experts¹³¹, it is hard to imagine that a 25 percent rule of thumb would produce estimates that regularly stretched the range even farther apart.

If, however, we were to establish the 25 percent rule of thumb, or any other simple method, as the starting point of a reasonable royalty analysis, then we would gain predictability, efficiency, and cost savings in litigation.

Predictability in litigation processes and outcomes is beneficial. It avoids litigation hold up and allows reliable evaluation of the outcomes. Given a single, common starting point, it is reasonable to believe that parties could more easily gauge their litigation exposure as they would be measuring damages in the same manner as their opponent. With fewer *Daubert* challenges, the average length of litigation would be shortened. Finally, with less need for multiple, complicated economic models, parties could save on their litigation expenses to expert witnesses.¹³² Given all the

TECH L.J. 725, 725 (2011); Christopher B. Seaman, *Reconsidering the Georgia-Pacific Standard for Reasonable Royalty Patent Damages*, 2010 BYU L. REV. 1661, 1661 (2010); Eric E. Bensen & Danielle M. White, *Using Apportionment to Rein in the Georgia-Pacific Factors*, 9 COLUM. SCI. & TECH. L. REV. 1, 1 (2008); Amy L. Landers, *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, 46 SANTA CLARA L. REV. 307, 307 (2006).

¹³¹ See John C. Jarosz & Michael J. Chapman, *The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog*, 16 STAN. TECH. L. REV. 769, 809 (2013).

¹³² Brandon Baum, *Fundamentals of Patent Litigation 2014: Anatomy and Timeline for a District Court Patent Infringement Case*, Practising Law Institute (May 14, 2014)(*accessible at* https://discover.pli.edu/Browse/Title?start=0&rows=50&sort=s_title%20asc&fq=~2B~f_entity_ty pe~3A2822~Transcripts~2229~%2C~2B~f_title_alpha_first~3A282B22~F~2229~%2C~2B~title_ id~3A282B22~55507~2229~&facet=truc&qt=legal_boolean)(stating that damages experts can cost several hundred thousand dollars, and likely over one million dollars for big cases).

advantages to a simplified system, the value added outweighs the cost of reduced accuracy.

There could be other ways to encourage a more rational process and result, outside of the more substantive doctrines related to damage standards. Procedural rules, as well as substantive ones, may provide helpful avenues. In particular, in a paper released in 2012, Robin Feldman suggested that baseball style arbitration could be operate as a reality check for damages calculations from each party.¹³³ Other scholars have elaborated on the idea as well.¹³⁴

In a baseball style arbitration system, which is also known as final-offer arbitration, the parties each enter a number, and the trier of fact may choose only one of the two numbers offered, not some compromise in between.¹³⁵ As a result, parties have less incentive to enter a ridiculous number, given the risk that the trier of fact will ignore it and choose what one's opponent has proposed.¹³⁶

Because it involves a high level of risk, final-offer arbitration incentivizes the parties to negotiate in good faith and to settle before a hearing.¹³⁷ According to most commentators, it also promotes the convergence of the two positions since each side wants to appear reasonable to the arbitrator.¹³⁸ There are a few, however, who argue that “[t]he lack of compromise created by the [final-offer] arbitration systems encourages the players and owners to submit increasingly unreasonable proposals knowing that the arbitration panel cannot compromise but rather must choose one of the two options.”¹³⁹ Tracing this argument to its roots reveals that the claim of

¹³³ See Robin Feldman, *Intellectual Property Wrongs*, 18 STAN. J.L. BUS. & FIN. 250, 262 (2013).

¹³⁴ See Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKLEY TECH L. J. 1135, 1138 (2013); J. Gregory Sidak, *Mandating Final-Offer Arbitration of FRAND Royalties for Standard-Essential Patents*, 18 STAN. TECH. L. REV. 1, 1 (2014).

¹³⁵ See, e.g., Jerry Custis, LITIGATION MANAGEMENT HANDBOOK § 9:18 (2012); Matt

Mullarkey, *For the Love of the Game: A Historical Analysis and Defense of Final Offer Arbitration in Major League Baseball*, 9 VA. SPORTS & ENT. L.J. 234, 238 (2010); John E. Sands, *Baseball Arbitration and the 'Engineering' of Effective Conflict Management*, 13 DISP. RESOL. MAG. No. 3 10, 11 (2007); Ben Einbinder, *What FINRA Can Learn from Major League Baseball*, 12 PEPP. DISP. RESOL. L.J. 333, 340 (2012); Vittorio Vella, *Swing and A Foul Tip: What Major League Baseball Needs to Do to Keep Its Small Market Franchises Alive at the Arbitration Plate*, 16 SETON HALL J. SPORTS & ENT. L. 317, 324 (2006); Thomas J. Hopkins, *Arbitration: A Major League Effect on Players' Salaries*, 2 SETON HALL J. SPORTS & ENT. L. 301, 310-311 (1992); Adam Primm, *Salary Arbitration Induced Settlement in Major League Baseball: The New Trend*, 17 SPORTS L. J. 73, 87 (2010).

¹³⁶ See Feldman, *supra* note 129, at 262.

¹³⁷ Einbinder, *supra* note 131, at 342.

¹³⁸ *Id.* (citing Primm, *supra* note 131, at 88).

¹³⁹ Mullarkey, *supra* note 131, at 239 (citing Vittorio Vella, *Swing and A Foul Tip: What Major League Baseball Needs to Do to Keep Its Small Market Franchises Alive at the Arbitration Plate*, 16 SETON HALL J. SPORTS & ENT. L. 317, 327 (2006)).

unreasonableness on both sides is based on the fact that the players' final offers were 63% of the owners' final offers in 1993.¹⁴⁰

A difference in offers of only 63% would qualify as a huge success in the reasonable royalty damages realm, where the difference is often measured in factors, not percent. As such, this concept of convergence is particularly attractive for resolving conflicting reasonable royalty estimates. Setting aside the difficulties involved in implementing a final-offer system within the courts, the goals of convergence and early settlement are worth pursuing.

VII. Conclusion

From a gatekeeping perspective, the Federal Circuit has become more flexible with respect to the methodologies it allows. At the same time, it is more closely scrutinizing the application of those methodologies to the specific facts of each case. The Federal Circuit has also acknowledged that a calculation of reasonable royalties cannot be exact, falling instead inside a range of reasonableness. Too often, however, the range between the reasonable royalty calculations of each party is too great to be considered reasonable. By simplifying damage calculations and/or forcing a reality check on each side through final-offer arbitration, this range can be reduced, bringing greater predictability to patent litigation.

¹⁴⁰ Vella, *supra* note 135, at 327.

Appendix

Table 1: District Court Daubert Reasonable Royalty Decisions (Jan. 2016 – June 2016)

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGEMENT	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
ART+COM Innovationpool GmbH v. Google Inc., No. 1:14-217-TBD (D. Del. May 16, 2016).	Patentee	Apportionment	<i>Allowed;</i> “[M]ay not be the most accurate apportionment . . . but that goes to the weight and credibility of the evidence.” (p. 6).
GoDaddy.com LLC v. RPost Communications Ltd., No. CV-14-00126-PHX-JAT (D. Ariz. May 10, 2016)	Accused Infringer	Entire market value	<i>Excluded;</i> The testimony contains no evidence that the accused products were the SSPPU, or contained infringing and non-infringing features. The court found the data not sufficiently tied to the facts. “[N]ot a case where . . . ‘shaky’ evidence should be weighed by the jury—the evidence is completely irrelevant to the apportionment inquiry.” (p. 11).
Arctic Cat Inc. v. Bombardier Recreational Products, Inc., No. 14-cv-62369-BLOOM/Valle (S.D. Fla. May 2, 2016)*	Patentee	Book of wisdom	<i>Allowed;</i> Evidence of component cost information after the hypothetical negotiation date is allowed if the technology supporting the components was knowable at the time of the hypothetical negotiation. (pp. 26-27). The parties dispute that point; the court determined the factual dispute should be decided by a jury. (p. 28).

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGER	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
Arctic Cat Inc. v. Bombardier Recreational Products, Inc., No. 14-cv-62369-BLOOM/Valle (S.D. Fla. May 2, 2016)*	Accused Infringer	Comparable licenses	<i>Allowed:</i> License proposal offered 4 years prior to the hypothetical negotiation date was comparable (p.10); court's role is to exclude "speculative, unreliable testimony," not to draw "ultimate conclusions as to the persuasiveness of the proffered evidence." (p. 12).
ART+COM Innovationpool GmbH v. Google Inc., No. 1:14-217-RGA (D. Del. Apr. 28, 2016).*	Accused Infringer	Comparable licenses	<i>Excluded:</i> Of the 7 comparable licenses used by the expert, 5 were pulled from litigation settlements with no accounting for the coercive circumstances surrounding their negotiation (pp. 28-29).
ART+COM Innovationpool GmbH v. Google Inc., No. 1:14-217-RGA (D. Del. Apr. 28, 2016).*	Accused Infringer	Comparable licenses	<i>Allowed:</i> Of the 7 comparable licenses used by the expert, 2 were the result of real-world licensing negotiations and allowed to be used as a 'check' against the reasonable royalty analysis (pp. 29-30).
ART+COM Innovationpool GmbH v. Google Inc., No. 1:14-217-RGA (D. Del. Apr. 28, 2016).*	Patentee	Entire market value	<i>Allowed;</i> The royalty base calculation begins with the total revenue for the Google Geo segment, but there is no clear SSPPU and Google does not offer an alternative starting point; thus no violation of the entire market value rule. (pp. 30-33).
ART+COM Innovationpool GmbH v. Google Inc., No. 1:14-217-RGA (D. Del. Apr. 28, 2016).*	Patentee	Apportionment	<i>Allowed;</i> The royalty rate was supported by Google's own documents reflecting a range of the percentage of revenues attributable to accused infringing product; the selected percentage may not be most accurate but it is tethered to the facts of the case. (pp. 33-34).

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGER	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
ART+COM Innovationpool GmbH v. Google Inc., No. 1:14-217-RGA (D. Del. Apr. 28, 2016).*	Patentee	Hypothetical negotiation	Excluded: The testimony assumed a licensing period of 5.5 years regardless of when each user-activation occurred; thus detached from the facts of the case. (pp. 35-36).
BioMedical Enterprises, Inc. v. Solana Surgical, LLC, No. A-14-CV-0095-LY (W.D. Tex. Apr. 26, 2016)*	Patentee	Entire market value	Allowed: Defendants fault the expert's use of the entire market value of the accused infringing product, but offer no alternatives for SSPPU; further, the expert provides factual support for the patented features driving demand. The court concludes that Defendants' objections go only to weight of the evidence. (pp. 9-11).
BioMedical Enterprises, Inc. v. Solana Surgical, LLC, No. A-14-CV-0095-LY (W.D. Tex. Apr. 26, 2016)*	Patentee	Apportionment	Allowed: Expert relied on Defendants' marketing materials and testimony of their technical expert in setting a royalty rate. Court allowed the testimony because it incorporated facts in the case and articulated a rationale; any weakness in the calculation can be addressed in cross-exam (pp. 11).
Mars Inc. v. TruRX LLC, No. 6:13-cv-526-RWS-KNM (E.D. Tex. Apr. 18, 2016)*	Accused Infringer	Comparable licenses	Excluded: The expert relied on two licenses: the first was irrelevant because it involved neither party in the case; the second was irrelevant because Patentee was the licensor, not licensee, and it did not involve any patent in the instant suit. (pp. 7-9).
Mars Inc. v. TruRX LLC, No. 6:13-cv-526-RWS-KNM (E.D. Tex. Apr. 18, 2016)*	Patentee	Comparable licenses	Excluded: The comparable license was the result of litigation; the expert did not account for the accompanying different economic circumstances. (pp. 10-11).

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGER	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
SRI International, Inc. v. Cisco Systems, Inc., No. 13-1534-SLR (D. Del. Apr. 11, 2016)*	Patentee	Comparable licenses	Excluded: The court excluded all settlement agreements that were a product of litigation. (p. 41).
SRI International, Inc. v. Cisco Systems, Inc., No. 13-1534-SLR (D. Del. Apr. 11, 2016)*	Patentec	Comparable licenses	Allowed: The court allowed all licenses entered into as a product of business negotiations outside the context of litigation. (p. 41).
SRI International, Inc. v. Cisco Systems, Inc., No. 13-1534-SLR (D. Del. Apr. 11, 2016)*	Patentec	Apportionment	Allowed: Cisco challenged the qualifications of the expert to opine on apportionment. The court allowed the testimony and provided that “Cisco is free to challenge the conclusions and analysis . . . on cross-examination.” (p. 41).
Presidio Components, Inc. v. American Technical Ceramics Corp., No. 14-CV-2061-H (BGS) (S.D. Cal. Apr. 4, 2016)	Accused Infringer	Entire market value	Allowed: The court allowed the testimony because it found that there was a factual dispute as to whether the accused products contain unpatented features, which would make the entire market value rule relevant. (pp. 6-7).
Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc., No. 2:14-cv-911-JRG-RSP (E.D. Tex. Mar. 19, 2016)*	Patentee	Hypothetical negotiation	Allowed: LG argued that the expert’s <i>Georgia-Pacific</i> analysis was conclusory. The court held allowed the testimony, finding that the analysis was framed around <i>Georgia-Pacific</i> and the expert considered the applicability of each factor. (pp. 7-8).
Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc., No. 2:14-cv-911-JRG-RSP (E.D. Tex. Mar. 19, 2016)*	Patentec	Entire market value	Allowed: The court allowed the testimony because the expert identified the SSPPU and isolated the fraction of value due to the patented features. (p. 8).

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGER	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc., No. 2:14-cv-911-JRG-RSP (E.D. Tex. Mar. 19, 2016)*	Accused Infringer	Comparable licenses	<i>Allowed:</i> The court found that the expert did not rely on loose or vague comparability. Instead, he explained the economic comparability in detail. (pp. 8-9).
M2M Solutions LLC v. Enfora, Inc., No. 12-32-RGA (D. Del. Mar. 9, 2016)*	Accused Infringer	Comparable licenses	<i>Excluded:</i> The proffered testimony relied on two licenses obtained from litigation settlements. The court excluded the testimony because it “virtually ignored” the drastically different backdrop of litigation. The court also found the discussion of the technological comparability ambiguous. (pp. 18-19).
M2M Solutions LLC v. Enfora, Inc., No. 12-32-RGA (D. Del. Mar. 9, 2016)*	Patentee	Customer survey	<i>Excluded:</i> The court found that the customer surveys relied upon by the expert were unrelated to the patented technology and any allegedly infringing features of the accused products. As such, the testimony was unreliable regarding how many customers used the patented features of the accused products. (pp 20-21 (citing to the same rationale the court used in M2M Solutions LLC v. Motorola Solutions, Inc., No. 12-33-RGA (D. Del. Feb. 25, 2016)).
Metaswitch Networks Ltd. V. Genband US, LLC, No. 2:14-cv-744-JRG-RSP (E.D. Tex. Mar. 7, 2016)*	Patentee	Comparable licenses	<i>Allowed:</i> The court found that the technology licensed under a separate patent pool was technically and economically comparable to the technology at issue to allow it to be used as evidence for a FRAND rate in this case. (p. 4).

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGEMENT	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
Metaswitch Networks Ltd. V. Genband US, LLC, No. 2:14-cv-744-JRG-RSP (E.D. Tex. Mar. 7, 2016)*	Patentee	"Top down" approach	<i>Excluded:</i> The court excluded testimony supporting an alternative FRAND rate, based on an estimate for the minimum number of standard-essential patents. This approach ignored the size of each company that provided disclosures to the IETF standard setting organization, the number of patents in each company's portfolio, and the differences in value between patents. (pp. 4-5).
M2M Solutions LLC v. Motorola Solutions, Inc., No. 12-33-RGA (D. Del. Feb. 25, 2016)*	Patentee	Customer survey	<i>Excluded:</i> Customer surveys relied upon by the expert were unrelated to the patented technology and any allegedly infringing features of the accused products. As such, the testimony was unreliable regarding how many customers used the patented features of the accused products. (pp 4-9).
M2M Solutions LLC v. Motorola Solutions, Inc., No. 12-33-RGA (D. Del. Feb. 25, 2016)*	Accused Infringer	Comparable licenses	<i>Excluded:</i> The expert relied on two worldwide, standard-essential, FRAND patent portfolio licenses. The court excluded the testimony because they were not "economically comparable to a license that the parties would have negotiated for a single asserted patent. (pp. 14-15).
Amgen Inc. v. Sanofi, No. 14-1317-SLR (Consolidated) (D. Del. Feb. 18, 2016)*	Patentee	Comparable licenses	<i>Allowed:</i> With no comparable barc license agreements, Amgen's expert relied on distributor fees as relevant comparables. The court allows the testimony, finding the relevance of the data adequately explained under the <i>Georgia-Pacific</i> factors.

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGER	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
Amgen Inc. v. Sanofi, No. 14-1317-SLR (Consolidated) (D. Del. Feb. 18, 2016)*	Accused Infringer	Comparable licenses	Allowed: With no comparable bare license agreements, Sanofi's expert relied on collaboration agreements and cross-license agreements as relevant comparables. The court allows the testimony, finding the relevance of the data adequately explained under the <i>Georgia-Pacific</i> factors.
Amgen Inc. v. Sanofi, No. 14-1317-SLR (Consolidated) (D. Del. Feb. 18, 2016)*	Accused Infringer	Comparable licenses	Excluded: The court excluded testimony regarding a corporate acquisition and litigation settlement as being too far afield from a bare patent license to be relevant comparables. (p. 5).
HSM Portfolio LLC v. Elpida Memory Inc., No. 11-770-RGA (D. Del. Feb. 11, 2016)	Accused Infringer	Comparable licenses	Allowed: The court allows the use of worldwide licenses to support a US license based on the expert's accounting for the difference. Any criticism to that analysis "can be brought out on cross-examination." (p. 2).
BMC Software, Inc. v. Servicenow, Inc., No. 2:14-CV-903-JRG (E.D. Tex. Feb. 1, 2016)*	Accused Infringer	Personal experience	Excluded: The expert's analysis was based on "direct experience . . . with customer purchase decisions for IT products." The court excluded the testimony because it was not the product of reliable and articulated principles. (pp. 3-4).
BMC Software, Inc. v. Servicenow, Inc., No. 2:14-CV-903-JRG (E.D. Tex. Feb. 1, 2016)*	Patentee	Entire market value	Excluded: The court found that the expert failed to properly apportion out the value of the unpatented features of the accused products. (pp. 6-7).

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGER	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
Imperium IP Holdings (Cayman), Ltd. V. Samsung Electronics Co., No. 4:14-CV-371 (E.D. Tex. Jan. 28, 2016)	Patentee	Apportionment	<i>Allowed:</i> The court found that the expert appropriately apportioned the profits attributable to the accused products between infringing and unpatented features. (p. 3).
Better Mouse Company, LLC v. SteelSeries APS, No. 2:14-cv-198-RSP (E.D. Tex. Jan. 9, 2016)	Patentee	Apportionment	<i>Allowed:</i> The court allowed the testimony, ruling that the expert did not need to start with the SSPPU and that the apportionment method can be addressed on cross-exam. (p. 6).
Better Mouse Company, LLC v. SteelSeries APS, No. 2:14-cv-198-RSP (E.D. Tex. Jan. 9, 2016)	Patentee	Comparable licenses	<i>Allowed:</i> The court allowed the testimony, ruling that the specifics of the expert's method of relying on summaries of comparable licenses can be addressed on cross-exam. (pp. 5-6).
Motio, Inc. v. BSP Software LLC, No. 4:12-CV-647 (E.D. Tex. Jan. 8, 2016)	Patentee	Entire market value	<i>Allowed:</i> Despite the fact that the expert acknowledged that he was assuming, for purposes of his opinion, that the patented technology was the basis for demand, the court allowed the testimony; stating that defendants' challenge was more appropriately suited for the trier of fact. (pp. 5-7).
Exergen v. Kaz USA, No. 1:13-CV-10628-344 (D. Mass. Jan. 7, 2016)	Patentee	Entire market value	<i>Allowed:</i> The court found that defendant impermissibly applied a Section 101 analysis to damages by arguing that an unpatentable law of nature was the primary driving factor in the sales of the accused product.

CASE	WITNESS FOR PATENTEE / ACCUSED INFRINGER	METHODOLOGY AT ISSUE	OUTCOME & RATIONALE
<p>Rensselaer Polytechnic Institute v. Apple Inc., No. 1:13-CV-0633 (DEP) (N.D. N.Y., Jan 6, 2016)</p>	<p>Patentee</p>	<p>Hypothetical negotiation</p>	<p>Allowed: The court determined that Apple was not challenging the expert’s methodology in using the hypothetical negotiation framework, but the underlying assumptions. As such, the court allowed the testimony while noting that Apple will have “fertile ground for vigorous cross-examination.” (pp. 30-36).</p>
<p>Rensselaer Polytechnic Institute v. Apple Inc., No. 1:13-CV-0633 (DEP) (N.D. N.Y., Jan 6, 2016)</p>	<p>Patentee</p>	<p>Analytical approach</p>	<p>Allowed: The court determined that Apple was not challenging the expert’s methodology in using the analytical approach, but the underlying assumptions. As such, the court allowed the testimony while noting that Apple will have “fertile ground for vigorous cross-examination.” (pp. 30-36).</p>
<p>Rensselaer Polytechnic Institute v. Apple Inc., No. 1:13-CV-0633 (DEP) (N.D. N.Y., Jan 6, 2016)</p>	<p>Accused Infringer</p>	<p>Hypothetical negotiation</p>	<p>Allowed: The court allowed testimony regarding a non-infringing design-around as a reliable basis to adjust the reasonable royalty that would have been paid by the accused infringer in a hypothetical negotiation. (pp. 25-27).</p>
<p>*Cases listed more than once indicate multiple <i>Daubert</i> rulings within the same written opinion. These multiple entries account for the testimony of more than one expert and/or separate theories challenged within the testimony of an expert.</p>			

Buying Monopoly: Antitrust Limits on Damages for Externally Acquired Patents

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The “monopoly” authorized by the Patent Act refers to the exclusionary power of individual patents. That is not the same thing as the acquisition of individual patent rights into portfolios that dominate a market, something that the Patent Act never justifies and that the antitrust laws rightfully prohibit.

Most patent assignments are procompetitive and serve to promote the efficient commercialization of patented inventions. However, patent acquisitions may also be used to combine substitute patents from external patentees, giving the acquirer an unearned monopoly position in the relevant technology market. A producer requires only one of the substitutes, but by acquiring the combination it can impede product market rivals by limiting their access to important technological inputs. Similarly, a patent assertion entity (PAE) may acquire substitute patents to eliminate inter-

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licensor competition, enabling it to charge supra-competitive license fees, much like a merger or cartel. For example, by acquiring two or more substitute patents that collectively dominate a market a PAE can effectively monopolize the technology for that market. Such anticompetitive practices are regularly condemned in conventional product contexts, but the courts have not yet applied the same antitrust logic to patent markets. And they passively encourage anticompetitive patent acquisitions by awarding large damages when such patents are infringed.

We propose that infringement damages for an externally acquired patent be denied if the acquisition served materially to expand or perpetuate the plaintiff's dominant position in the relevant technology market. By weakening enforcement, this limits the patent holder's ability to use such acquisitions to anticompetitive ends. We do not suggest that a dominant patent holder should be prohibited from securing external patent rights in the relevant technology market, but simply that its acquisition be limited to a nonexclusive license. This will permit the acquirer to practice the patent and keep its own technology up to date, but will not enable it to restrict third party access. This is as valuable to patent policy as it is to antitrust, for it will tend to increase innovation by discouraging systematic monopoly in technology markets.

I. Introduction

Patent alienability¹ plays an important role in facilitating the efficient commercialization of patented inventions. The firm best suited to commercialize a given patent may not be the original patentee. However, while patent alienability is generally good, it can be abused. For example, virtually everyone agrees that ownership interests in a firm should be alienable, but under certain circumstances the sale of a firm to a competitor may undermine competition and injure consumers. Anticompetitive acquisitions are therefore prohibited by the antitrust laws.² Patent assignments may also be used to anticompetitive ends. In particular, they may be used to aggregate substitute patents from external sources, giving the acquirer an unearned monopoly position in the relevant technology market.³ Patents are “assets” for purposes of the antitrust laws, and thus can be made subject to the Clayton Act’s provision against anticompetitive mergers.⁴ To date, however, no court has applied the antitrust laws to the types of transactions we discuss.

Patent acquisitions by a dominant patent holder⁵ may facilitate two kinds of anticompetitive activity. First, if the acquirer is also a producer, then it may use such acquisitions to impede its product market rivals by restricting their access to important technological inputs. In this case the acquisition is aimed at exclusion in the product market. Second, a non-practicing entity (NPE⁶) may acquire a dominant position in a technology market in order to eliminate competition between licensors, allowing it to charge supra-competitive license fees. Given the limited ability of NPEs to obtain injunctions⁷ the goal is presumably not to prevent someone else from acquiring patent rights, but rather to make them pay an excessive price for the privilege. In this way, it is essentially identical to a traditional anticompetitive merger or cartel agreement.

¹ 35 U.S.C. § 261 (2016) (patents “shall be assignable in law by an instrument in writing”).

² 15 U.S.C. § 18 (2016) (prohibiting acquisitions of “the whole or any part of the stock or other share capital” or “the whole or any part of the assets of” another firm when the result is “substantially to lessen competition, or to tend to create a monopoly”). See generally 4 & 4A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 900 90 (4th ed. 2016) (generally discussing mergers).

³ By “technology market” (or “patent market”) we refer to a market for the rights to technologies performing a particular kind of function, e.g., alternative methods for making solar panels. Thus, as with any market, the “goods” that comprise this market are substitutes, although not necessarily perfect substitutes.

⁴ 5 AREEDA & HOVENKAMP, *supra* note 2, at ¶ 1202f3.

⁵ By “dominant patent holder” we mean a firm which controls the rights to a significant fraction of available technologies performing a particular kind of function, i.e., it has a dominant position in the relevant technology market.

⁶ An NPE is a firm that owns and enforces patents but does not actually produce anything that reads on them. Such firms are alternatively referred to as “patent assertion entities” or, more pejoratively, as “patent trolls.”

⁷ See *infra* note 68 and accompanying text.

We propose that infringement damages for an externally acquired patent should be denied if the acquisition serves materially to expand or perpetuate the plaintiff's dominant position in the relevant technology market. Patent acquisitions are generally addressed under the antitrust laws, although patent law could achieve similar results by making anticompetitive acquisition operate as a defense to an infringement action. By preventing firms from monetizing anticompetitively acquired patents, the law could discourage them from entering into such transactions in the first place. The proposed limits do not prevent a dominant patent holder from obtaining external patent rights in the relevant technology market, but merely prevents it from acquiring more than a nonexclusive license. Nonexclusive licenses permit the dominant firm to acquire all it needs to keep its own technology up to date, but not the right to exclude others.

This proposal limits a firm's ability to use patent assignments to achieve monopoly in technology markets. Without any limitations on patent alienability, firms will tend to allocate patents in whatever way maximizes total profits of all firms in the relevant technology space. This will typically involve allocating patents to achieve monopoly, or at least to make the technology market noncompetitive, because competition erodes profits. This is not the only important benefit, however. Modern economic research on innovation suggests that innovation is maximized when a market is relatively competitive, not monopolized.⁸ This implies that the proposed limits on enforcement would promote innovation, and are therefore as important to patent law's objectives as they are to antitrust law's objectives.

Limiting infringement damages is an effective and convenient way to apply the antitrust laws to anticompetitive patent acquisitions. As we develop later, the costs of such enforcement could also be considerably less than antitrust enforcement, in at least some cases.⁹ Clayton Act enforcement attaches to the acquisition itself, and many NPEs acquire portfolios of thousands of patents, many of which have never been evaluated in an infringement action. Simply determining whether they operate as substitutes could be an extraordinarily expensive undertaking, and probably unnecessary given that many of these patents will never be asserted. By contrast, the infringement action necessarily involves a small subset of patents, and claim construction is necessary in any event. At that time, determining whether the infringement plaintiff has anticompetitively assembled a dominant position in substitute technologies adds relatively little cost. An accused infringer could either assert a defense directly under the Patent Act, or else assert an antitrust counterclaim for monopolization or attempt to monopolize under § 2 of the Sherman Act.¹⁰

⁸ See *infra* Part V.

⁹ See discussion *infra* Part IV.

¹⁰ 15 U.S.C. § 2 (2016).

Under this approach, patents obtained through anticompetitive assignments are essentially rendered benign, because their new owners cannot profitably enforce them. This makes the “shadow of litigation” largely unthreatening to prospective users, and thus the prospect of enforcement cannot be used to exclude rivals or charge supra-competitive license fees.

A. Patents and Antitrust: Common Concerns but Distinct Approaches

Patent enforcement mechanisms are mainly private. Remedies include both damages and private injunctive relief.¹¹ Such actions are essential to patent law’s overall goal of promoting innovation and the efficient commercialization of patented technologies. So they are not “private” at all in the sense that their purpose is simply to transfer wealth from one person to another, or to provide compensation for past harms. Rather, patent damages should give the patentee the correct set of incentives to innovate by deterring infringers. Antitrust damages actions serve a similar purpose within antitrust’s domain.

Nevertheless, private enforcement is even more central to the patent system than to antitrust. Antitrust laws are enforced by a mixture of public and private enforcement actions.¹² Although private plaintiffs file more cases, many of the most important cases, including all criminal cases and virtually all merger cases, are brought by government agencies.¹³ Patent law’s overwhelming private enforcement structure places a premium on identifying and maintaining the appropriate linkage between the goals of patent law and the remedies that shape private enforcement and licensing incentives. A well-designed system for issuing patents with the goal of facilitating innovation and efficient licensing can be undermined by a misguided, remedial system.

Although antitrust and patent law are both concerned with economic welfare and growth, they take different approaches to certain fundamental economic issues, such as market structure and strategic behavior. Antitrust law is highly sensitive to questions about market structure (the organization and competitiveness of markets), firm mobility, and information flow. Antitrust’s “per se” rule, which condemns a set of antitrust practices without significant inquiry into market issues, occupies an ever-shrinking domain within antitrust law.¹⁴ Under the rule of reason that governs most antitrust claims, including those at issue here, questions concerning the structure and

¹¹ 35 U.S.C. § 283 (2016); *id.* § 284 (2016).

¹² 15 U.S.C. § 2 (2016) (permitting criminal sanctions); *id.* § 15 (2016) (permitting private civil suits); *id.* § 15a (2016) (permitting public, federal suits); *id.* § 15c (2016) (permitting *parens patriae* suits); *id.* § 26 (2016) (permitting private injunctive relief).

¹³ Bill Baer, Ass’t Att’y Gen., Antitrust Div., U.S. Dept. of Justice, Remarks Delivered to European Competition Forum: Public and Private Antitrust Enforcement in the United States, at 5, 7, 10 (Feb. 11, 2014) (transcript available at <http://www.justice.gov/atr/public/speeches/303686.pdf>).

¹⁴ See Herbert Hovenkamp, *The Rule of Reason and the Scope of the Patent*, 52 SAN DIEGO L. REV. 515, 516–17 (2015).

operations of markets are decisive.¹⁵ This is true for virtually all joint ventures, single-firm monopolization, vertical restrictions, and mergers. One cannot determine illegality without analyzing the market, the way that firms, products, and information move within it, and how the challenged restraint affects that movement.

In sharp contrast, patent law is largely indifferent to structural issues, almost never asking these questions when adjudicating disputes. Even questions about market structure that are directly related to how innovations are incentivized or disseminated are largely ignored.¹⁶ Indeed, the only reference to market power in the Patent Act is a negative one. Section 271(d)(5) of the Patent Act permits patent tying arrangements except in circumstances where the patentee holds market power in the tying patent or patented product.¹⁷

Patent law also takes little to no account of strategic or “monopolistic” behavior, including such things as dominant firms that exclude rivals by buying up patents in their domain.¹⁸ In other words, patent law largely proceeds as if markets do not matter and is largely indifferent to the question of whether strategic behavior is harmful or beneficial. Indeed, courts often decline even to acknowledge “patent markets”—the medium through which related patents are assigned, licensed, or enforced—as a relevant market for antitrust purposes.¹⁹

Today most economists agree that relatively competitive markets are more conducive to innovation than monopolized markets.²⁰ The relationship between innovation and market structure is commonly characterized as an inverted U, with most innovation done by firms in moderately competitive markets, and less done by either perfect competitors or absolute monopolists²¹ Furthermore, much of the recent empirical work on the subject suggests that this inverted U curve is lopsided toward the

¹⁵ *Id.* at 516; on the relevance of structure in horizontal merger cases, see Herbert Hovenkamp & Carl Shapiro, *Horizontal Mergers, Market Structure, and Burdens of Proof*, YALE L.J. (forthcoming 2018) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3046224).

¹⁶ See Herbert Hovenkamp, *Antitrust and the Patent System: A Reexamination*, 76 OHIO ST. L.J. 467, 503–04 (2015).

¹⁷ See 35 U.S.C. § 271(d)(5) (2016):

No patent owner False . . . shall be deemed guilty of misuse or illegal extension of the patent right by reason of his having False . . . (5) conditioned the license of any rights to the patent or the sale of the patented product or the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.

¹⁸ See *infra* text accompanying notes 89–91.

¹⁹ See, e.g., *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, No. 1:13 cv 00740, 2013 WL 6682981, at *9 (E.D. Va. Dec. 18, 2013) (rejecting the possibility that Intellectual Ventures’ patent portfolio provided a dominant position in a “relevant market”).

²⁰ Philippe Aghion et al., *Competition and Innovation: An Inverted-U Relationship*, 120 Q.J. ECON. 701, 701 (2005); see *infra* text accompanying notes 133–35.

²¹ Herbert Hovenkamp, *Intellectual Property and Competition*, in RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY 2 (Peter Menell et al. eds., 2015), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2569129.

competitive side, at least up to a point, suggesting more innovation as markets are more competitive.²² The curve reflects that both monopoly and perfect competition have problems that undermine innovation: a monopolist has ample means to invest in innovation, but the absence of competition diminishes its incentive to do so.²³ By contrast, a perfectly competitive firm is highly motivated to innovate and thereby distinguish itself from competitors, but it lacks the resources to make significant investments in R&D.²⁴

Unlike patent law, antitrust law attempts to manage competition and innovation issues simultaneously, knowing that they are interlinked and one cannot be controlled without affecting the other. For example, anticompetitive restraints on innovation can be just as unlawful as anticompetitive restraints on product competition—even more to the extent that innovation contributes more to economic growth than does increased competition under constant technology.²⁵ The Government’s Merger Guidelines recognize that mergers should be prohibited if they reduce innovation incentives.²⁶ On the other side, antitrust policy is highly tolerant of true innovation even if it is achieved through monopoly. For example, the courts more or less consistently hold that innovation itself can never be attacked as an antitrust violation, even if it transforms the innovator into a dominant firm.²⁷ Acting under the rule of reason, antitrust law is also highly sensitive to both the significant benefits and competitive threats that can result from collaborative innovation, pooling or other sharing of IP rights, and standard setting.²⁸ In short, built into antitrust is a set of tools that permit courts simultaneously to address the costs and benefits to innovation and competition in specific settings.

Another difference between patent law and antitrust law lies in the way that courts are forced to confront fundamental policy issues. In patent cases, the lower courts apply the statute, but they rarely address directly the question of whether a particular practice promotes innovation. Patent law has no equivalent to the “antitrust

²² *Id.*

²³ Aghion et al., *supra* note 20, at 702.

²⁴ *Id.*

²⁵ *E.g.*, *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 510 (1988) (condemning restraint intended to exclude innovative product from market); *see* Herbert Hovenkamp, *Restraints on Innovation*, 29 *CARDOZO L. REV.* 247, 253-54 (2007).

²⁶ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *HORIZONTAL MERGER GUIDELINES* §§ 6, 6.4, 10 (2010). *See also* Deborah L. Feinstein, Dir., Bureau of Competition, Fed. Trade Comm’n, *Speech at Advanced Antitrust U.S.: The Forward-Looking Nature of Merger Analysis* (Feb. 6, 2014) (transcript available at https://www.ftc.gov/system/files/documents/public_statements/forward-looking-nature-merger-analysis/140206mergeranalysis-dlf.pdf).

²⁷ *E.g.*, *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 998 (9th Cir. 2010).

²⁸ *See generally* 13 HERBERT HOVENKAMP, *ANTITRUST LAW* ¶¶ 2230-35 (3d ed. 2012) (discussing the making and enforcement of industry standards).

injury” doctrine in antitrust law, which is entirely judge made.²⁹ Under that doctrine a court must dig below the surface when assessing a private claim for antitrust damages in order to confirm that the request for damages is consistent with antitrust’s goals.³⁰ Its main message is that even if an alleged harm flows from an antitrust violation, no antitrust damages will be available if the rationale for recovery is inimical to the goals of antitrust policy.³¹

The “antitrust injury” doctrine originated with Justice Thurgood Marshall’s opinion in the *Brunswick* case, which was a private challenge to a merger.³² Brunswick, a large supplier of equipment to bowling allies, operated a program under which it acquired and rehabilitated failing alleys that owed it money.³³ Brunswick purchased one of the two operating bowling alleys in Pueblo Colorado, as well as other alleys in other cities.³⁴ These were vertical mergers because of Brunswick’s supplier relationship with the alleys.³⁵ Some of them were also horizontal mergers to the extent that Brunswick already owned alleys in the area of an acquired alley.³⁶ The district court had found that at least some of the mergers were unlawful and awarded significant damages.³⁷

The private challenger in *Brunswick* was an acquired alley’s rival who claimed that, as a result of the acquisition, Brunswick rehabilitated its languishing competitor, forcing the plaintiff to compete with a much more robust firm than before.³⁸ In sum, whether or not the merger was unlawful, the plaintiff was complaining about more rather than less competition in the market.³⁹ Justice Marshall wrote for the Court that in order to recover the plaintiffs

“must prove more than injury causally linked to an illegal presence in the market. Plaintiffs must prove antitrust injury, which is to say injury of the type the antitrust laws were intended to prevent and that flows from that which makes defendants’ acts unlawful. The injury should reflect the anticompetitive effect either of the violation or of anticompetitive

²⁹ See, e.g., Jonathan M. Jacobson & Tracy Greer, *Twenty-one Years of Antitrust Injury: Down the Alley with Brunswick v. Pueblo Bowl-O-Mat*, 66 ANTITRUST L.J. 273, 273 (1998).

³⁰ See, e.g., *id.* at 281, 285–86.

³¹ See, e.g., *id.*

³² *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 489 (1977).

³³ *Id.* at 479–80.

³⁴ *Id.* at 480.

³⁵ A vertical merger is one between a purchaser and a seller, such as when a manufacturer acquires a dealership or retailer.

³⁶ A horizontal merger is one between competitors.

³⁷ *Treadway Cos. v. Brunswick Corp.*, 364 F. Supp. 316, 318–19 (D.N.J. 1973). The Ninth Circuit vacated the judgment on remedies, but agreed with the district court on the mergers’ illegality. 523 F.2d 262, 273 (3d Cir. 1975).

³⁸ *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 479–81 (1977).

³⁹ *Id.* at 488.

acts made possible by the violation. It should, in short, be “the type of loss that the claimed violations. . . would be likely to cause.”⁴⁰

The *Brunswick* message is that one seeking damages in an antitrust case⁴¹ must show not merely a violation and injury, but also that the injury is consistent with the underlying goals of the antitrust laws to promote competition. This reflects that most antitrust doctrines are directed at protection of consumers, not firms.⁴² Thus, if an alleged antitrust violation injures a rival firm in a way that is unrelated to its potential injury to competition, or if it is not sufficiently clear that consumers are likely to be injured at all, then the rival will generally be precluded from recovering damages.

The antitrust injury doctrine cannot be defended as an exercise in statutory interpretation. Just like the Patent Act damages provision, the antitrust provision is very broad, giving damages to any person injured in his business or property by an antitrust violation.⁴³ Also like the patent damages provision, the antitrust statute makes no mention of principles of equity or other factors that may entitle a judge to reduce or reject damages once the violation and injury have been established. This is in sharp contrast to the injunction provisions in both statutes, which qualify entitlement to relief according to general equitable principles.⁴⁴ For example, acting under the Patent Act provision the Supreme Court held in *eBay* that entitlement to an injunction was not automatic, but must be governed by equitable principles.⁴⁵ In sum, the injunction provisions in both statutes permit judges to “make policy” in deciding whether to grant an injunction by weighing factors that reach beyond the plaintiff’s harm. In both cases the damages provisions contain no such authorization.

To be sure, there may be structural reasons that account for the Supreme Court’s willingness to recognize such a judge-made departure from statutory language in antitrust law but not patent law. The Patent Act is a detailed code, which is frequently amended,⁴⁶ inducing judges to stick more-or-less closely to its provisions. By contrast, the antitrust laws are relatively spare and amended less often. This has served to make judges much more comfortable about fashioning antitrust doctrine that is not

⁴⁰ *Id.* 489 (emphasis added) (quoting *Zenith Radio Corp. v. Hazeltine Res.*, 395 U.S. 100, 125 (1969)).

⁴¹ The doctrine was later extended to injunctions: *Cargill, Inc. v. Monfort of Colorado, Inc.*, 479 U.S. 104, 126 (1986).

⁴² *E.g.*, *Jacobson & Greer*, *supra* note 29, at 286.

⁴³ 15 U.S.C. § 15 (2016) (“[A] . . . ny person who shall be injured in his business or property by reason of anything forbidden in the antitrust law may sue therefor and shall recover threefold the damages by him sustainedFalse”).

⁴⁴ In antitrust, 15 U.S.C. § 26 (2016) (There is a private right to injunction “when and under the same conditions and principles as injunctive relief is granted by the courts of equity, under the rules governing such proceedings False”); in patent law, 35 U.S.C. § 283 (2016) (Courts “may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.”).

⁴⁵ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 390 (2006).

⁴⁶ John C. Stolpa, Case Comment, *Toward Aligning the Law with Biology? The Federal Circuit’s About Face in Anzo Biochem, Inc. v. Gen-Probe, Inc.*, 4 MINN. INTELL. PROP. REV. 339, 346 (2003).

called for by the statutory text.⁴⁷ For example, neither the per se rule nor antitrust's rule of reason is specified in the antitrust statutes.

But this difference is readily exaggerated. Patent law has its own judge-made rules that strongly limit entitlement to damages. For example, the "first sale," or patent exhaustion, doctrine is well over a century old and in patent law is entirely judge made,⁴⁸ although it is statutory in copyright.⁴⁹ Under the doctrine, someone who purchases a patented good takes it free of any patent law restrictions placed on that good, thereby providing a complete defense to an action for infringement based on violation of the restriction.⁵⁰ By the same token, the exclusion of "laws of nature, natural phenomena, and abstract ideas" are recognized by the Supreme Court as an "implicit exception" to the Patent Act, which nowhere mentions them.⁵¹

Similarly, a rule that the Supreme Court recently affirmed in the *Kimble* decision prohibits the assessment of royalties based on use after a patent has expired.⁵² Since the Patent Act says nothing about the duration of royalty provisions in license agreements, the rule is entirely judge made and provides a complete defense to an action seeking to enforce royalties that accrue after patent expiration.⁵³ For that reason the three dissenters protested that "nothing in the text of the Act even arguably forbids licensing agreements that provide for post-expiration royalties."⁵⁴ Indeed, the entire judge-made law of patent "misuse" was not statutory, and was intended to condemn patent restrictions that reached "beyond the scope" of the patent.⁵⁵ In sum, while the Supreme Court may not have been as aggressive about grafting doctrine onto the Patent Act as it has done for the antitrust laws, judge-made policy limitations on the ability to collect patent damages are hardly a rarity.

⁴⁷ See, e.g., *Nat'l Soc. Of Prof'l Eng'rs v. U.S.*, 435 U.S. 679, 688 (1978).

⁴⁸ E.g., Herbert Hovenkamp, *Post-sale Restraints and Competitive Harm: The First Sale Doctrine in Perspective*, 66 N.Y.U. ANN. SURV. AM. L. 487, 491 (2011); see also Herbert Hovenkamp, *Reasonable Patent Exhaustion*, YALE J. REG. (forthcoming 2018) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2995751).

⁴⁹ 17 U.S.C. § 109(a) (2016); see *Kirtsaeng v. John Wiley & Sons, Inc.*, 133 S.Ct. 1351, 1355 (2013).

⁵⁰ E.g., *Adams v. Burke*, 84 U.S. 453, 459 (1873) (refusing to enforce territorial restriction on use of a patented coffin lid after it had been sold); *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 621 (2008) (adhering to first sale doctrine and refusing to enforce quasi-exclusive dealing).

⁵¹ *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S.Ct. 2347, 2354 (2014).

⁵² *Kimble v. Marvel Entm't, LLC*, 135 S.Ct. 2401, 2406 (2015) (adhering on grounds of *stare decisis* to rule originally adopted in *Brulotte v. Thys Co.*, 379 U.S. 29, 30 (1964)).

⁵³ *Id.*

⁵⁴ *Id.* at 2415 (Alito, J., dissenting.). See Herbert Hovenkamp, *Brulotte's Web*, 11 J. COMP. L. & ECON. 527, 531 (2015).

⁵⁵ E.g., *Morton Salt Co. v. G. S. Suppiger Co.*, 314 U.S. 488, 493 (1942) (refusing to enforce patent tie via infringement action). See generally, Herbert Hovenkamp, *The Rule of Reason and the Scope of the Patent*, 52 SAN DIEGO L. REV. 515, 515 (2015).

B. Patent Damages vs. Patent Policy

The antitrust injury doctrine has given antitrust law something that patent law lacks, which is a mechanism for confronting the monster head on—asking whether recovery in a particular case is consistent with the purposes of the statute, or is simply based on raw faith that anything that infringes a patent must harm innovation, or perhaps worse yet, that once infringement is found it does not matter.

In fact, the idea that recovery for infringement is sometimes at odds with patent policy is not entirely unprecedented. The so-called “reverse doctrine of equivalents” eliminates liability for a literal infringement in situations where the infringing technology is so much cleverer than the plaintiff’s embodiment as to make infringement liability inequitable.⁵⁶ Under this doctrine, the courts rely on principles of equity to deny recovery notwithstanding that the defendant’s device reads on valid claims in the plaintiff’s patent.⁵⁷ The logic is simply that it would run contrary to patent policy to impose liability on a defendant whose device, while literally infringing, nevertheless constitutes a substantial innovation. To punish these innovators would undermine the patent system’s principal ambition. Our proposals rest on a similar proposition, namely that the courts ought not issue damages that passively reward patent holders for conduct that is likely to retard innovation or unreasonably limit access to patented technologies.

Without proposing anything so broad as a general “patent injury” or “innovation injury” doctrine for patent damages, the balance of this essay makes narrower proposals that are consistent with the current text of the Patent Act and that could be used to make patent enforcement actions more consistent with the underlying goals of the patent laws to promote innovation. We focus mainly on enforcement of patents that were not developed by their current enforcers but rather were acquired by assignment or license. Thus, the relevant innovation incentives belong in the first instance not to the plaintiffs, but to their assignors.

Further, this inquiry is not limited to practices that also violate the antitrust laws. An antitrust violation could certainly suffice to undermine a patent damages claim based on the same conduct, but that decision would result from application of the antitrust laws. In fact, one of the most severe criticisms of the patent “misuse” doctrine was that at some level it sought to apply antitrust principles but in fact often

⁵⁶ See, e.g., *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608–09 (1950) (“[W]here a device is so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way, but nevertheless falls within the literal words of the claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee’s action for infringement.”).

⁵⁷ *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1581 (Fed. Cir. 1991) (“The so-called “reverse doctrine of equivalents” is an equitable doctrine” used to “prevent unwarranted extension of the claims beyond a fair scope of the patentee’s invention . . .”).

found misuse when there was no antitrust violation.⁵⁸ Patent law may have its own reasons for denying or limiting patent damages even when no antitrust violation has been proven.⁵⁹

Nevertheless, finding an antitrust violation can operate as an important policy lever and can affect entitlement to patent damages. Any patent practice that is expressly authorized by the Patent Act is immune from antitrust scrutiny, provided that the challenged practice stays within the scope of the authorization. For example, the Patent Act expressly authorizes infringement actions⁶⁰ and domestic exclusive territorial licenses,⁶¹ and provides that patent tying is lawful unless the patentee has market power in the patent upon which the tie is conditioned.⁶² By contrast, the Patent Act does not authorize price fixing or resale price maintenance of patented products, field-of-use restrictions, exclusive dealing in patented products, pay-for-delay settlements, or infringement actions based on patents that the plaintiff knows or should know to be unenforceable.

Justice Breyer noted the importance of statutory authorization in the Supreme Court's 2013 *Actavis* decision, observing repeatedly that a payment to another firm to stay out of the patentee's market for a specified period was not authorized anywhere in the Patent Act.⁶³ Although the Patent Act expressly authorizes licenses,⁶⁴ a payment to someone not to produce is not a "license," and no other language in the Patent Act served to immunize such agreements from antitrust scrutiny. A rule such as this one is particularly appropriate when a statute is amended frequently, as the Patent Act is.⁶⁵ If Congress objects to the Supreme Court's refusal to declare a particular immunity because it is not expressly authorized by the Patent Act, it can add authorizing language any time it pleases—including language that would authorize pay-for-delay pharmaceutical settlements. That is precisely what it did in 1988, when it added language that made patent ties lawful unless the patentee had market power in the tying product.⁶⁶

⁵⁸ See Christina Bohannon, *IP Misuse as Foreclosure*, 96 IOWA L. REV. 475, 492–93 (2011).

⁵⁹ Cf. *Assessment Tech. of WI, LLC v. WIREdata, Inc.*, 350 F.3d 640, 647 (7th Cir. 2003) (finding practice to be close to copyright misuse and denying enforcement, even though it did not violate antitrust law).

⁶⁰ 35 U.S.C. § 271(a) (2016); *id.* § 281 (2016) (recognizing infringement action); *id.* § 283 (2016) (permitting injunction, consistent with principles of equity); *id.* § 284 (2016) (damages).

⁶¹ 35 U.S.C. § 261 (2016).

⁶² 35 U.S.C. § 271(d)(5) (2016).

⁶³ See *FTC v. Actavis, Inc.*, 133 S. Ct. 2223, 2233 (2013) (“the dissent does not identify any patent statute that it understands to grant such a right to a patentee, whether expressly or by fair implication”). *But see id.* at 2238 (Robert, C.J., dissenting) (complaining that the majority’s “novel approach is without support in any statute . . .”).

⁶⁴ 35 U.S.C. § 261 (2016).

⁶⁵ See *supra* note 46 and accompanying text.

⁶⁶ 35 U.S.C. § 271(d)(5) (2016).

Second, an important principle of statutory interpretation that applies to the relationship between any body of law and federal antitrust law is that general authorizing language does not serve to immunize particular anticompetitive instances of that authorization. For example, all corporations are statutorily authorized to make contracts,⁶⁷ but that does not create an antitrust immunity for anticompetitive contracts such as price fixing agreements. And while corporation law expressly permits corporations to acquire the stock or assets of other corporations,⁶⁸ this authorization does not apply to anticompetitive acquisitions, and thus does not create an immunity from the antitrust laws.⁶⁹ For that reason, although patents are expressly assignable by statute,⁷⁰ they are also productive assets and are treated as such under the Clayton Act's prohibition of anticompetitive asset acquisitions.⁷¹ And while the Patent Act expressly authorizes infringement lawsuits,⁷² it does not authorize improper, anticompetitive lawsuits based on patents that should be known to the patent holder to be improper.⁷³

Third, to conclude that a practice is not authorized under the Patent Act says nothing about its legality under the antitrust laws. Rather, antitrust law is then free to apply the analysis that it ordinarily applies in other settings, including per se illegality for a very small set of "naked" restraints and rule of reason analysis for others, which mandates proof of market power and anticompetitive effects. Innovation harm must of course be considered, but antitrust law in fact has far better tools for assessing innovation harm than patent law does for assessing competitive harm, which it virtually always ignores.

Nevertheless, failure to find an antitrust violation is not the end of the matter. Patent law needs to have its own interest in assertions of rights to damages that are fundamentally inimical to the purposes of the Patent Act or, in some cases that are anticompetitive and do not further any legitimate Patent Act goal.

II. Competition Policy and Externally Acquired Patents

Permitting issued patents or patent licenses to be transacted in a market produces considerable gains in both static (output) and dynamic (innovation) efficiency. The trick is to identify the relatively small subset of market transactions that are harmful.

⁶⁷ See, e.g., Del. Code Ann. tit. 8, § 122(13) (2016) ("Every corporation created under this chapter shall have power to (13) make contracts").

⁶⁸ See *id.* § 122(4) (right to "purchase" and "acquire" both "real or personal property").

⁶⁹ E.g., *FTC v. Phoebe Putney Health Sys., Inc.*, 133 S.Ct. 1003, 1015 (2013) (provision in statute authorizing hospital corporation to acquire different corporation did not justify merger to monopoly).

⁷⁰ 35 U.S.C. § 261 (2016).

⁷¹ E.g., *Telectronics Proprietary, Ltd. v. Medtronic*, 687 F. Supp. 832, 844 (S.D.N.Y. 1988); *In re Great Lakes Chem. Corp.*, 103 *Federal Trade Commission* (F.T.C.) 467, 467 (1984) (consent decree). See 5 AREEDA & HOVENKAMP, *supra* note 2, at ¶ 1202f3.

⁷² 35 U.S.C. § 281 (2016).

⁷³ E.g., *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 178 (1965).

For assessing market transactions, the tools of antitrust have important advantages over patent law. Guided by industrial economics, antitrust law has well-developed methodologies for assessing market power, identifying agreements that restrain trade, predicting the effect of specific practices, and individual tailoring of remedies in order to further competition as well as innovation.⁷⁴ By contrast, patent law analysis is typically indifferent to market effects, and sometimes even proceeds as if competition itself were the evil to be resisted.⁷⁵

Section 261 of the Patent Act authorizes patentees to grant exclusive licenses and also provides that patents can be assigned in writing.⁷⁶ Clearly someone who has acquired a patent from someone else can enforce it by either damage actions or an injunction, and when the patent case law assesses entitlement to damages it does not generally distinguish between internally developed patents and those acquired from outside inventors.⁷⁷

Further, any treatment that disfavors externally acquired patents too severely can restrain innovation, particularly by smaller inventors who do not produce themselves and rely on a secondary patent market for their returns. A well-functioning patent market necessitates that patents generally be assigned and licensed freely. As noted above, however, the power to transact does not include the power to transact anti-competitively. Further, nonexclusive licenses typically achieve all of the appropriate goals of patent transfer without any of the anticompetitive effects.⁷⁸

For purposes of competition policy, the distinction between internally developed and externally acquired patents can be quite important. First, internal development is presumptively unilateral, although some research is conducted jointly. By contrast, transacting in patents is necessarily bilateral. This has important implications for antitrust policy. Only a small number of unilateral actions are unlawful under the antitrust laws. By contrast, multilateral actions are covered much more aggressively by § 1 of the Sherman Act (all contracts and agreements, and some mergers),⁷⁹ § 3 of the Clayton Act (tying and exclusive dealing),⁸⁰ and § 7 of the Clayton Act (mergers).⁸¹

⁷⁴ Jonathan B. Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power*, in HANDBOOK OF ANTITRUST ECONOMICS (Paolo Buccirossi, ed., 2008).

⁷⁵ *E.g.*, *Trebro Mfg., Inc. v. FireFly Equip., LLC*, 748 F.3d 1159, 1171 (Fed. Cir. 2014); *see infra* pp. 18–19.

⁷⁶ 35 U.S.C. § 261 (2016).

⁷⁷ *See, e.g.*, *Trebro*, 748 F.3d at 1171 (holding that injunctive relief may be appropriate for an externally acquired and unused patent if the parties are competitors). *See also* Erik Hovenkamp & Thomas F. Cotter, *Anticompetitive Patent Injunctions*, 100 MINN. L. REV. 871, 873–76 (2016).

⁷⁸ *See discussion infra* Section III.

⁷⁹ Sherman Act, ch. 647, 26 Stat. 209 (1890).

⁸⁰ Clayton Act, ch. 323, 38 Stat. 731 (1914).

⁸¹ *Id.* at 731–32.

Second, in order to maintain a dominant position a firm must not merely keep its own technology up to date, it must also control the innovations of rivals or potential rivals. Developing valid patents internally and enforcing them is unilateral conduct, clearly authorized by the Patent Act and cannot be an antitrust violation. But in many cases internal development alone will not exclude competing innovations by rivals. To the extent that more competitive markets are conducive to more innovation, as the literature largely concludes,⁸² increased innovation is likely to come heavily from firms that compete with the dominant firm. But many of these gains could be lost if the dominant firm were free simply to acquire exclusive rights in patents, particularly of patents that it does not intend to use.

The market generally determines the value of a patent, but this value will differ depending on the degree of competitiveness and the identity of the buyer. For example, all things equal, a dominant firm will pay more for an exclusive right to a patent essential to the maintenance of its dominant position than would a firm attempting to compete with the dominant firm. For the former, the value of the patent is the enhancement or maintenance of its dominant position. For the competitor, by contrast, it is the much less valuable right to competitive returns in the dominant firm's market. This reflects that industry-wide profits are generally higher when the market is less competitive. Thus transactions that enhance or maintain market dominance will tend to be more profitable than those that foster competition. Consequently, a patent holder can earn more by selling an exclusive license to a dominant firm than to its competitor, all else being equal. Note, however, that these are also the transactions most likely to injure consumers. Further, the continued absence of competition will tend to suppress market-wide innovation.⁸³

How much a dominant firm will pay for a *nonexclusive* right to a patent presents a completely different question, and depends on the relationship between the patent and the firm's existing technology, and on the possible effects of competing uses of the patents. If the patent is a desirable complement to or improvement upon the firm's existing technology, then it will practice the patent in order to improve its own product. In that case even a nonexclusive license is valuable, since the firm can earn more by selling a more desirable product. An exclusive license would be more valuable to the dominant firm, however, because this precludes competitors from implementing competing uses of the patented technology.

By contrast, if the firm's product does not benefit from the patented technology, then it will not use it, and thus a nonexclusive license provides no value. However, an exclusive license may still remain quite valuable to the extent that it excludes rivals

⁸² See discussion *supra* pp. 7–8.

⁸³ See discussion *infra* pp. 33–34.

from using the invention to improve their own products, which would increase the level of competition faced by the dominant firm.

In speaking of firms that systematically buy up patents in their area of production, the courts sometimes suggest that they are almost always acting anticompetitively.⁸⁴ The issue is complex, however. A firm that aggregates complementary patents and uses them in its products is certainly not behaving anticompetitively. Xerox is an example of a firm that created market leading products by doing that.⁸⁵ By contrast, aggregations of exclusive rights in substitute patents are much more suspicious. A firm does not need multiple substitute patents, since it will practice only one of them. So the systematic aggregation of substitute patents by a firm with substantial market power (or where the aggregation threatens to produce substantial market power) raises the possibility of unlawful monopolization.

Aggregation and nonuse of competing patents by a non-practicing entity poses a significant competitive threat if it threatens dominance in either a product market or in the technology market covered by the patents. The reference to technology markets is critical because a non-practicing entity by definition cannot be a monopolist in the *product* market, where its output is zero. In one case involving patent aggregator *Intellectual Ventures* (IV) the district court mistakenly dismissed a claim of monopolization on the grounds that IV had no market position in the product market for banking services, which it of course was not providing.⁸⁶ It rejected a claim that IV was monopolizing “the ex post market for technology used to provide commercial

⁸⁴ *E.g.*, *United States v. Line Material Co.*, 333 U.S. 287, 304, 307 (1948) (“[T]here may be an aggregation of patents to obtain dominance in a patent field. False . . . By aggregating patents in one control, the holder of the patents cannot escape the prohibitions of the Sherman Act.”); *United States v. Singer Mfg. Co.*, 374 U.S. 174, 196–97 (1963) (similar, quoting *Line Material*); *Hartford-Empire Co. v. United States*, 323 U.S. 386, 443 (1945) (discussing a requirement of license on “patents illegally aggregated”); *United States v. Nat’l Lead Co.*, 332 U.S. 319, 367 (1947) (similar). *See also* *United States v. Gen. Elec. Co.*, 82 F.Supp. 753, 816 (D.N.J. 1949):

. . . General Electric regimented an industry by, among other things, its acquisition of patents to perpetuate a control over the incandescent electric lamp long after its basic patents expired to maintain a dominant position, rendering it possible for it to eliminate competition and maintain an industrial monopoly. Its aggregation of patents into its control permitted General Electric to monopolize patents and by so doing it violated Sec. 2 of the Sherman Anti-Trust Act.

⁸⁵ *See* *SCM v. Xerox Corp.*, 645 F.2d 1195, 1198–99 (3d Cir. 1981) (recounting Xerox’s assembly of patents in order to create plain paper copier). *But cf.* *Intellectual Ventures, LLC v. Capital One Fin. Corp.*, 99 F.Supp.3d 610, 623 (D.Md. 2015) (describing aggregation by non-practicing entity and enforcement as potential antitrust violation). *See generally* Alan Devlin, *Antitrust Limits on Targeted Patent Aggregation*, 67 FLA. L. REV. 775 (2015) (advocating limited use of antitrust).

⁸⁶ *Intellectual Ventures I, LLC v. Capital One Fin. Corp.*, No. 1:13-cv-00740, 2013 WL 6682981, at *4–5 (E.D. Va. Dec. 18, 2013).

banking services.”⁸⁷ IV had acquired numerous patents directed at such services.⁸⁸ The plaintiff argued that because the patents that IV had collected into its portfolio had included all known substitutes for operating in the market it had effectively placed banks into a position where they had to obtain a license from IV in order to offer banking services.⁸⁹ This claim seems completely consistent with § 2 of the Sherman Act, which does not distinguish technology markets from product markets. For that matter, it could also be addressed under Clayton Act § 7’s prohibition of anticompetitive asset acquisitions.

The patent laws permit and even encourage the development of market shifting innovations that might serve to give the inventor substantial market power. Nothing in the patent act, however, permits the assignment of competing patents to a single owner with the power to foreclose all available avenues to a certain result. Suppose, for example, that three separate inventors develop alternative technologies A, B, and C for achieving a certain outcome. The Patent Act contemplates that these three technologies can be independently practiced by the inventors, licensed to others either exclusively or nonexclusively, or assigned. Further, nothing in the Patent Act explicitly prohibits the three technologies from being assigned to the same firm. But the general assignment provision in the Patent Act does not expressly authorize such a transfer either, and here antitrust has an independent role.⁹⁰ By contrast, if a single entity invented technologies A, B, and C and then selected one of them as optimal, its enforcement actions based on any of the three technologies would be purely unilateral acts, generally difficult to reach under the antitrust laws.⁹¹

In this case the practicing acquirer of the three technologies would employ the one that serves it best. Because the technologies are competing, however, it would not practice the other two but hold them only for the purpose of excluding rivals or potential rivals.⁹² That conduct is not addressed by the patent laws and is fully reachable by antitrust laws. Indeed, it is akin to a situation in which a vertically integrated

⁸⁷ *Id.* (internal quotation marks omitted). See *infra* pp. 26–27 (discussing the decision more fully).

⁸⁸ In a separate infringement litigation between IV and Capital One, several of these patents were invalidated, and this decision was recently upheld by the Federal Circuit. See *Intellectual Ventures I, LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1332 (Fed. Cir. 2017).

⁸⁹ *Intellectual Ventures I*, 2013 WL 6682981, at *3–5.

⁹⁰ For example, see Antitrust Div., U.S. Dep’t of Justice, *Antitrust Division Policy Guide to Merger Remedies*, p. 11 (June 2011) (providing for IP licensing as a remedy).

⁹¹ Patenting of substitute inventions by a single inventor—sometimes called “preemptive patenting”—is not *prima facie* anticompetitive. It may reflect, for example, that inventing around just one of the patents would be relatively easy, leaving the patent weak. Thus, the inventor may be willing to invest in innovation only if he can patent multiple variants of his idea and, therefore, prevent others from easily inventing around him.

⁹² The discussion here oversimplifies by assuming that competing patents cannot also function as complements. When patents have numerous claims they may sometimes operate as both complements and substitutes. See, e.g., *Princo Corp. v. Int’l Trade Comm’n*, 616 F.3d 1318, 1324, 1345 (Fed. Cir. 2010) (Digital and analog patents operated as substitutes in product market, but one claim in digital patent wrote on the analog technology, making them complements as well.).

firm buys all competing upstream manufacturers (effecting a horizontal merger in the upstream market) in order to deprive downstream rivals from the upstream good.

Any rule for assessing damages actions based on externally acquired patents must then make some important tradeoffs. First, effective innovation incentives should include the right of inventors to assign their patents to others. Second, by common consensus, monopoly is much less conducive to innovation than is competitive patent ownership. One rule that would particularly discourage innovation would permit a single dominant firm to buy up exclusive rights to patents by others and then keep these patents unpracticed, using them only to deter rivals from entering its market. The courts may facilitate this outcome to the extent that they award substantial damages to plaintiffs that acquire patents to achieve monopoly in the relevant technology market.

III. Antitrust Limits on Damages for Externally Acquired Patents

Patent enforcement by damages actions is often more conducive to maintaining competition than patent enforcement by injunction. Injunction remedies can prevent a competitor from entering a market at all to the extent that entry requires practice of the infringed patents. By contrast, damages remedies place a price on competitive entry while not necessarily excluding it altogether. To be sure, a monopolist patentee can obtain the same result by placing an unacceptably high royalty on any patent it owns.⁹³ But damages remedies typically limit a patentee to “reasonable” royalties as determined by the court. Depending on how damages are assessed these could be significantly lower than the monopolist’s optimal royalties.

When patents are acquired from external inventors, however, and particularly if they are both externally acquired and unused, then the remedy issue is more difficult. Now countervailing considerations for the protection of competition and the innovation that it induces come into play—or, more accurately, they *should* come into play. The problem with the current system is that it ignores important factors like patent aggregation and market power when fashioning remedies. And by awarding large damages for patents obtained through anticompetitive acquisitions, the courts passively encourage transactions that serve to choke off access to valuable patented

⁹³ Even if it is true that a patent holder and its rival could not agree on mutually beneficial licensing terms, implying that an *ex ante* bargain would have resulted in nonuse by the rival, it does not follow that injunction would be preferable to damages if the rival infringed the patent. The defendant may nevertheless be able to compensate the harm it imposes without shutting down; it will just have to do so at a price that exceeds the value it derives from the infringement. For example, suppose that the defendant-rival’s use of the patent increases its profits from \$9M to \$10M, but reduces the plaintiff’s profits from \$10M to \$8M. Then, mutually beneficial licensing is impossible because it hurts the patent holder by more than it benefits the licensee. However, an injunction would still be inefficient because the defendant can afford to compensate the plaintiff for its \$2M injury without having to shut down.

inventions, and whose propensity to create monopoly will tend to undermine the patent system's ambition to promote innovation.

To mitigate the problems created by anticompetitive patent acquisitions, we offer the following proposal: infringement damages should be denied when: (1) the plaintiff acquired the infringed patent externally;⁹⁴ (2) the plaintiff has (or threatens to create) a dominant position in the relevant technology market; and (3) the acquisition played a significant role in expanding or perpetuating the plaintiff's dominant position in the technology market. While inherently an antitrust remedy, this standard may operate in practice as a defense to infringement liability. However, the antitrust violation (the anticompetitive acquisition) arises at the time of the patent's assignment to the plaintiff, and thus a prospective licensee can challenge the acquisition before it infringes the patent. Importantly, this standard does not preclude the dominant firm from securing the benefits of the patent in question; it simply requires it to obtain them through a nonexclusive license so as not to suppress competition in the process.

There are a few things to note about our proposal. First, it focuses on "market dominance" with respect to the relevant *technology* market—the class of technologies performing the same or similar function as the patented invention—rather than any product market. If the plaintiff is a producer, this may or may not translate into a dominant position in its product market as well, depending on the extent to which the relevant technology drives demand for the final product. However, as already noted, antitrust seeks to ferret out restraints on competition in all markets, whether or not the relevant "goods" happen to be sold directly to consumers. Of course, it may be difficult to measure things like market shares or concentration in technology markets, since there are not many transactions to measure. But a court can nevertheless infer a dominant market position based on a finding that prospective users of the relevant technology have very limited options aside from obtaining a license from the patent holder.

Second, this standard requires that the plaintiff maintained a dominant position in the technology market before acquiring the patent in question, or where the acquisition created a dominant position or threatens to do so. If a patent acquisition does no more than transfer an existing monopoly position from one firm to another, no monopoly is *created*.⁹⁵ For example, if there is a single drug that can treat a particular disease, then monopoly power runs with its patent. If the drug is sold to a different firm (say, because the acquiring firm is a more efficient manufacturer) then the

⁹⁴ As clarified in Section III. C., *infra*, an exclusive license (as opposed to an assignment) should generally also be sufficient to trigger our proposed limit on enforcement.

⁹⁵ See *Brunswick Corp. v. Riegel Textile Corp.*, 752 F.2d 261, 266 (7th Cir. 1984) (shifting monopoly power from one party to another "has no antitrust significance"). See also *Olympia Equip. Leasing Co. v. W. Union Tel. Co.*, 797 F.2d 370, 374 (7th Cir. 1986) (noting that it is "[n]ot the possession, but the abuse, of monopoly power [that] violates" the antitrust laws).

acquirer has not abused a dominant position; the monopoly has simply changed ownership. On the other hand, if the acquirer were the only firm to have a competing medicine, then the acquisition would increase market concentration by giving the acquirer a stronger position than either firm maintained previously, and this would likely be anticompetitive.

The following sections support the proposed limits on enforcement by considering anticompetitive acquisitions in some important contexts. The first involves acquisition and nonuse by a producer with a dominant position in the relevant technology market. The second involves acquisitions by a nonpracticing entity that create dominance in the technology space. We also consider the case of dominant producers who practice the acquired patent. In that case the prospect of licensing rather than assignment—and in particular the distinction between exclusive and nonexclusive licensing—becomes critical. In all that follows, when we say a firm is “dominant” we are referring to its market position in the relevant technology. Even if the firm is a producer, it may or may not be dominant in its product market, although some of the most interesting scenarios arise when it is dominant in both.

Also we offer a brief word on efficiencies. When antitrust’s rule of reason is applied to any transaction, efficiencies must be considered. Of course, patent acquisition and actual use can create significant efficiencies, particularly if the acquired patent complements the acquirer’s existing technology. Acquisition and nonuse is a different matter. No complementarity accrues to the acquirer, given that it is not taking advantage of the acquired patent in its own production processes. To the extent that such an acquisition has any impact on efficiency it lies in precluding a rival from taking advantage of the acquired but unused technology. It is extremely difficult, however, to make any case that keeping a commercially valuable technology off the market does anything other than decrease social welfare. As a result we would favor a strong presumption that an acquisition and nonuse produces no cognizable efficiencies, at least on balance.

One possible exception might occur if the acquirer intends to use the acquired patent in the future after it modifies its own technology to make the acquired patent more complementary. Another, more dynamic efficiency might accrue to the extent that the ability to sell an exclusive license to a dominant firm will provide a higher price than the sale or multiple nonexclusive licenses. As a result, the right to make such a sale might increase the incentives to the original inventor. Whether it does so, however, is hardly clear.⁹⁶

⁹⁶ See discussion *infra* Section V.

A. Patent Acquisition and Nonuse by Dominant Producers

As a general matter property owners are free to use their property or not, without subjecting themselves to adverse consequences from the State. The general rule is subject to a few qualifications. For example, unused property is more susceptible to being lost by adverse possession. By and large, however, legal policy has not taken a particularly aggressive position against unused property even though outside observers might regard nonuse as inefficient. For example, if Ford owns an unused production facility it can bring a trespass or similar action against another firm, such as Chrysler, who might start using it without permission. Of course, in this case Chrysler remains free to produce an identical factory of its own, and this outside option might persuade Ford to sell its unused factory.

Patents raise somewhat different issues. The owner of an unused patent has the right to compensation for infringement of that patent, whether or not the “trespasser” developed the technology entirely on its own, and even if it did not know it was infringing. Further, the trespasser cannot simply reproduce the patent in the way a rival car manufacturer can replicate a factory; it must *invent around* the patent, or else take advantage of an existing noninfringing substitute in order bring its own product to market. As a result, the unused patent potentially creates more “dead space” in the market than does the unused production facility.

Historically patent law recognized this fact and developed such devices as “working clauses” requiring patents to be practiced within a few years after issuance,⁹⁷ or in some cases even gave the sovereign the power to revoke a patent for nonuse.⁹⁸ The Supreme Court’s 1908 *Paper Bag* decision held, however, that a patentee can enforce an unused patent.⁹⁹ The principal more recent limitation is the substantial body of case law following the Supreme Court’s *eBay* decision to the effect that the owner of an unpracticed patent may not be able to obtain an injunction, but must be relegated to damages.¹⁰⁰

A particularly serious case involving externally acquired patents involves a monopolist (in the product market) that acquires an outside patent that would be effective in creating competition if another firm were able to practice it. Thus the acquisition allows the firm to maintain a chokehold on the technology needed to compete in the product market. Instead of practicing this patent itself, however, the monopolist

⁹⁷ See Herbert Hovenkamp, *The Emergence of Classical American Patent Law*, 58 ARIZ. L. REV. 263, 283 (2016).

⁹⁸ *Id.* at 282–83.

⁹⁹ *Cont’l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 429–30 (1908).

¹⁰⁰ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 394 (2006). See Erik Hovenkamp & Thomas F. Cotter, *Anticompetitive Patent Injunctions*, 100 MINN. L. REV. 871, 875–76 (2016) (noting that injunctions are less common after *eBay*); Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 8–11 (2013) (noting that injunctions are less common after *eBay*).

continues with its existing technology, not using the acquired patent but merely holding it to limit the options available to competitors. Upon seeing an outside patent with such power, a dominant firm would be willing to pay up to the amount by which new competition would reduce its profits in order to acquire an exclusive right to it.¹⁰¹ That would be a classic case of rent seeking, or earning monopoly profits without adding anything to production.¹⁰²

In its *Trebro* decision the Federal Circuit addressed such a case. Whether the patent holder was “dominant” in the product market was never addressed, because the parties raised no antitrust issues and patent law does not require antitrust-like inquiries into firm dominance. But it is certainly possible, as it was the largest firm in a market that apparently included only three firms.¹⁰³ The patent holder was a producer of sod-harvesting machines.¹⁰⁴ It then acquired a substitute patent for an important part of the harvester that performed the same functions in a different way.¹⁰⁵ However, it continued to use its old technology, leaving the acquired patent unused.¹⁰⁶ When a rival firm built a machine that infringed the acquired but unused patent, the patent holder sued.¹⁰⁷

The Federal Circuit used the case as an opportunity to qualify the post-*eBay* position on injunctive relief for nonpracticing plaintiffs. It concluded that the plaintiff was entitled to an injunction, notwithstanding its nonuse of the patented article, because the defendant was a direct competitor, thus stealing sales from the patent holder.¹⁰⁸ As a result, it did not resemble the traditional NPE who does not practice any patent at all and thus does not compete with producers. In fact, there are non-antitrust grounds for doubting that injunctive relief is justified in such a case.¹⁰⁹

The disturbing thing about *Trebro* is the court’s failure to take a broader view of the implications for competition policy. In fairness, the defendant apparently never raised the antitrust laws or competition policy as an objection. Assuming that the patent holder was in fact a dominant firm, the court was effectively sanctioning a

¹⁰¹ For example, in a simple linear model of Cournot (output-based) competition, a duopolist earns a little less than half of the monopoly profit. Thus, the monopolist would pay more than 50% of its profits just to avoid the entry of a new competitor.

¹⁰² See generally Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807 (1975).

¹⁰³ See *Trebro Mfg., Inc. v. Firefly Equip., LLC*, 748 F.3d 1159, 1170 (Fed. Cir. 2014) (describing market as having three players, and Firefly as a recent entrant). See also *Paper Bag*, 210 U.S. 405 (involving a dominant firm).

¹⁰⁴ *Id.* at 1162.

¹⁰⁵ See *id.* at 1171.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 1162.

¹⁰⁸ *Trebro*, 748 F.3d at 1170–71.

¹⁰⁹ See Hovenkamp & Cotter, *supra* note 99, at 878–92 (arguing that, by entering the market with its own technology before acquiring the infringed patent, the plaintiff revealed that injunctive relief was not necessary to uphold his incentive to enter the market).

strategy by which a firm buys up competing patents and shuts them down, thereby expanding and prolonging monopoly in the market in question. Further, as noted previously, to the extent that such an acquisition has any impact on either static or dynamic efficiency, it must be regarded as negative. No antitrust lawyer in such a case would neglect the patent issues while litigating the competition issues. To say this a little differently, antitrust law takes patent policy into account all the time, while patent litigation very largely ignores competition issues except in a few cases.

Assuming that the court had denied injunctive relief in *Trebro*, as it should have, should the dominant firm be able to obtain damages from the infringer? Simply denying the injunction in *Trebro* would not solve the acquisition-plus-shutting-down problem if the infringement plaintiff were entitled to substantial damages for infringement.¹¹⁰ As an antitrust matter, the superior solution would be to prevent the dominant firm from acquiring an exclusive right to a competing patent in the first place, as a monopoly-enhancing asset acquisition under § 7 of the Clayton Act or else under § 2 of the Sherman Act.¹¹¹ But in lieu of catching anticompetitive patent acquisitions as they arise, the next best thing is simply to deny any remedy in an infringement case.

B. Dominant Non-Practicing Entities

Systematic aggregation of substitute patents by a non-practicing entity (NPE) can raise significant issues of both innovation and competitive harm, particularly where the portfolio of these substitutes dominates the available technology space, giving the NPE a dominant position in the relevant patent market. Unfortunately, however, this “market space” question is not one that would ordinarily be raised in patent litigation, because no provision in the Patent Act, nor any existing patent doctrines, make it relevant.

The principal difference between the dominant NPE and the dominant producer lies in the particular things they want to accomplish through anticompetitive patent acquisitions. As discussed in the previous section, the producer who dominates the technology space wants to use this position to deprive its product market rivals of access to the relevant technology class. Thus the motivation is exclusion. By contrast, the NPE does not want to cut off access entirely. After all, it makes no money if its patents are not licensed or infringed. Rather, the NPE’s goal is simply to raise

¹¹⁰ There may be some circumstances in which the antitrust laws could not be applied. For example, the courts are more-or-less uniform in holding that the four-year antitrust statute of limitation on acquisitions runs from the date of the acquisition, provided that it was not concealed, and not from the date of a subsequent infringement action. The Sherman Act § 2 analysis would differ because simply acquiring a patent is not a qualifying exclusionary practice. Exclusion would come when the patent is enforced. *See generally* 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 320 (4th ed. 2014) (antitrust statute of limitations).

¹¹¹ *See* notes 79- 81.

the license fees it can demand by eliminating inter-licensor competition, and it accomplishes this by buying up most of the externally-held patents that compete with its own. This is a very basic strategy that is not limited to patent acquisitions. Any firm can earn more by controlling competing goods or processes. This is why powerful competing firms would essentially always like to merge or fix prices if they can get away with it, or why a dominant firm might wish to buy up all known reserves of an essential input.¹¹²

A second difference between NPEs and producers is that NPEs are typically limited to damages when their patents are held valid and infringed. The Supreme Court's *eBay* decision was an important victory against overreaching patent enforcement, particularly by non-practicing entities that often hold large portfolios.¹¹³ The Federal Circuit's rule that made injunctions in patent infringement cases virtually automatic had led to the prospect of significant holdup problems, particularly as against unknowing infringers who had substantially invested in specific technology later found to infringe.¹¹⁴ In an extreme case the threat of an injunction could induce an infringement defendant to pay up its entire sunk investment.¹¹⁵ Under *eBay*, however, the patent holder must show its entitlement to an injunction under equity law's traditional four-factor test.¹¹⁶ In most cases involving non-practicing entities the second factor is decisive: a firm that is not practicing its patents has only one expectation of profit, and that is royalties, for which damages are an adequate substitute.¹¹⁷

eBay addressed one of the more substantial holdup problems that can accrue when non-practicing entities threaten firms with massive infringement liability.¹¹⁸

¹¹² See, e.g., *United States v. Aluminum Co. of Am.*, 35 F. Supp. 820, 822 (S.D. N.Y. 1940) (allegations that Alcoa bought up 90% of known reserves of bauxite, an essential input into aluminum, in order to deny access to rivals).

¹¹³ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006). See discussion *supra* p. 21 and note 99.

¹¹⁴ E.g., *NTP, Inc. v. Research in Motion, Ltd.*, 2003 WL 23100881 (E. D. Va. Aug. 5, 2003) (holdup of Blackberry handheld device; affirming finding of infringement and order granting injunction). See Tim Wu, *Weapons of Business Destruction: How a Tiny Little "Patent Troll" Got Blackberry in a Headlock*, SLATE (Feb. 6, 2006).

¹¹⁵ See Christina Bohannon & Herbert Hovenkamp, CREATION WITHOUT RESTRAINT: PROMOTING LIBERTY AND RIVALRY IN INNOVATION, 78 80 (2012).

¹¹⁶ The test requires proof (1) that the plaintiff has suffered or is threatened with irreparable injury; (2) that remedies at law, such as damages, are inadequate; (3) that the balance of hardships as between the parties favor the injunction; and (4) that the public interest would not be disserved by the injunction. *eBay*, 547 U.S. at 391.

¹¹⁷ See e.g., *Ricoh Co., Ltd. v. Quanta Computer, Inc.*, 2010 WL 1607908, at *1 (W.D. Wis. Apr. 19, 2010); *Amgen, Inc. v. Hoffman-La Roche, Ltd.*, 581 F. Supp. 2d 160, 210 (D. Del. 2008); *Clouding IP, LLC v. Amazon. Com, Inc.*, 2013 WL 2293452, at *5 (D. Del. May 24, 2013); *Laserdynamics, Inc. v. Quanta Computer, Inc.*, No. 2:06-CV-348, 2010 U.S. Dist. LEXIS 61645, at *8 (E.D. Tex. June 22, 2010); *MercExchange LLC v. eBay, Inc.*, 500 F. Supp. 2d 556, 582 (E.D. Va. 2007). See Ted Sichelman, *Purging Patent Law of "Private Law" Remedies*, 92 TEX. L. REV. 517, 540-41 (2014).

¹¹⁸ As one court observed:

The threat of damages actions remains, however. The most troublesome threat is damages actions based on multiple patents, accompanied by settlement offers that are typically within litigation costs, or at least not much more than that. In the short run, at least, the value of settling to the defendant is the expected cost of avoided litigation plus the value of removing the possibility that validity and infringement would be found. Even if this risk is small, a settlement might be the preferred course.¹¹⁹

NPE aggregation of substitute patents has never been condemned, and has only recently been challenged at all. Several cases, some of which are ongoing, have confronted the acquisition and enforcement activities of Intellectual Ventures (IV), a large patent assertion entity (PAE) whose technologies serve many different product markets, including the banking industry. IV acquired from outside inventors some 3,500 patents relating to transaction processing and similar activities in commercial banking. Its apparent goal was to acquire control over all feasible alternative technologies for performing these activities. It then brought patent infringement actions against several banks. Under *eBay*, IV as an NPE probably could not anticipate obtaining an injunction; however, it might obtain damages and, more importantly, hold out the threat of litigating damages actions on a large number of patents as leverage for obtaining a settlement. The banks responded by filing antitrust counterclaims alleging that IV's activities constituted unlawful attempts to monopolize.¹²⁰

Although PAEs [non-practicing patent assertion entities] rarely win the lawsuits they bring, that is because they rarely litigate them to judgment. The threat of costly and disruptive litigation is their strongest tool, and it is a potent threat. "PAEs often offer to settle for amounts well below litigation costs to make the business decision to settle an obvious one." This allows PAEs "to extract licensing fees far out of proportion with the technology contributed by the patent."

Advanced Video Tech., LLC v. HTC corp., 2015 WL 7621483, at *2 (S.D.N.Y. Aug. 28, 2015) (internal citations and footnote omitted) (citing and quoting Brian T. Yeh., Cong. Research Serv., R42668, *An Overview of the "Patent Trolls" Debate* 1 (April 16, 2013), available at <https://www.fas.org/sgp/crs/misc/R42668.pdf>); John R. Allison, Mark A. Lemley & Joshua Walker, *Patent Quality and Settlement Among Repeat Patent Litigants*, 99 GEO L.J. 677, 694 (2011) (observing that NPEs lose roughly 92% of litigated infringement suits); Alan Devlin, *Revisiting the Presumption of Patent Validity*, 37 SW. U.L. REV. 323, 349 (2008).

¹¹⁹ One reason for this is that a PAE may be willing to follow through on its litigation threat even if it expects to lose money in court. By doing this whenever its demands are rejected, PAE may develop a litigious reputation that persuades its targets to pay its demands whenever they are lower than the cost of litigation, even if the underlying infringement claims are largely frivolous. See Erik Hovenkamp, *Predatory Patent Litigation: How Patent Assertion Entities Use Reputation to Monetize Bad Patents*, 1–6 (August 5, 2013) (unpublished manuscript) (on file with the authors and available on SSRN).

¹²⁰ *Intellectual Ventures I, LLC v. Capital One Financial Corp.*, 99 F.Supp.3d 610, 614–15 (D.Md. 2015) (sustaining monopolization claim); however, a subsequent decision dismissed the complaint with leave to amend. An unpublished decision by the Federal Circuit on March 10, 2016, permitted the antitrust claims to proceed. *In re Intellectual Ventures*, 646 Fed. Appx. 928 (Fed Cir. Mar. 10, 2016). *Contra Intellectual Ventures I, LLC v. Capital One Fin. Corp.*, 2013 WL6 682981 at *6–8 (E.D.Va. Dec. 18, 2013) (rejecting Sherman Act Section 2 claim on analogous facts, largely on market definition grounds).

Under the Supreme Court's *Walker Process* doctrine an infringement action based on a patent reasonably known by the plaintiff at the time of the lawsuit to be unenforceable could constitute an attempt to monopolize.¹²¹ But this particular case had not yet reached that stage, which usually involves a determination that a patent identified in an infringement complaint was both unenforceable and should have been known by the infringement plaintiff to be unenforceable. Rather, the infringement defendants were making a very different claim, namely, that the mere act of aggregating a large number of patents and bringing infringement actions on them constituted the attempt to monopolize, whether or not the patents were individually valid and enforceable.

To illustrate the problem, suppose that a particular financial services process could be accomplished by only three alternative patented means, called Alpha, Beta, and Gamma. These three are either individual patents or else individual portfolios of complementary patents. When owned by their original inventors or other assignees, these three technologies would compete with one another and could be offered on competitive terms. If a single entity acquired all three of them from diverse owners, however, the effect would be to assemble them under a single owner, thus eliminating competition in this market. Such a pattern of acquisitions could certainly violate § 2 of the Sherman Act. Under some circumstances it could also violate § 7 of the Clayton Act.¹²² Once the patent owner acquired the Alpha portfolio, the acquisition of either the Beta or Gamma portfolios would be a horizontal merger. Acquiring all three would constitute a merger to monopoly.

In analyzing this claim, one important issue is the relationship among the acquired patents or portfolios. Complementary patents held by the same owner are practiced together, and when so practiced they are more valuable than if they are practiced individually. By contrast, competing patents or portfolios are used in the place of one another and a firm would ordinarily practice one but not the others. The antitrust counterclaim indicated that to a substantial extent the patents were competing, because IV's intent was to blanket all available paths to operating the systems covered by the patents. To the extent that were true, it would not matter that most others were also complementary.

Another relevant question is whether IV's acquisitions (or prior acquisitions by other firms) actually assembled the competing patents into a single owner, or whether they were invented by a single entity from the onset. For example, suppose that one patentee had developed the technology and received all 3,500 patents as an individual

¹²¹ *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172 (1965). See 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 706 (4th ed. 2015).

¹²² As noted earlier, a patent is an "asset" subject to § 7's prohibition of anticompetitive asset acquisitions. See discussion *supra*, text at note 71.

inventor. In that case that patentee's assignment to IV would be a mere transfer of the monopoly from one firm to another.¹²³

Under the rule of reason for § 2, one must compare the anticompetitive effects of a practice against its benefits.¹²⁴ An acquisition of numerous competing patents by an entity who is not using them and which blanket the alternatives in a market does not present a close call. While patent policy encourages assignments or exclusive licenses of patents, it does so principally to enable the acquiring firm to practice the acquired patents. To be sure, such transactions also provide a market for small outside inventors, but antitrust policy forbids firms from assembling a monopoly through acquisitions, even if such a practice produces higher prices for a seller.¹²⁵ While patents are sometimes said to confer a "monopoly," that means no more than that they have the power to exclude via infringement actions. Nothing in the patent act authorizes the post-issuance creation of monopolies in a product or technology market by assembling a portfolio of competing patents.

C. Dominant Users: Exclusive vs. Nonexclusive Licenses

Suppose that a firm with an already-dominant position in the relevant technology market wants to secure the rights to use an external patent. That is, the firm already owns some substitute technologies, but it prefers to use that covered by the external patent. The market choices would be an assignment or an exclusive license, which amount to the same thing, or else a non-exclusive license. The Patent Act expressly permits exclusive licenses, and there are good reasons for generally allowing them.¹²⁶ But the Patent Act says nothing about anticompetitive exclusive licenses used to eliminate rivalry between alternative patented technologies.

Importantly, the nonexclusive license will give the dominant firm everything it needs to improve its own production. It simply will not be able to sue for infringement or prevent the patent holder from issuing licenses to third parties. The question is an important one because exclusive patent acquisitions can create formidable entry barriers to those seeking to compete with a dominant firm. The appropriate antitrust vehicles for assessing such practices would be either § 2 of the Sherman Act, which prohibits anticompetitive exclusions, or § 7 of the Clayton Act, which prohibits anticompetitive acquisitions. Neither would usually be invoked by a nonexclusive

¹²³ See *Brunswick Corp. v. Riegel Textile Corp.*, 752 F.2d 261, 266 (7th Cir. 1984).

¹²⁴ See Herbert Hovenkamp, *Antitrust Balancing*, 12 N.Y.U. J.L. & Bus. 369 (2016), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2687453.

¹²⁵ See 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 701 (4th ed. 2015).

¹²⁶ 35 U.S.C. § 261 (2012). Allowing exclusive licenses is valuable in many contexts where the absence of exclusivity would largely eliminate profits by driving prices down to marginal cost. For example, competition between competing sellers of a pharmaceutical drug is notoriously intense, and often involves substantially lower prices than those that a monopolist would set. Further, because the patent typically dominates the product, the resulting output is largely undifferentiated. As such, the incentive to develop a pharmaceutical drug may depend on the permissibility of exclusive licensing.

license, however, given that the patent acquisition would not ordinarily enable the dominant firm to reduce market wide product output.

One might wonder if the incentives of the external patent holder might work against the dominant firm's ability to use the patent to anticompetitive ends. That is, perhaps the dominant firm wants an exclusive license in order to prevent rivals from using the technology, while the external patentee prefers to license nonexclusively to both the dominant firm and its rivals. However, this favorable possibility is unlikely. The external patentee's incentives are aligned with industry profits in the downstream (product) market. As a general proposition the value of a monopoly right to the dominant firm will be greater than the aggregate rights of multiple firms that practice the technology in competition.

Suppose that, if the dominant firm owned the patent, it would prefer to deny its product market rivals access to the patented technology. Then it must be that it would earn less money by licensing to them than by excluding them. But this is true only if licensing would reduce the joint profits of itself and its rivals. Thus, if the dominant firm prefers to exclude rivals from using the patented technology, then it must be that such exclusion maximizes total profits in the product market, and it therefore follows that the external patentee's preferred strategy would be to provide an exclusive license. The dominant firm and the external patentee will tend to reach the same conclusions about the most profitable amount of exclusivity.

IV. Enforcement Limits vs. Administrative Oversight

Why use limitations on patent enforcement in order to effectuate what are essentially competition law policies? The usual way to prevent anticompetitive mergers and acquisitions is to rely on administrative oversight and either require pre-approval or else catch them soon after they occur. For example, competing firms who wish to merge must first provide "premerger notification" to one of the antitrust agencies.¹²⁷ Early evaluation enables the relevant agency to challenge a merger before it occurs. Indeed, the Federal Trade Commission has recently begun to require advance notification of qualifying exclusive patent licenses in the pharmaceutical industry.¹²⁸ By contrast, our proposed means of combatting anticompetitive patent acquisitions involves limits on patent enforcement, not a broad expansion of administrative oversight designed to catch such acquisitions before or soon after they occur. This is not to say that it would not be valuable to catch anticompetitive acquisitions at the outset. Rather, this reflects that enforcement limits provide an efficient and more practicable means of addressing the problem.

¹²⁷ 15 U.S.C. § 18a (2000) (The Heart-Scott-Rodino Antitrust Improvements Act).

¹²⁸ See *Pharm. Research & Mfrs. Of Am. v. FTC*, 790 F.3d 198 (D.C. Cir. 2015) (approving requirement that assignments or exclusive licenses in some pharmaceutical patents be reported as asset acquisitions).

As a matter of remedy, mergers of competing firms present different challenges than mergers of competing patents. In an anticompetitive merger between rival firms, the antitrust concern surrounds diminished competition between products, and the volume and terms of product transactions are generally determined *entirely* by factors relating to market structure and demand. Outside of price regulation, which is almost never a realistic or advisable option, there are no external policy levers with which we can avoid the adverse effects of the merger. Consequently, by altering market structure in an adverse way, an anticompetitive merger between firms is likely to injure consumers. The result is generally that the only way to prevent the merger's anticompetitive effects is to prevent it from happening in the first place.

However, things are different in a market for patent rights. Here it is not market forces alone that influence the terms of trade. The courts also play a major role. Expectations about the outcome of litigation form a "threat point" that places an upper bound on the amount a prospective user will pay for a license. The result is that the volume and terms of transactions are distorted by the shadow of litigation. All else being equal, if one patent is likely to be supported by weaker remedies than another patent, then the rights to that first patent will command a lower price. For example, if the Supreme Court establishes a new precedent under which a firm's patent is almost surely invalid, then prospective users may subsequently pay little or nothing for a license, as they know that litigation would clear them of any obligation to pay for the rights. Thus, in stark contrast to a conventional product market, the courts indirectly control prices (license fees) and output (licensing agreements) through their remedial standards.

This provides an alternative channel through which the anticompetitive effects of patent mergers can be avoided. Rather than having to catch anticompetitive patent acquisitions as they arise, it is sufficient simply to weaken enforcement by denying remedies for patents that were acquired in violation of the antitrust laws. As soon as the acquisition occurs, this renders the acquired patent largely impotent. Thus it will not be very effective as a means of excluding one's rivals, for there are no remedies that the acquirer can use as a deterrent. Furthermore, the rivals may use the threat of declaratory judgment litigation (to establish that the acquisition was anticompetitive) to compel a low price of access. For the same reasons, this rule diminishes an NPE's ability to charge supra-competitive fees for an aggregated combination of substitute patents. And, importantly, eliminating a firm's ability to monetize an anticompetitive patent acquisition deters them from making such acquisitions in the first place.

Focusing on the enforcement stage also helps to avoid the monumental administrative costs that would be required to police patent acquisitions as they occur. Not only are patents regularly exchanged in huge numbers—3,500 in the previously noted *Intellectual Ventures* case—but they are also complex documents that require significant experience to interpret. Most have not yet been litigated at the time they are transacted, and thus it is unlikely that they have been made subject to

significant, individualized claim construction.¹²⁹ It may take considerable resources simply to determine whether two patents are substitutes. Further, technology markets are generally harder to delimit than product markets (particularly as an empirical matter), and hence it may be very challenging to determine whether a given combination of substitute patents would provide a dominant position in the relevant technology market. It is thus unrealistic for the antitrust authorities to undertake such complex investigations in all patent acquisitions that may potentially raise an antitrust issue.

On the other hand, the parties to a patent dispute will typically have considerable knowledge about the relevant technology space, and the dispute itself is likely to shed light on how the plaintiff's patent combination is operating in commerce. For example, the defendant may have strong evidence that it has no feasible way of operating in its product market without practicing one of several substitute patents acquired by the plaintiff. Further, claim construction is an inevitable consequence of an infringement suit and can aid in determining the extent to which the infringement plaintiff's patents operate as substitutes. Similarly, the plaintiff's licensing history, if it exists, may shed light on what kinds of applications the patents are being used for. The court can utilize all of this information to make important determinations relating to the antitrust inquiry, such as what the relevant technology market is and whether the plaintiff purchased his way into a dominant position.

For example, it is relatively common for firms to acquire large patent portfolios that subsume many different technologies that perform a wide range of functions. In most cases, the portfolio includes both complements and substitutes, but it may be very challenging to sort out the complements from the substitutes. Thus, rather than going through the portfolio at the outset to determine whether some of the acquired patents raise an antitrust question, it is much simpler to simply wait until such patents are enforced. This avoids the costs of investigating acquired patents that pose no antitrust concerns or that will never be enforced. And to the extent that the portfolio includes some patents that the purchaser should not have been permitted to acquire, the limitation on damages renders them largely benign.

A third way, which has fallen out of popularity, is the judge-made patent "misuse" doctrine, which seems ideally suited for this purpose. While that doctrine is explicitly a creature of patent rather than antitrust law, it historically has been thought of as applying antitrust-like principles to patent practices. Furthermore, in the great majority of cases it is asserted as a defense to an infringement suit, as would be true here.¹³⁰ A court would be asked to hold that an infringement action that threatened competition unnecessarily constitutes "misuse," thereby rendering the patent

¹²⁹ *But cf.* *Nero AG v. MPEG LA, L.L.C.*, 2010 WL 4878835, at *2 (C.D. Cal. Nov. 24, 2010) (licensee of large portfolio complaining that it would be extremely costly to determine which of the thousands of patents it infringed or what their coverage was).

¹³⁰ *See* Bohannon, *supra* note 58; 10 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 1781–82 (3d ed. 2011).

unenforceable under the circumstances. As noted, however, the Federal Circuit has cut back so severely on misuse doctrine that it has become practically defunct.¹³¹ This was very largely in reaction to severe excesses in the twentieth century, and a cutback was clearly justified.¹³² However, a leaner and more focused doctrine of misuse could serve a valuable purpose in cases such as these. The fact that misuse doctrine attaches at the point of an infringement action rather than the patent acquisition itself makes it all the more valuable.

V. Impact on Innovation

How will our proposal affect innovation incentives? That ultimately depends on how it affects competition, which in turn affects private incentives to invent. Because our proposed limitations do not apply in situations where the plaintiff invented the relevant technologies itself, we are principally concerned with the incentives of the original inventors who sell their patents. To that end, one point already mentioned is that an inventor who wishes to sell its patent can generally make the most money by selling its patent to a firm that already dominates the relevant technological market. This reflects that profits are higher when a market is more concentrated, and thus a transaction will tend to be more lucrative to the extent that it promotes market concentration. As such, if an inventor anticipates selling its patent, then it may have a strong interest in being able to sell to a dominant patent holder who is willing to pay a high price for an exclusive right, but our proposed enforcement limitations would prevent this. Thus the reader may be concerned that our proposal will advance anti-trust interests at the expense of patent policy objectives. In particular, won't our proposal diminish the incentive to innovate by limiting the rents that external inventors can get by selling their patents?

The answer is no. It is indeed true that an external inventor could generally get a higher price from a dominant patent holder than from a collection of non-dominant rivals. But this example is inapt; it presupposes a market that is not very competitive, and it focuses on a single transaction within this environment. It then asks how the inventor's payoff changes when enforcement limitations prevent it from selling its patent to the dominant firm at a high price, but in doing so it continues to assume that the market is just as noncompetitive as before. As such, it totally disregards the principal effect of discouraging anticompetitive patent acquisitions, namely that this will make the technology market more competitive.

With respect to the external innovator's incentives, the relevant comparison is between: (1) a noncompetitive market that involves no limits on enforcement; and (2) a relatively competitive market that places some limits on enforcement. The fact that

¹³¹ *Princo Corp. v. ITC*, 616 F.3d 1318, 1330 (Fed. Cir. 2010) (en banc); See also Hovenkamp, *Antitrust and the Patent System: A Reexamination*, *supra* note 10, at 468–73, 561–62.

¹³² See AREHDA & HOVENKAMP, *supra* note 129, at ¶¶ 1781–82.

a patent holder in situation (1) gets the highest price by selling to the dominant firm does not in any way suggest that this price is also higher than the one he would receive in situation (2). That is, a competitive firm in (2) might pay more than the dominant firm in (1).¹³³ Furthermore, it may be that the firms themselves would do more internal innovation when the market is more competitive, as in scenario (2). As these points illustrate, in order to tease out the aggregate impact of enforcement limitations on invention, we must ultimately inquire into the impact of increased competition on innovation incentives.

A leading view in the modern economic literature on innovation—the *inverted U hypothesis*—posits that aggregate innovation in a market is highest when the market is relatively competitive, but not *too* competitive. More specifically, it says that, as a function of market competitiveness, total innovation takes an inverted U shape: beginning at monopoly, innovation initially increases as the degree of competition rises, but eventually innovation reaches a peak beyond which further increases in competition serve to reduce total innovation.¹³⁴ This is illustrated in Figure 1 below.

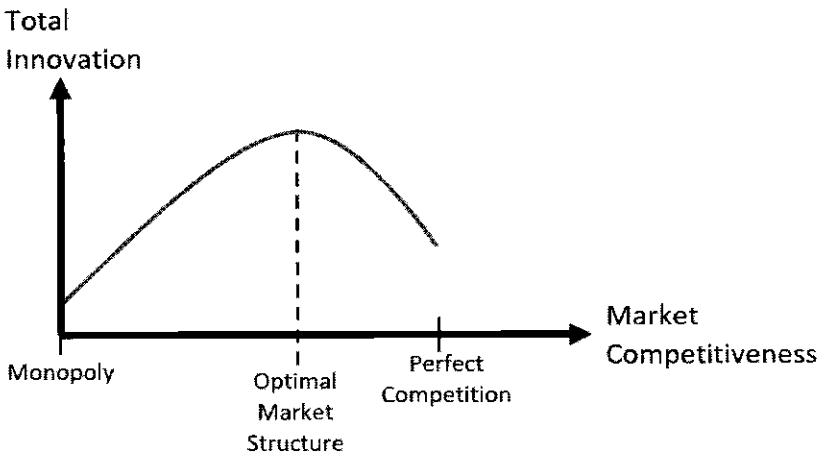


FIGURE 1: THE INVERTED U HYPOTHESIS

The inverted U hypothesis has strong theoretical and empirical support.¹³⁵ Further, the empirical literature tends to suggest that the optimal degree of competition—that corresponding to the peak of the inverted U—is closer to perfect competition

¹³³ Similarly, it could be that several competitive firms in (2) would pay *jointly* more for nonexclusive licenses than the dominant firm in (1) would pay for an exclusive license.

¹³⁴ See Philippe Aghion et al., *Competition and Innovation: An Inverted-U Relationship*, 120 Q. J. ECON. 701, 701–03 (2005) (providing theoretical and empirical support for the inverted U hypothesis).

¹³⁵ See, e.g., *id.*; Ronald L. Goettler & Brett R. Gordon, *Does AMD Spur Intel to Innovate More?*, 119 J. POL. ECON. 1141, 1174 (2011); Patrik G. Tingvall & Andreas Poldahl, *Is There Really an Inverted-U Shaped Relation Between Competition and R&D?*, 15 ECON. OF INNOV. & NEW TECH. 101, 112–13 (2006).

than to monopoly.¹³⁶ For our purposes, the important takeaway is that monopoly power is generally not good for promoting innovation. Rather, there should be a relatively significant degree of competition in order to maximize innovative output within a given technology space.

The inverted U hypothesis suggests that limiting enforcement of certain externally acquired patents will increase total innovative activity, provided that such limits are triggered only by acquisitions that serve to expand or maintain a dominant patent holder's market position in the relevant technology space. Anticompetitive patent acquisitions facilitate monopoly or, at the very least, substantially concentrated (i.e. noncompetitive) markets. Thus, to the extent that such transactions are both possible and permissible, the result will be systematic monopoly over time. That is, the dominant firm will tend to remain as such, and thus the market will remain noncompetitive. But firms would invest more in innovation overall if the market were more competitive. All else being equal, the firms would also spend more in total for external patent rights, implying that independent inventors who sell their patents are indeed better off when the market is somewhat competitive.¹³⁷ As such, limiting enforcement of patents acquired anticompetitively will not only serve antitrust policy interests, but will also promote the patent system's principal objective of facilitating innovation.

VI. Conclusion

Although patent alienability is largely a good thing, in some cases it can be used to anticompetitive ends. Firms may aggregate substitute patents from external sources in order to achieve an unearned monopoly position in the relevant technology space. Analogous anticompetitive acquisitions are regularly condemned in ordinary (non-patent) contexts, but the courts have not yet applied the same logic to patent acquisitions. This paper proposes that damages should be withheld if the litigated patent was obtained in an anticompetitive acquisition, meaning that the assignment served to expand or perpetuate the patent holder's dominant position in the technology market. This prevents patent holders from using such acquisitions to

¹³⁶ See Aghion et al., *supra* note 133, at 706 (showing a graph of the empirically-estimated inverted U relationship, which has the property that total innovation, measured by citation-weighted patents, is maximized when the residual $1-L$ is close to 1, where L the Lerner index, which serves as a metric for market competitiveness); Bohannon & Hovenkamp, *supra* note 114.

¹³⁷ This result follows from the fact that the theoretical models supporting the inverted U focus on the aggregate amount firms are willing to invest in improving their products (which could be accomplished by securing external patent rights, although this is not usually stated explicitly) as the relevant measure of innovative activity. See Aghion et al., *supra* note 133, at 711–15. Thus, all else being equal, firms would be willing to spend a larger total amount for external patents when the market is relatively competitive than when it is monopolized. The intuition is simply that the firms' total "demand for innovation" is highest at an intermediate degree of competition.

anticompetitive ends. By avoiding systematic monopoly in technology markets, such limits on enforcement will also promote patent policy by increasing aggregate innovation.

Patent Damages Without Borders

*Sapna Kumar**

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The presumption against extraterritoriality is a deceptively straightforward principle: that U.S. law applies only inside the United States. But there is confusion regarding whether the presumption applies when a court calculates patent damages. In WesternGeco L.L.C. v. Ion Geophysical Corp., the Federal Circuit held that patent holders who show infringement under § 271(f) of the Patent Act cannot recover foreign lost profits. The court maintained that allowing recovery of such damages would result in the Patent Act applying extraterritorially, which cannot be done without Congress's clear intent. This interpretation severely limits the ability of district courts to make patent infringement victims whole. This Article maintains that the Federal Circuit's reliance on the presumption is misplaced. The presumption was established to prevent U.S. law from applying to extraterritorial conduct; it was not intended to cover situations in which foreign damages flow directly from an act of domestic patent infringement. The presumption has been rebutted under the Supreme Court's two-step extraterritoriality test. By creating this bright-line rule, the Federal Circuit has unduly restricted the ability of patent holders to recover damages, including in cases in which there is no other applicable law. This Article proposes that the Federal Circuit adopt a flexible test that balances prescriptive comity concerns with the United States' interest in making victims of domestic patent infringement whole.

I. Introduction

The presumption against extraterritoriality (“the presumption”) is the principle “that United States law governs domestically but does not rule the world.”¹ In applying this canon of construction, a court will ask whether statutory language “gives any indication of a congressional purpose to extend its coverage beyond places over which the United States has sovereignty or has some measure of legislative control.”² Congress is presumed to legislate against this backdrop and must express affirmative intention to overcome it.³

Under § 271(f) of the Patent Act, Congress has expressly permitted the statute to reach extraterritorially;⁴ the provision generally applies when a party exports components for a patented device with the intent that the components be combined outside the United States.⁵ This allows a party to be held liable for infringement even if they did not make, use, or sell a patented device inside the United States. As with other substantive sections of the Patent Act, the patent holder may seek damages under § 284 that arise from a violation of the provision.⁶ The Supreme Court and the U.S. Court of Appeals for the Federal Circuit (“Federal Circuit”), en banc, have both been clear that limitations should not be read into § 284 absent express Congressional support.⁷

The Federal Circuit, however, is now barring extraterritorial damages under § 271(f).⁸ In *WesternGeco L.L.C. v. Ion Geophysical Corp.*, the court held that a patent holder cannot recover any damages for losses incurred outside the United States,

¹ *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 454 (2007).

² *Equal Employment Opportunity Comm’n v. Arabian American Oil Co.* (hereinafter, *Aramco*), 499 U.S. 244, 248 (1991) (quoting *Foley Bros., Inc. v. Filardo*, 336 U.S. 281, 285 (1949)).

³ *Id.* See also *Benz v. Compania Naviera Hidalgo, S.A.*, 353 U.S. 138, 147 (1957) (holding that for the Court “to run interference in such a delicate field of international relations,” Congress must clearly express affirmative intention).

⁴ See *Microsoft Corp.*, 550 U.S. at 441 (noting that “§ 271(f) is an exception to the general rule that our patent law does not apply extraterritorially”).

⁵ Under § 271(f)(1), the components that are supplied must comprise “all or a substantial portion” of the components of the patented invention so as to induce the combination outside of the United States. See 35 U.S.C. § 271(f)(1) (2010). Under § 271(f)(2), the supplied components must be “especially made or especially adapted” for use in the patented invention and must not “a staple article of commodity or commerce.” See 35 U.S.C. § 271(f)(2).

⁶ See 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”).

⁷ See *General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 653 (1983) (holding that when Congress wishes to limit recovery for patent infringement, it does so explicitly); *Rite-Hite Corp. v. Kelley Co., Inc.*, 56 F.3d 1538, 1545 (Fed. Cir. 1995) (en banc) (observing that “the [Supreme] Court has cautioned against imposing limitations on patent infringement damages”). See also, *infra*, Part IV.C.2.

⁸ *WesternGeco L.L.C. v. Ion Geophysical Corp.*, 791 F.3d 1340, 1351 (Fed. Cir. 2015), *vacated*, 136 S. Ct. 2486 (2016), *opinion reinstated in relevant part*, 837 F.3d 1358, 1361 (Fed. Cir. 2016).

even those that directly flow from a domestic act of infringement under § 271(f).⁹ The court based this decision on the presumption, maintaining that such losses are beyond the reach of U.S. law.¹⁰ The decision to bar damages was notable, given that they arose from service contracts performed on the high seas, where no country's law directly applies.¹¹ Furthermore, although the court's final decision did not issue until late 2016, the Federal Circuit disregarded the Supreme Court's 2016 decision *RJR Nabisco, Inc. v. European Community*, in which the Court provided a new two-step framework for analyzing whether a statute applies extraterritorially.¹²

In an attempt to not apply U.S. patent law to foreign acts, the Federal Circuit has overextended the presumption. The Supreme Court has never directly applied the presumption to a purely remedial provision in which Congress expressly overcame the presumption for the relevant substantive provision. Moreover, even if the presumption is applicable, a strong argument can be made that it has been rebutted.¹³ By creating a bright-line rule, the Federal Circuit has unduly restricted the ability of patent holders to recover damages under § 271(f), even in cases in which no other country has territorial jurisdiction.

This Article argues that the Federal Circuit has erred in using the presumption to block all extraterritorial damages. Part II introduces the presumption and discusses justifications for it, including prescriptive comity and congressional intent. It explains how the presumption has been applied in patent law and discusses the Federal Circuit's use of the presumption for damages cases. Part III examines how the presumption has been applied in copyright and trademark law. It discusses how the Supreme Court has permitted the extraterritorial application of trademark law and observes that several courts of appeal have extraterritorially applied the Copyright Act through the predicate act doctrine.

Part IV maintains that the Federal Circuit has misinterpreted Supreme Court precedent regarding the presumption. It argues that under the *RJR Nabisco* test, the presumption has been rebutted due to the relevant conduct occurring inside the United States. Part IV suggests that the court adopt a test that balances comity concerns with

⁹ *Id.* at 1351.

¹⁰ *See id.* at 1352.

¹¹ *Id.* at 1349 (observing that the service contracts at issue “were all to be performed on the high seas, outside the jurisdictional reach of U.S. patent law”). In his dissent-in-part, Judge Wallach observed that on the high seas, “it may be that no country’s patent laws reach the conduct occurring in international waters absent a provision such as § 271(f).” *Id.* at 1360–61.

¹² 136 S. Ct. 2090, 2101 (2016) (discussing the two-step framework). *See also infra*, Part II.A.2 (discussing *RJR Nabisco*). Although the original *WesternGeco* decision was handed down in 2015, that decision was vacated and remanded by the Supreme Court in 2016. *WesternGeco L.L.C.*, 136 S. Ct. 2486 (2016).

¹³ *See* Part IV.B.

the government's interests in making patent holders whole and promoting innovation. Part V concludes.

II. Extraterritoriality in Patent Law

The presumption against extraterritoriality is a canon of construction that applies not just to the Patent Act, but to all statutes. It plays an important role in maintaining harmony with foreign nations and helps courts respect Congress's intent. With the rise of globalization, extraterritoriality concerns have been arising with greater frequency in patent law, especially with regard to patent damages.¹⁴

This Part provides an overview of the extraterritorial limitations that affect the reach of the Patent Act. Section A briefly discusses the history of the presumption and discusses the current test for determining whether a U.S. statute applies to extraterritorial conduct. Section B examines the justifications for the presumption. Section C then discusses how the presumption has been applied by the Supreme Court in patent infringement cases. Finally, Section D discusses how the presumption has been applied by the Federal Circuit to patent damages cases.

A. Introduction to the Presumption Against Extraterritoriality

Congress's ability to pass laws that regulate extraterritorial conduct is somewhat limited under the customary law of international jurisdiction. With regard to activities inside the United States, Congress may prescribe laws with respect to (1) "conduct that, wholly or in substantial part, takes place within its territory," (2) "the status of persons, or interests in things present within its territory," and (3) "conduct outside its territory that has or is intended to have substantial effect within its territory."¹⁵ Congress also has limited non-territorial jurisdiction. It may prescribe law for its own nationals outside the United States,¹⁶ as well as for conduct of non-nationals who threaten U.S. national security.¹⁷

¹⁴ See, e.g., *Power Integrations v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1371 (Fed. Cir. 2013) (holding extraterritorial lost profits cannot be awarded from a § 271(a) violation); *Carnegie Mellon University v. Marvell Technology Group, Ltd.*, 807 F.3d 1283, 1291 (Fed. Cir. 2015) (holding that foreign sales cannot be used to measure a reasonable royalty for a § 271(a) violation).

¹⁵ RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES, § 402(1) (1986). See also, Jeffrey A. Meyer, *Dual Illegality and Geoambiguous Law: A New Rule for Extraterritorial Application of U.S. Law*, 95 MINN. L. REV. 110, 143–44 (2010) (discussing the scope of the Restatement).

¹⁶ *Id.* § 402(2). This principal goes back to at least the early 1800s. See *The Apollon*, 22 U.S. 362, 370 (1824) (holding "[t]he laws of no nation can justly extend beyond its own territories, except so far as regards its own citizens."); *Rose v. Himely*, 8 U.S. 241, 279 (1808) (noting "that the legislation of every country is territorial; that beyond its own territory, it can only affect its own subjects or citizens").

¹⁷ *Id.* § 402(3).

Beyond the confines of international law, Congress has leeway in making U.S. law reach extraterritorial conduct. However, over the past three decades, the Supreme Court has taken an increasingly aggressive approach to limiting extraterritorial applications of statutes, forcing Congress to speak with increased clarity.

1. The Early Presumption

The precursor to the presumption is the *Charming Betsy* canon of construction. In the 1804 decision *Murray v. The Schooner Charming Betsy*, the Supreme Court noted “that an act of Congress ought never to be construed to violate the law of nations if any other possible construction remains.”¹⁸ As Professor Curtis Bradley noted, courts invoked the *Charming Betsy* canon to construe ambiguous statutes as not having extraterritorial reach, giving rise to the presumption.¹⁹

From the 1800s through the late 1940s, the Supreme Court developed the presumption to determine whether Congress intended to exercise extraterritorial prescriptive jurisdiction. In the early 1800s, the presumption was used primarily to limit the reach of U.S. laws to foreign ships.²⁰ For example, in the 1824 case *The Apollon*, the Court declined to apply U.S. customs law to a French ship that temporarily entered a U.S. port en route to Spanish territory.²¹

In the 1909 decision *American Banana Co. v. United Fruit Co.*, the Court applied the presumption to the Sherman Act. In that case, the plaintiff was harmed through acts that occurred in Panama and Costa Rica. Justice Holmes, writing for the unanimous Court, held that because the acts occurred outside the United States, U.S. law did not apply. He observed that “the general and almost universal rule is that the character of an act as lawful or unlawful must be determined wholly by the law of the country where the act is done.”²²

The early presumption was narrow. In the 1818 case *U.S. v. Palmer*, the Court noted that the “only question” in determining whether a statute applies extraterritorially is to ask whether the statutory text authorizes courts to inflict penalties on non-

¹⁸ 6 U.S. 64, 118. *See also*, RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS OF LAW OF THE UNITED STATES, § 114 (AM. LAW INST. 1987) (articulating the *Charming Betsy* canon as where possible, “a United States statute is to be construed so as not to conflict with international law or with an international agreement of the United States”).

¹⁹ Curtis A. Bradley, *The Charming Betsy Canon and Separation of Powers: Rethinking the Interpretive Role of International Law*, 86 GEO. L.J. 479, 489–90 (1998).

²⁰ *See* *United States v. Palmer*, 16 U.S. 610, 630 (1818) (holding that a federal piracy statute did not apply to a robbery committed by a foreign citizen on a foreign ship in international waters). *See also*, William S. Dodge, *Understanding the Presumption Against Extraterritoriality*, 16 BERKELEY J. INT’L L. 85, 86 (2008) (discussing the history of the presumption).

²¹ *The Apollon*, 22 U.S. at 370.

²² 213 U.S. 347, 356.

citizens.²³ In *American Banana*, the Court emphasized that in areas with no sovereign, such as the high seas, “such countries may treat some relations between their citizens as governed by their own law.”²⁴ The doctrine then went mostly dormant,²⁵ with the Court expansively applying several statutes extraterritorially.²⁶

2. The Presumption’s Revival and Expansion

Beginning the 1990s, the Rehnquist Court revived the presumption and aggressively expanded its reach.²⁷ In *EEOC v. Arabian American Oil Co. (Aramco)*, a U.S. citizen sued Delaware-incorporated Aramco under Title VII, arguing that he was unlawfully fired while working in Saudi Arabia.²⁸ The Court stated that it “assume[s] that Congress legislates against the backdrop of the presumption against extraterritoriality” and described it as “a longstanding principle of American law.”²⁹ The Court concluded that because Congress did not express intent for the statute to apply abroad,

²³ *Palmer*, 16 U.S. at 630–31.

²⁴ *American Banana*, 213 U.S. 355–56. See also, Curtis A. Bradley, INTERNATIONAL LAW IN THE U.S. LEGAL SYSTEM 179 (2d ed. 2015) (discussing how the presumption allowed U.S. law to extend to the conduct of U.S. citizens outside the country). Note that this view is consistent with prescriptive jurisdiction. See Meyer, *supra* note 15 at 143–44 (discussing the scope of customary law of international jurisdiction). The Restatement (Third) of Foreign Relations recognizes four categories in which a State has jurisdiction to prescribe law, including “the activities, interests, status, or relations of its nationals outside as well as within its territory.” See RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW OF THE UNITED STATES, § 402.

²⁵ See Maggie Gardner, *RJR Nabisco and the Runaway Canon*, 102 VA. L. REV. ONLINE 134, 136 (2016) (noting the doctrine’s dormancy from 1949 to 1991 and observing that the presumption does not appear in the Restatement (Third) of Foreign Relations Law); William S. Dodge, *The Presumption Against Extraterritoriality in Two Steps*, 110 AM. J. INT’L L. UNBOUND 45, 45 (2016) (noting that absent a brief mention in 1989, the Supreme Court did not apply the presumption to determine a federal statute’s geographic scope between 1949 and 1991).

Note, however, that during this time period, there were cases in which the Supreme Court declined to apply U.S. statutes extraterritorially using other doctrines, such as the maritime law of the flag doctrine. See *McCullough v. Sociedad Nacional de Marineros de Honduras*, 372 U.S. 10, 21 (1963) (holding that under the law of the flag and the Charming Betsy canon, the jurisdictional provisions of the National Labor Relations Act do not apply to foreign flagged ships employing foreign seamen).

²⁶ See, e.g., *F. Hoffman-La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 165 (2004) (applying the Sherman Act to foreign conduct) (emphasis in original); *Steele v. Bulova Watch Co.*, 344 U.S. 280, 285 (1952) (applying the Lanham Act to conduct of a U.S. citizen in Mexico).

²⁷ See Gardner, *supra* note 25 at 136 (discussing how the Rehnquist and Roberts Courts used the presumption to “curb[] the scope of transnational litigation in U.S. courts”); Pamela K. Bookman, *Litigation Isolationism*, 67 STAN. L. REV. 1081, 1098–99 (2015) (observing that judges use the presumption as a “means of avoiding transnational litigation in U.S. courts”); John H. Knox, *A Presumption Against Extrajurisdictionality*, 104 AM. J. INT’L L. 351, 374 (2010) (arguing that the Rehnquist court merged the presumption against extraterritoriality with the stricter presumption against extrajurisdictionality—the presumption that federal law does not extend beyond the jurisdictional limits set by international law).

²⁸ 499 U.S. 244, 247 (1991).

²⁹ *Id.* at 248.

Title VII did not apply abroad.³⁰ The Court failed to address why Congress would have legislated against the background of a doctrine that had been dormant for 43 years.³¹

The Rehnquist Court expanded the presumption's scope in *Smith v. United States*.³² In this case, the widow of a U.S. contractor killed in Antarctica attempted to sue under the Federal Tort Claims Act (FTCA), which waives federal sovereign immunity for some tort suits. Because the FTCA does not apply to claims that arise "in a foreign country," the plaintiff argued that Antarctica is not a foreign country.³³ Nevertheless, the Court found the presumption to be applicable, noting that "any lingering doubt" regarding the law's reach should "be resolved against its encompassing torts committed in Antarctica."³⁴ It reiterated that U.S. law only applies "within the territorial jurisdiction of the United States," notwithstanding the fact that no other country's law applied.³⁵

In *Kiobel v. Royal Dutch Petroleum*, the Roberts Court further broadened the presumption.³⁶ Previously, the Court had found the presumption to apply only to substantive statutes.³⁷ The *Kiobel* Court found, however, that "the principles underlying the canon of interpretation similarly constrain courts considering causes of action."³⁸ It consequently concluded that the Alien Tort Statute did not apply to violations of the law of nations that occurred outside the United States.³⁹

The most dramatic alteration to the presumption was introduced in the Court's 2016 decision, *RJR Nabisco, Inc. v. European Community*.⁴⁰ The Court considered whether the substantive provisions of the Racketeer Influenced and Corrupt Organizations Act (RICO) applied extraterritorially and whether RICO created a cause of action for foreign plaintiffs. The *RJR Nabisco* Court clarified that a two-step

³⁰ *Id.* at 257–60.

³¹ The Court maintained that Congress had "awareness of the need to make a clear statement that a statute applies" based on several statutes in which Congress was explicit about extraterritorial reach, *Id.* at 258, but it is unclear whether Congress *knew* it was required to make such statement.

³² 507 U.S. 197 (1993).

³³ *Id.* at 201.

³⁴ *Id.* at 203–04.

³⁵ *Id.* at 204 (quotation marks omitted).

³⁶ 133 S. Ct. 1659 (2013).

³⁷ The *Kiobel* Court claimed that it "typically" applies the presumption to statutes that regulate foreign conduct, but there do not appear to be any cases prior to *Kiobel* in which the Court applied the presumption to a non-substantive provision. The *Kiobel* Court cited to its earlier decision *McCullough v. Sociedad Nacional del Marineros de Honduras*, in which it declined to extend jurisdictional provisions of the National Labor Relations Act to foreign seaman on foreign-flagged ships. *Id.* at 1672. However, *McCullough* was decided under the law of the flag and applied the Charming Betsy canon and not the presumption. *McCullough*, 372 U.S. at 20–22.

³⁸ *Kiobel*, 133 S. Ct. at 1665.

³⁹ *Id.* at 1669.

⁴⁰ 136 S. Ct. 2090.

framework applies for analyzing extraterritoriality cases.⁴¹ Under step one, a court asks “whether the statute gives a clear, affirmative indication that it applies extraterritorially.”⁴² If Congress clearly intended for a statute to apply extraterritorially, then the presumption has been rebutted and the court may apply the statute to foreign activity. If the statute fails step one, the court moves to step two and determines “whether the case involves a domestic application of the statute” by looking at the statute’s focus.⁴³

There were two major changes under the *RJR Nabisco* Court’s approach. First, the unanimous Court noted that a court must apply step one “regardless of whether the statute in question regulates conduct, *affords relief*, or merely confers jurisdiction.”⁴⁴ One of the provisions at issue in the case was § 1964(c) of RICO, which allows “[a]ny person injured in his business or property by reason of a violation of section 1962’ to sue for treble damages, costs, and attorney’s fees.”⁴⁵ This provision is part jurisdictional, in that it provides a cause of action to plaintiffs. But it is also part remedial, because it allows such plaintiffs to be awarded treble damages. Although the Court’s statement regarding provisions that only afford relief was dicta, it suggests that the presumption might apply to § 284 of the Patent Act.

Second, the Court held 4-3 that the presumption can apply more than once to the same statute. After seven Justices of the Court found that Congress intended for substantive § 1962 of RICO to apply extraterritorially, a four-Justice majority held that the presumption had to be applied for a second time to the jurisdictional provision granting a private right of action.⁴⁶ Notwithstanding § 1964(c)’s broad language, the Court maintained that Congress did not overcome the presumption, and that § 1964 was limited to plaintiffs alleging domestic injury.⁴⁷ Under the four-Justice approach,

⁴¹ *Id.* at 2101. This two-step framework formalizes the approach taken by the Supreme Court in *Morrison v. National Australia Bank, Ltd.*, 561 U.S. 247, 265 (2010). *See also*, Lea Brilmayer, *New Extraterritoriality: Morrison v. National Australia Bank, Legislative Supremacy, and the Presumption Against Extraterritorial Application of American Law*, 40 SW. L. REV. 655, 663 (2011) (discussing the two-step approach that emerged from *Morrison*).

⁴² *RJR Nabisco, Inc.* 136 S. Ct. at 2101.

⁴³ *Id.* Note that step two is consistent with the Supreme Court’s earlier cases applying the Sherman Act and Lanham Act extraterritorially. In *Aramco*, the Court justified the extraterritorial application of the Lanham Act on two grounds: that (1) the alleged extraterritorial conduct “had some effects within the United States” and (2) the Lanham Act applies to “all commerce which may lawfully be regulated by Congress.” *Aramco*, 499 U.S. at 252. Similarly, the Sherman Act applies only to foreign conduct that has a domestic effect. *F. Hoffman-La Roche Ltd.*, 542 U.S. at 165 (observing that “courts have long held that application of our antitrust laws to foreign anticompetitive conduct. . . insofar as they reflect a legislative effort to redress *domestic* antitrust injury that foreign anticompetitive conduct has caused”). Consequently, *RJR Nabisco* could be viewed as an attempt by the Supreme Court to reconcile past cases that had appeared to conflict.

⁴⁴ *RJR Nabisco, Inc.* 136 S. Ct. at 2100 (emphasis added).

⁴⁵ *Id.* at 2106 (quoting 18 U.S.C. 1964(c)).

⁴⁶ *Id.* Only seven Justices took part in the consideration of this case because Justice Scalia’s seat was vacant and Justice Sotomayor was recused.

⁴⁷ *Id.* at 2106.

even if Congress clearly intended for § 271(f) to reach foreign conduct, the presumption would need to be applied again to § 284.⁴⁸

B. Policy Considerations

Although the presumption was originally about discerning Congress's intent,⁴⁹ it has strayed from these roots. Scholars have observed how the Supreme Court uses it to discount Congress's objectives and engage in judicial policymaking.⁵⁰ Several policy justifications underlie the modern presumption. Some relate to international concerns, such as respecting the laws of foreign countries and avoiding conflicts with them. Others are more domestic in nature, such as maintaining separation of powers.⁵¹

1. International Law and Prescriptive Comity

The presumption is heavily grounded in international law and the principle of prescriptive comity. Although comity is difficult to define,⁵² an early Supreme Court decision described it as "the recognition which one nation allows within its territory to the legislative, executive or judicial acts of another nation, having due regard both to international duty and convenience, and to the rights of its own citizens or of other persons who are under the protection of its laws."⁵³ The Supreme Court applies the presumption when it "construes ambiguous statutes to avoid unreasonable interference with the sovereign authority of other nations."⁵⁴ The Court is "unwilling to

⁴⁸ Note that it is unclear what kind of precedential effect a four-Justice majority decision has. See Part IV.A.2.

⁴⁹ See *supra*, Part I.A.1.

⁵⁰ See Brilmayer, *supra* note 41 at 664 (maintaining that the Supreme Court's approach has "increased the opportunity for judicial policy making and diminished the importance of congressional preferences").

⁵¹ For a broader look at justifications for the presumption, see Curtis A. Bradley, *Territorial Intellectual Property Rights in the Age of Globalism*, 37 VA. J. INT'L L. 505, 513-16 (1997) (discussing the reasons for the presumption) (hereinafter, "*Territorial IP Rights*").

⁵² See *JP Morgan Chase Bank v. Altos Hornos de Mexico, S.A. de C.V.*, 412 F.3d 418, 423 (2d Cir. 2005) (quoting Harold G. Maier, *Extraterritorial Jurisdiction at a Crossroads: An Intersection Between Public and Private International Law*, 76 AM. J. INT'L L. 280, 281 (1982)) ("The doctrine has never been well-defined, leading one scholar to pronounce it 'an amorphous never-never land whose borders are marked by fuzzy lines of politics, courtesy, and good faith.'").

⁵³ *Hilton v. Guyot*, 159 U.S. 113, 164 (1895). This article uses the term "prescriptive comity" to distinguish from "comity of the courts," under which "judges decline to exercise jurisdiction over matters more appropriately adjudged elsewhere." *Hartford Fire Ins. Co. v. California*, 509 U.S. 764, 817 (1993) (Scalia, J., dissenting). See also Joseph Story, COMMENTARIES ON THE CONFLICT OF LAWS, FOREIGN AND DOMESTIC § 38 (1834) (distinguishing between the "comity of the courts" and the "comity of nations").

⁵⁴ *F. Hoffman-La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 164-165 (2004) (discussing *Hartford Fire Co.*, 509 U.S. at 817 (Scalia, J., dissenting)).

Although the presumption is strongly grounded in comity considerations, it is important to note that it does not prevent all foreign conflicts. The Restatement (Third) of the Foreign Relations of Law of the United States recognizes not just territorial bases for prescriptive jurisdiction, but also non-territorial ones such as nationality. See RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS OF

ascribe to Congress a policy which would raise difficult international law issues” by imposing U.S. law “upon foreign corporations operating in foreign commerce.”⁵⁵ Consequently, the presumption “helps the potentially conflicting laws of different nations work together in harmony” which the Court claims is “particularly needed in today’s highly interdependent commercial world.”⁵⁶

Comity concerns arose in *Morrison v. National Australia Bank Ltd.*, in which the Supreme Court held that the Securities and Exchange Act does not apply to foreign investment deals that have a domestic impact.⁵⁷ In that case, a group of Australian citizens sued both National Australian Bank Limited (National) and Florida-based HomeSide Lending for securities fraud.⁵⁸ The petitioners held National stock, which was listed on the New York Stock Exchange, but not traded in the United States. The companies made a series of deceptive statements in Australia, and National issued several write-downs.⁵⁹

The conservative majority held that the presumption applied, notwithstanding the fact that HomeSide engaged in deceptive conduct in Florida. The Court found that the focus of the Exchange Act “is not upon the place where the deception originated, but upon purchases and sales of securities in the United States.”⁶⁰ It observed that the risk of conflict with foreign laws was so high that Congress would have been clear if it intended for the Exchange Act to apply to foreign conduct.⁶¹ It noted that other countries differ with regard to “what constitutes fraud, what disclosures must be made, what damages are recoverable, what discovery is available in litigation, what

LAW OF THE UNITED STATES, § 402 (AM. LAW INST. 1987). A conflict could thus arise if one country exercises territorial jurisdiction while another exercises nationality jurisdiction. See Zachary D. Clopton, *Replacing the Presumption Against Extraterritoriality*, 94 B.U. L. REV. 1, 12 (2014) (observing that a U.S. court applying U.S. law territorially could still cause a conflict if “one party is a foreign national and her state has exercised nationality jurisdiction”).

⁵⁵ *Aramco*, 499 U.S. at 245. See also *Kiobel*, 133 S. Ct. at 1664 (discussing “the danger of unwarranted judicial interference in the conduct of foreign policy” with regard to the extraterritorial application of the Alien Tort Statute).

⁵⁶ *F. Hoffman-La Roche Ltd.*, 542 U.S. at 164–65. See also *Aramco*, 499 U.S. at 248 (noting that the presumption “serves to protect against unintended clashes between our laws and those of other nations which could result in international discord”).

⁵⁷ 561 U.S. 247 (2010). See also, Zachary D. Clopton, *Bowman Lives: The Extraterritorial Application of U.S. Criminal Law After Morrison v. National Australia Bank*, 67 N.Y.U. ANN. SURV. AM. L. 137 (2011) (noting how the Roberts Court made it harder for plaintiffs to establish U.S. connections needed to avoid the presumption’s application).

⁵⁸ *Morrison*, 561 U.S. at 251.

⁵⁹ *Id.* at 252.

⁶⁰ *Id.* at 266.

⁶¹ *Id.* at 269. Note that if Congress explicitly states that a statute applies extraterritorially, a court need not examine the statute’s focus. *RJR Nabisco, Inc.*, 136 S. Ct. at 2103.

individual actions may be joined in a single suit, what attorney's fees are recoverable, and many other matters."⁶²

In *RJR Nabisco*, the conservative four-Justice majority expressed similar comity concerns in allowing RICO's private right of action to apply extraterritorially. It noted that "[a]llowing recovery for foreign injuries in a civil RICO action, including treble damages, presents the same danger of international friction" that was seen in *Morrison*.⁶³ Although the Court acknowledged that such friction would not happen in every case, it maintained that the mere "potential for international controversy [] militates against recognizing foreign-injury claims without clear direction from Congress."⁶⁴

Justice Ginsburg, joined by Justices Breyer and Kagan, dissented in part and took a more skeptical view.⁶⁵ She described the purpose of the presumption as being much more modest—helping “to distinguish instances in which Congress consciously designed a statute to reach beyond U.S. borders,” and observed that due process constraints and the doctrine of *forum non conveniens* were more appropriate for blocking litigation in U.S. courts that should be brought elsewhere.⁶⁶ She maintained that the majority's narrow interpretation was contrary to Congress's intent and created a double standard that “might spark, rather than quell, international strife.”⁶⁷

Overall, it is clear that the conservative justices have used comity concerns to force Congress to be crystal clear when it wishes to apply U.S. laws abroad. This approach has caused some scholars to question whether the burden on Congress has become too onerous.⁶⁸

2. Congressional Intent and Focus

Congressional intent and focus still serve as a basis for the presumption. The Supreme Court has observed that the presumption applies unless Congress expresses a contrary intent,⁶⁹ and has further noted that “[w]hen a statute gives no clear indication of an extraterritorial application, it has none.”⁷⁰ Congress, in other words, should

⁶² *Morrison*, 561 U.S. at 269. These differences were highlighted in the amicus briefs filed by several countries and foreign organizations, all of which complained about foreign interference with foreign securities regulation.

⁶³ *RJR Nabisco, Inc.*, 136 S. Ct. at 2107.

⁶⁴ *Id.*

⁶⁵ *Id.* at 2112.

⁶⁶ *Id.* at 2112, 2115.

⁶⁷ *Id.* at 2115–16.

⁶⁸ See Gardner, *supra* note 25 at 141 (arguing that *RJR Nabisco* has made it harder for Congress to rebut the presumption); Brilmayer, *supra* note 41 at 664 (“*Morrison* makes it more difficult than before to base the result on what Congress wanted and easier than before to base the decision on undeniably judge-made concepts.”).

⁶⁹ *Aramco*, 499 U.S. at 248.

⁷⁰ See *RJR Nabisco, Inc.*, 136 S. Ct. at 2100 (observing that the presumption applies “‘regardless of whether there is a risk of conflict between the American statute and a foreign law’”) (quoting

have the final say in determining whether a statute has “coverage beyond places over which the United States has sovereignty or has some measure of legislative control.”⁷¹ This canon provides “a stable background against which Congress can legislate with predictable effects.”⁷² If Congress is silent, courts should not speculate about whether Congress would have wanted the statute to apply to the case at issue.⁷³

The Supreme Court generally assumes that Congress is focused on territorial concerns. The Court has observed that the presumption is rooted in “the commonsense notion that Congress generally legislates with domestic concerns in mind.”⁷⁴ Consequently, the presumption is applicable even if no foreign law applies.⁷⁵ For example, in *Smith*, the Court declined to apply the FTCA to conduct occurring in Antarctica, even though no country’s law applies there.⁷⁶

3. Separation of Powers

The final major basis for the presumption is separation of powers. Since the early 1800s, the Supreme Court has acknowledged that “delicate and difficult” decisions must be made regarding “the rights of a part of a foreign empire.”⁷⁷ The early Court observed that such questions of foreign policy tend to be political, rather than legal in nature, and maintained that such decisions do not belong to the courts.⁷⁸

The Rehnquist Court reiterated separation of powers as a basis for the presumption. In *Sale v. Haitian Centers Council, Inc.*, President George H.W. Bush directed the Coast Guard to seize fleeing Haitians at sea and return them without determining whether they qualify as refugees.⁷⁹ The Supreme Court held that a statute prohibiting deportations in certain cases did not apply to actions taken by Coast Guard officials,

Morrison, 561 U.S. at 255). *See also*, *Smith v. United States*, 507 U.S. 197, 204 (1993) (observing the Court will presume Congress’s legislation applies only inside the United States, unless Congress states otherwise).

⁷¹ *Aramco*, 499 U.S. at 248.

⁷² *Morrison*, 561 U.S. at 261.

⁷³ *Id.* (“The results of judicial-speculation-made-law—divining what Congress would have wanted if it had thought of the situation before the court—demonstrate the wisdom of the presumption against extraterritoriality. Rather than guess anew in each case, we apply the presumption in all cases.”).

⁷⁴ *Smith*, 507 U.S. at 204 n.5 (1993). *See also* *Foley Bros.*, 336 U.S. at 285 (noting the presumption “is based on the assumption that Congress is primarily concerned with domestic conditions”). Although this assumption has been reiterated by the Court several times, it is unclear where it comes from. *See* Clopton, *Replacing the Presumption*, *supra* note 54 at 13 (criticizing the Court’s unsupported assumption that Congress’s intent is territorial).

⁷⁵ *RJR Nabisco, Inc.*, 136 S. Ct. at 2100 (quotation marks omitted).

⁷⁶ *Smith*, 507 U.S. at 206–7.

⁷⁷ *See* *Palmer*, 16 U.S. at 634 (1818) (observing that such political questions “belong more properly to those who can declare what the law shall be; who can place the nation in such a position with respect to foreign powers as to their own judgment shall appear wise; to whom are entrusted all its foreign relations”).

⁷⁸ *Id.*

⁷⁹ 509 U.S. 155, 158 (1993).

relying in part on the presumption.⁸⁰ It maintained that the “presumption has special force when we are construing treaty and statutory provisions that may involve foreign and military affairs for which the President has unique responsibility,” and concluded that no judicial remedy existed.⁸¹ Likewise, in *Aramco*, the Court observed that Congress has the ability “calibrate its provisions” in a way that that courts cannot.⁸²

Scholars are mixed on the use of separation of powers to justify the presumption. Some have noted that the *Aramco* Court recognized its limited ability to make nuanced foreign relations judgments compared to Congress,⁸³ and forced Congress to focus on the problems that can arise through the extraterritorial application of U.S. law.⁸⁴ Others have accused the Supreme Court of interfering with the balance of power between Congress and the executive branch.⁸⁵ For example, Professor John Knox has observed that using the presumption to prevent U.S. law from applying to ships and bases under U.S. jurisdiction threatens separation of powers, by allowing the President to shift unlawful activities to such places.⁸⁶

C. Extraterritoriality in Substantive Patent Law

Infringement of a U.S. patent has been traditionally limited to activities performed wholly inside the United States. For example, in 1856, the Supreme Court declined to apply the Patent Act to an infringing Dutch ship that entered a U.S. port.⁸⁷ The Court maintained that the Patent Act’s powers are “domestic in its character, and

⁸⁰ *Id.* at 173–74.

⁸¹ *Id.* at 188.

⁸² *Aramco*, 499 U.S. at 259.

⁸³ See Jack L. Goldsmith, *Federal Courts, Foreign Affairs, and Federalism*, 83 VA. L. REV. 1617, 1701 (1997) (observing that the *Aramco* Court “recognized its relative incompetence to make fine-grained foreign relations judgments, and it conceived its proper role to be one of encouraging the political branches to embody such judgments in federal legislation”); Bradley, *Territorial IP Rights*, *supra* note 51 at 553 (noting that Congress ultimately legislatively overruled *Aramco* by statute, and in doing so, “answered some of the difficult questions that had concerned the Court”); Mark P. Gibney, *The Extraterritorial Application of U.S. Law: The Perversion of Democratic Governance, the Reversal of Institutional Roles, and the Imperative of Establishing Normative Principles*, 19 B.C. INT’L. & COMP. L. REV. 297, 310 (1996) (observing that the mandate of *Aramco* is political branches “taking on the lion’s share in determining when, and explaining why, U.S. law should or should not be applied extraterritorially”).

⁸⁴ Bradley, *Territorial IP Rights*, *supra* note 51 at 553 (maintaining that the presumption has rightfully forced Congress “to focus specifically on the political problems and uncertainties raised by extraterritoriality”).

⁸⁵ See Clopton, *Replacing the Presumption*, *supra* note 54 at 17 (arguing that “judges repeatedly have ignored the views of the executive branch in favor of the presumption against extraterritoriality”); Knox, *supra* note 27 at 387 (noting the *Sale* Court “seems to assume that the freedom of the executive branch to conduct foreign policy must be protected from undue interference by Congress” and noting that the lines of authority between the two branches “are often too blurry to be suitable for judicial policing”).

⁸⁶ Knox, *supra* note 27 at 388.

⁸⁷ *Brown v. Duchesne*, 60 U.S. 183, 198.

necessarily confined within the limits of the United States.”⁸⁸ Since that time, however, the line separating domestic versus foreign infringement has become quite fuzzy.

1. § 271(a)

Section 271(a) is the primary infringement provision of the Patent Act and is clearly territorial.⁸⁹ The language of the provision emphasizes liability for one who, without authority, “makes, uses, offers to sell, or sells any patented invention, *within the United States*, or imports *into the United States*” a patented invention.⁹⁰

The Supreme Court has held that Congress clearly intended infringement under § 271(a) to be limited to domestic activity. In *DeepSouth Packing Co. v. Laitram Corp.*, the patent holder for a shrimp deveining machine sued DeepSouth, which was manufacturing and exporting modules for the complete machine to be easily assembled and used abroad.⁹¹ The Court observed that the “patent system makes no claim to extraterritorial effect” and that “these acts of Congress do not, and were not intended to, operate beyond the limits of the United States.”⁹² The Court maintained that Congress intends inventors seeking foreign protection to obtain foreign patents.⁹³ DeepSouth escaped liability because it did not make, use, or sell the assembled machine in the United States.⁹⁴

In *NTP v. Research in Motion, Ltd.*, the Federal Circuit considered the scope of infringement under § 271(a) for infringing activity that crossed borders.⁹⁵ Research In Motion’s (RIM’s) Blackberry pager system allowed people to send and receive e-mails on hand-held devices using a wireless network.⁹⁶ Messages sent by a user from the handheld device were relayed through RIM’s servers in Canada to their final destination.⁹⁷ NTP asserted several patents against RIM, including both method and system claims.⁹⁸ The methods asserted to be infringing were carried out partly in the

⁸⁸ *Id.*

⁸⁹ See Timothy R. Holbrook, *Boundaries, Extraterritoriality, and Patent Infringement Damages*, 92 NOTRE DAME L. REV. (forthcoming 2017), available at <https://ssrn.com/abstract=2885009> (maintaining that the territorial limits of § 271(a) make it appropriate to reject extraterritorial damages); Bernard Chao, *Reconciling Domestic and Foreign Infringement*, 80 UMKC L. REV. 607, 610–11 (2012) (discussing the territorial limitations under § 271(a)).

⁹⁰ 35 U.S.C. § 271(a) (emphasis added). See also, Cameron Hutchison & Moin A. Yahya, *Infringement & the International Reach of U.S. Patent Law*, 17 FED. CIR. B.J. 241, 244–45 (2008) (discussing the territorial limitations of § 271(a) of the Patent Act).

⁹¹ 406 U.S. 518 (1972).

⁹² *Id.* at 531 (quoting *Brown* 60 U.S. at 195).

⁹³ *Id.*

⁹⁴ *Id.* at 527–28.

⁹⁵ *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1291 (Fed. Cir. 2005).

⁹⁶ *Id.* at 1289.

⁹⁷ *Id.* at 1290.

⁹⁸ *Id.*

United States and partly in Canada; the claimed systems were only partly located in the United States.⁹⁹

The Federal Circuit noted that unlike *DeepSouth*, in which the patented invention was neither assembled nor used in the country, the Blackberry system was partially domestic and involved acts of crossing borders. The court found infringement for the system claims, holding that under § 271(a), “use” of the system occurs in “the place at which the system as a whole is put into service, i.e., the place where control of the system is exercised and beneficial use of the system obtained.”¹⁰⁰ The court maintained that when RIM’s U.S. customers sent and received messages, use occurred in the United States.¹⁰¹ Thus, the Federal Circuit distinguished infringing activity that was completely outside the United States from activity that originated from inside the country.

The Federal Circuit, however, found that NTP’s method claims were not infringed. It held that “a process cannot be used ‘within’ the United States” under § 271(a) “unless each of the steps is performed within this country.”¹⁰² Because some of the steps of the patented method were performed in Canada, infringement of the method claims did not occur inside the United States.¹⁰³

2. § 271(f)

The *DeepSouth* decision caused a great uproar, leading Congress to add § 271(f) to the Patent Act in 1984.¹⁰⁴ The Senate Report from the Committee on the Judiciary focused on extending what constitutes patent infringement, “so that when components are supplied for assembly abroad to circumvent a patent, the situation will be treated the same as when the invention is ‘made’ or ‘sold’ in the United States.”¹⁰⁵ The Report emphasized that the bill was “needed to help maintain a climate in the United States conducive to invention, innovation, and investment” and observed that

⁹⁹ *Id.* at 1317–18.

¹⁰⁰ *Id.* at 1317. The court analogized the Blackberry system to *Decca Ltd. v. United States*, 544 F.2d 1070, 1075 (Ct. Cl. 1976), which involved patent infringement for a radio navigation system that included a transmitter in Norway. In *Decca*, the U.S. Court of Claims found infringement, holding that “use” of a patented invention occurs “wherever the signals are received and used in the manner claimed.” *Id.* at 1083. The court noted that its conclusion was based on several factors, “with particular emphasis on the ownership of the equipment by the United States, the control of the equipment from the United States and on the actual beneficial use of the system within the United States.” *Id.*

¹⁰¹ *NTP, Inc.*, 418 F.3d at 1317.

¹⁰² *Id.* at 1318.

¹⁰³ *Id.*

¹⁰⁴ See S. REP. NO. 98-663, at 2–3 (1984). Note that the United States is not alone in protecting extraterritorial acts. German patent law, for example, reaches extraterritorial conduct. See MARKETTA TRIMBLE, GLOBAL PATENTS, 122–23 (Oxford Press) (discussing offers for sale and the infringement of method claims under German law).

¹⁰⁵ S. REP. NO. 98-663 at 3.

the “subterfuge” allowed under *DeepSouth* “weakens confidence in patents among businesses and investors.”¹⁰⁶

Section 271(f) represents a conscious choice by Congress to overcome the presumption and to “fill a gap in the enforceability of patent rights.”¹⁰⁷ Merely manufacturing components of a patented device and shipping them abroad is not enough to trigger infringement. Rather, the infringer must also intend that the components be combined extraterritorially, either by actively inducing the combination of the components outside the country under § 271(f)(1) or by intending that the components will be combined outside the country under § 271(f)(2).¹⁰⁸

In *Microsoft Corp. v. AT&T Corp.*, the Supreme Court considered § 271(f)’s applicability to software.¹⁰⁹ AT&T maintained that Microsoft infringed its method patents when Microsoft exported master disks of Windows that were installed on foreign computers, which in turn were later sold abroad.¹¹⁰ The disks alone were not infringing, but infringement occurred when someone downloaded the software onto a computer and used the software.¹¹¹ The Court held that “abstract software code is an idea without physical embodiment,” and consequently, “does not match § 271(f)’s categorization: ‘components’ amenable to ‘combination.’”¹¹²

The Supreme Court maintained that “any doubt” with regard to whether § 271(f) applies can be resolved by the presumption, which “applies with particular force in patent law.”¹¹³ The Court observed that embedded within the Patent Act is the “traditional understanding” that U.S. patent law “does not extend to foreign activities.”¹¹⁴ More generally, it stated that courts should “assume that legislators take account of the legitimate sovereign interests of other nations when they write American laws.”¹¹⁵

¹⁰⁶ *Id.*

¹⁰⁷ *Life Techs. Corp. v. Promega Corp.*, 137 S. Ct. 734, 743 (2017).

¹⁰⁸ *See Waymark Corp. v. Porta Sys. Corp.*, 245 F.3d 1364, 1368 (Fed. Cir. 2001) (observing § 271(f)(2) “does not require an actual combination of the components, but only a showing that the infringer shipped them with the intent that they be combined”); Timothy R. Holbrook, *Extraterritoriality in U.S. Patent Law*, 49 WM. & MARY L. REV. 2119, 2146 (2008) (observing that “[a]n intent to make the combination is sufficient to trigger § 271(f)(1) liability”).

¹⁰⁹ *Microsoft Corp.*, 550 U.S. 437, 454–55 (2007).

¹¹⁰ *Id.* at 442.

¹¹¹ *Id.* at 446.

¹¹² *Id.* at 449. *See also*, *Pellegrini v. Analog Devices, Inc.*, 375 F.3d 1113, 1118 (Fed. Cir. 2004) (holding that “[s]upplying or causing to be supplied” under § 271(f) “clearly refers to physical supply of components, not simply to the supply of instructions or corporate oversight”).

¹¹³ *Id.* at 454–55.

¹¹⁴ *Id.* at 455 (citing 35 U.S.C. § 154(a)(1) (patentee’s rights over invention apply to manufacture, use, or sale “throughout the United States” and to importation “into the United States”)).

¹¹⁵ *Id.* (quoting *F. Hoffmann La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 164 (2004)).

D. Geographic Limitations on Patent Damages

The Supreme Court and en banc Federal Circuit have both acknowledged the expansive nature of § 284. Nevertheless, the Federal Circuit has taken a restrictive approach to awarding extraterritorial damages. For infringement under § 271(a), there is justification for this approach, given the provision is explicitly limited to domestic conduct. But no such territorial restriction exists for § 271(f), making the *Western-Geco* court's decision suspect.

1. Overview of Patent Damages

When Congress passed the 1952 Patent Act, it “sought to ensure that the patent owner would in fact receive full compensation for ‘any damages’ he suffered as a result of the infringement.”¹¹⁶ As the Supreme Court noted in *General Motors Corp. v. Devex Corp.*, “Congress expressly provided in § 284 that the court ‘shall award the claimant damages *adequate to compensate* for the infringement.”¹¹⁷ Damages may not be “less than a reasonable royalty for the use made of the invention by the infringer.”¹¹⁸ The Supreme Court has been clear that limitations should not be implied for patent damages.¹¹⁹

In *Rite-Hite Corp. v. Kelley Co., Inc.*, the en banc Federal Circuit broadly construed § 284 and noted that the provision “is expansive rather than limiting,” and that damages “must be adequate.”¹²⁰ The Federal Circuit acknowledged that “adequate damages” must “*fully compensate* the patentee for infringement.”¹²¹ The court recognized that the primary question asked is how much the patent holder would have made had the infringer not infringed.¹²² It further acknowledged the Supreme Court’s caution “against imposing limitations on patent infringement damages,” recognizing that Congress will explicitly state when it wants to limit patent damages.¹²³

Although the patentee is entitled to receive a reasonable royalty at minimum, it can generally recover more if it is able to establish lost profits.¹²⁴ To receive lost

¹¹⁶ *General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 654–55 (1983) (citing H.R. REP. NO. 1587, pt. 1 (1946)). See also *Rite-Hite Corp. v. Kelley Co., Inc.*, 56 F.3d 1538, 1544–45 (Fed. Cir. 1995) (en banc) (discussing *General Motors Corp.*).

¹¹⁷ *General Motors Corp.*, 461 U.S. at 655 (emphasis added by Court).

¹¹⁸ 35 U.S.C. § 284.

¹¹⁹ *General Motors Corp.*, 461 U.S. at 653 (observing that “[w]hen Congress wished to limit an element of recovery in a patent infringement action, it said so explicitly”).

¹²⁰ 56 F.3d 1538, 1544 (Fed. Cir. 1995) (en banc).

¹²¹ *Id.* (emphasis in original) (citing *General Motors Corp.*, 461 U.S. at 653).

¹²² *Id.* at 1545 (quoting *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 507 (1964) (plurality opinion)).

¹²³ *Id.*

¹²⁴ See Mark A. Lemley, *Distinguishing Lost Profits from Reasonable Royalties*, 51 WM. & MARY L. REV. 655, 661 (2009) (observing that “patent damages tend to be greater in lost profits cases than in reasonable royalty cases”). Note that the patent holder can, in theory, receive more than a reasonable

profits, the patentee “must show a reasonable probability that, ‘but for’ the infringement, it would have made the sales that were made by the infringer.”¹²⁵ Lost profits can encompass several things. For sales that the patentee did make, it can seek price erosion damages if it was forced to lower prices to compete with the infringer.¹²⁶ Under the entire market value rule, if the patent at issue involves only one part of a multi-featured device, the patentee can, in certain circumstances, recover lost profits for the entire device.¹²⁷ The patentee may also seek to recover future lost profits¹²⁸ and in some cases, harm to the reputation of the product or the patent holder.¹²⁹

The extent to which recoverable lost profits can be calculated based on foreign activity is unclear. As discussed below, Supreme Court decisions prior to the 1952 Patent Act sometimes allowed foreign activity to be included in damages calculations. However, recent Federal Circuit decisions have been far more restrictive, using the presumption to limit foreign damages that flow from domestic infringement.

2. Supreme Court Decisions Regarding Extraterritorial Patent Damages

Two early Supreme Court cases provide guidance on extraterritorial damages. In the 1881 decision *Goulds’ Manufacturing Co. v. Cowing*, the Supreme Court calculated damages for the infringement of a patented gas pump that was manufactured in the United States by the infringer and sold by him in both the United States and Canada.¹³⁰ The Court chose to include Canadian sales in calculating damages, but did not provide an explanation for the inclusion of foreign sales.¹³¹

In *Dowagiac Manufacturing Co. v. Minnesota Moline Plow Co.*, the Supreme Court held that the plaintiff could not recover damages solely for drills sold in Canada

royalty without establishing lost profits. See *Mars, Inc. v. Coin Acceptors, Inc.*, 527 F.3d 1359, 1366 (Fed. Cir. 2008) (noting that the assessment of damages beyond a reasonable royalty is not limited to lost profits).

¹²⁵ *Rite-Hite Corp.*, 56 F.3d at 1545.

¹²⁶ See *Crystal Semiconductor Corp. v. TriTech Microelectronics Intern., Inc.*, 246 F.3d 1336, 1357 (Fed. Cir. 2001) (“Reduction of prices, and consequent loss of profits, enforced by infringing competition, is a proper ground for awarding of damages.”) (quoting *Yale Lock Mfg. Co. v. Sargent*, 117 U.S. 536, 551 (1886)).

¹²⁷ *Rite-Hite Corp.*, 56 F.3d at 1549. The rule “has typically been applied to include in the compensation base unpatented components of a device when the unpatented and patented components are physically part of the same machine,” and also extends “to allow inclusion of physically separate unpatented components normally sold with the patented components.” *Id.* at 1549–50.

¹²⁸ *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1581 (Fed. Cir. 1992) (stating that “projected future losses may be recovered when sufficiently supported”).

¹²⁹ See *Reebok Int’l Ltd., v. J. Baker, Inc.*, 32 F.3d 1552, 1558 (Fed. Cir. 1994) (acknowledging that harm to reputation can be awarded, but observing that it “is a type of harm that is often not fully compensable by money because the damages caused are speculative and difficult to measure”).

¹³⁰ 105 U.S. 253.

¹³¹ *Id.* at 257–58. The only comment the Court made regarding its decision was that the sole markets for the pumps were in the oil-producing regions of Pennsylvania and Canada. *Id.* at 256.

by the defendant.¹³² The Court observed that U.S. patent infringement “cannot be predicated of acts wholly done in a foreign country.”¹³³ The Court distinguished its case from *Goulds*,¹³⁴ observing that the drills were manufactured in the United States by a third party and not by the defendant as they were in *Goulds*.¹³⁴ The Court also emphasized that the place of sale is “of controlling importance.”¹³⁵

What both of these cases stand for is disputed. In *WesternGeco*, the majority maintained that they “suggest that profits for foreign sales of the patented items themselves are recoverable when the items in question were manufactured in the United States and sold to foreign buyers by the U.S. manufacturer.”¹³⁶ The dissent-in-part argued that these cases show foreign sales can be used to calculate damages, so long as the defendants domestically manufactured the infringing goods that were later sold abroad.¹³⁷ Which position is correct is unclear. Moreover, although these cases may provide some insight for calculating damages in § 271(a) cases, they are not as helpful for § 271(f)—under which liability exists even though a patented good was never made, used, or sold within the United States.

3. Federal Circuit Decisions Regarding Extraterritorial Patent Damages

The Federal Circuit has considered extraterritorial damages under both §§ 271(a) and (f). Under both provisions, the court has declined to permit damages that arise outside the United States, even if those damages flow from U.S. infringement.

a. § 271(a)

In 2013, the Federal Circuit held that damages under § 271(a) do not extend to lost foreign sales. In *Power Integrations v. Fairchild Semiconductor Int’l, Inc.*, the patentee lost contracts to supply customers abroad because of the defendant’s domestic patent infringement.¹³⁸ The patentee argued that it should be able to recover lost profits for the foreign sales that it would have made but for the defendant’s domestic infringement.

The Federal Circuit disagreed, holding that “the entirely extraterritorial production, use, or sale of an invention patented in the United States is an independent, intervening act that, under almost all circumstances, cuts off the chain of causation

¹³² 235 U.S. 641, 642–43 (1915). The damages award in this case appears to be based on recovery of the defendant’s profits, as opposed to a lost profits or reasonable royalty theory.

¹³³ *Id.* at 650.

¹³⁴ *Id.*

¹³⁵ *Id.* See also Bradley, *Territorial IP Rights*, *supra* note 51 at 521.

¹³⁶ *WesternGeco L.L.C.*, 791 F.3d at 1352.

¹³⁷ *Id.* at 1356 (Wallach, J. dissenting in part).

¹³⁸ 711 F.3d 1348, 1370 (Fed. Cir. 2013).

initiated by an act of domestic infringement.”¹³⁹ The court noted that the law does not “provide compensation for a defendant’s foreign exploitation of a patented invention, which is not infringement at all.”¹⁴⁰ The Federal Circuit rooted its analysis in the presumption, citing to *Morrison*.¹⁴¹ However, the Federal Circuit failed to explain why a decision regarding limiting the reach of substantive U.S. law would apply in calculating damages.¹⁴²

Two years later, in *Carnegie Mellon University v. Marvell Technology Group, Ltd.*, Carnegie Mellon University (CMU) sued Marvell for infringement of its patented methods for improving the accurate detection of data recorded on hard disks.¹⁴³ Because CMU did not produce microchips using the claimed methods or otherwise compete with Marvell, CMU sought a fifty-cents-per-chip reasonable royalty.¹⁴⁴

The Federal Circuit again barred extraterritorial damages, citing to *Power Integrations*. It maintained that § 271(a)’s language shows clear intent from Congress to limit the provision to domestic activity.¹⁴⁵ It held:

Where a physical product is being employed to measure damages for the infringing use of patented methods. . . territoriality is satisfied when and only when any one of those domestic actions for that unit (e.g., sale) is proved to be present, even if others of the listed activities for that unit (e.g., making, using) take place abroad.¹⁴⁶

The court concluded that only Marvell’s domestic sales could be used to measure the reasonable royalty.

Both of these decisions were relatively uncontroversial because § 271(a) is highly territorial.¹⁴⁷ However, the issue of § 271(a)’s extraterritorial reach needs further examination in light of *RJR Nabisco*’s two-step test. Extraterritorial damages cases brought under § 271(a) clearly fail step one, because Congress did not expressly intend the provision to reach beyond the United States. But under step two, the

¹³⁹ *Id.* at 1371–72.

¹⁴⁰ *Id.* at 1371.

¹⁴¹ *Id.* at 1372 (citing *Morrison v. Nat’l Australia Bank*, 561 U.S. 247, 266 (2010)).

¹⁴² The Federal Circuit’s misapplication of *Morrison* is further highlighted by the Supreme Court’s decision in *RJR Nabisco*, in which the Court interpreted *Morrison* to be limited to situations when conduct relating to a statute’s focus occurs in a foreign country. *RJR Nabisco Inc.*, 136 S. Ct. at 2100. An argument can be made that the relevant activity in *Power Integrations* was the initial act of infringement that occurred in the United States.

¹⁴³ 807 F.3d 1283, 1291 (Fed. Cir. 2015).

¹⁴⁴ *Id.* at 1288; *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 986 F. Supp. 2d 574, 638 (W.D. Penn. 2013) (rev’d in part, 807 F.3d 1283 (Fed. Cir. 2015)).

¹⁴⁵ *Carnegie Mellon Univ.*, 807 F.3d at 1306.

¹⁴⁶ *Id.*

¹⁴⁷ See Holbrook, *supra* note 89 at 37 (observing that “[i]t is hard to imagine a starker expression of territorial limits” than § 271(a)); Bernard Chao, *Patent Imperialism*, 109 NW. U. L. REV. ONLINE 77, 78, 84 (2014) (discussing the territorial nature of § 271(a) and rejecting a worldwide causation theory).

presumption can still be overcome if the conduct relevant to the Patent Act's focus occurred in the United States. In *Goulds'*, the Supreme Court included Canadian sales in a damages calculation in which the infringer of manufactured infringing goods in the United States, then sold them in the United States and Canada.¹⁴⁸ An argument could be made that step two is met in such a case, given that the defendant manufactured the infringing goods in the United States and exported them for sale.

b. § 271(f)

In *WesternGeco L.L.C. v. Ion Geophysical Corp.*, the Federal Circuit extended the presumption to damages under § 271(f). WesternGeco owned four patents related to streamers, which are devices that contain sensors used to map the ocean floor to aid in oil and gas exploration.¹⁴⁹ WesternGeco sued ION, claiming that ION infringed its patents under § 271(f)(1) and (f)(2). The district court granted summary judgment for infringement of one claim under § 271(f)(1), and a jury found ION infringed all the asserted claims under § 271(f)(2).¹⁵⁰

On appeal, ION challenged the district court's award of lost profits from lost contracts for oil exploration services that would be performed outside the United States. WesternGeco identified ten surveys that it believed it would have received the contract for, but for ION supplying infringing streamer parts to WesternGeco's competitors.¹⁵¹ WesternGeco maintained that it would have earned over \$90 million in profit from these services contracts, which were performed on the high seas, outside the jurisdictional reach of any country's patent laws.¹⁵² This loss was a far more substantial for WesternGeco than the sales on the streamers alone.

The Federal Circuit reversed the district court's award of lost profits, using the presumption. Citing *Power Integrations*, the court emphasized that under § 271(a), "export of a finished product cannot create liability for extraterritorial use of that product."¹⁵³ The Federal Circuit held that § 271(f) "does not eliminate the presumption against extraterritoriality," but instead, "creates a limited exception."¹⁵⁴ The court stated that although § 271(f) "operates to attach liability" to U.S. entities that export components from the United States with requisite intent, "the liability attaches in the United States."¹⁵⁵ Consequently, the act of exporting creates the liability.¹⁵⁶ Turning

¹⁴⁸ *Goulds' Mfg. Co.*, 105 U.S. at 257–58.

¹⁴⁹ *WesternGeco L.L.C.*, 791 F.3d at 1343.

¹⁵⁰ *Id.* at 1342–43.

¹⁵¹ *Id.* at 1349.

¹⁵² *Id.*

¹⁵³ *Id.* at 1350.

¹⁵⁴ *Id.* at 1351.

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

to remedies, the court claimed that any attempt to use § 271(f) to recover lost foreign profits would make it broader than § 271(a).¹⁵⁷

Judge Wallach dissented in part, maintaining that § 271(f) requires consideration of lost foreign sales as part of the damages calculation.¹⁵⁸ Judge Wallach noted that unlike in *Power Integrations*, the foreign damages in this case clearly flowed from ION's infringement.¹⁵⁹ He further observed that the *Power Integrations* court emphasized the ability of the defendant to obtain foreign patents, whereas here, no country has jurisdiction over the high seas. He argued that this raises the concern that U.S. patent holders may not fully recover for infringement involving activities in international waters.¹⁶⁰ Overall, Judge Wallach characterized the majority's decision as a "near-absolute bar to the consideration of a patentee's foreign lost profits," contrary to the precedent of the Supreme Court and Federal Circuit.¹⁶¹ Later, in a dissent from the Federal Circuit's denial of rehearing en banc, Judge Wallach further maintained that the court's decision is in conflict with copyright law's predicate act doctrine.¹⁶²

In June 2016, the Supreme Court issued a grant-vacate-remand for *WesternGeco* in light of the Court's enhanced damages decision in *Halo Electronics*.¹⁶³ The Federal Circuit subsequently reinstated most of its original opinion, including the section regarding extraterritoriality under § 271(f).¹⁶⁴

III. Extraterritoriality For Other Intellectual Property

Extraterritoriality concerns are not unique to patent law, but also arise in trademark and copyright cases. In trademark law, the Supreme Court has authorized the extraterritorial application of the Lanham Act. In copyright law, several appellate courts have recognized or adopted the predicate act doctrine, which allows the recovery of foreign damages that flow from domestic infringement.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 1354 (Wallach, J., dissenting in part).

¹⁵⁹ *Id.* at 1357.

¹⁶⁰ *Id.* at 1361 ("Under the majority's view of damages, plaintiffs such as WesternGeco who are the victims of proven infringement and who have sustained damages caused by the defendant's activity in the United States may not be able to fully recover even if they obtain patent rights abroad.").

¹⁶¹ *Id.* at 1363–64.

¹⁶² *WesternGeco L.L.C. v. Ion Geophysical Corp.*, 621 Fed. App'x 663, 664 (Wallach dissenting in part). See also Part III.A (discussing the predicate act doctrine).

¹⁶³ *WesternGeco L.L.C. v. ION Geophysical Corp.*, 136 S. Ct. 2486 (2016).

¹⁶⁴ The Federal Circuit reinstated its original opinion with the exception of section V, which was directed to the question of enhanced damages. 837 F.3d 1358, 1361 (Fed. Cir. 2016).

A. Extraterritoriality in Trademarks

The Supreme Court has carved out a notable exception to the presumption in trademark law.¹⁶⁵ In *Steele v. Bulova Watch Co.*, the Court considered whether infringing acts of a U.S. citizen petitioner in Mexico were actionable under the Lanham Act.¹⁶⁶ Although it acknowledged the presumption, it stated that the relevant question was “whether Congress intended to make the law applicable to the facts of this case.”¹⁶⁷ The Court maintained that “the United States is not debarred by any rule of international law from governing the conduct of [its] own citizens upon the high seas or even in foreign countries when the rights of other nations or their nationals are not infringed.”¹⁶⁸ The Court stated that such cases involved “no question of international law,” but were instead, “solely of the purport of the municipal law which establishes the duty of the citizen in relation to his own government.”¹⁶⁹ The Court concluded that the Lanham Act was applicable, notwithstanding the fact that all of the infringing conduct took place in Mexico.

The Court’s decision hinges on the fact that the Lanham Act is grounded in Congress’s Commerce Clause powers. Section 1125 of the Lanham Act prohibits “uses in commerce” of words, terms, or the like that can cause confusion.¹⁷⁰ Under § 1127, “commerce” refers to “all commerce which may lawfully be regulated by Congress.”¹⁷¹ As the *Steele* Court observed, under international law, Congress can lawfully regulate conduct of its own citizens outside the United States.¹⁷² Consequently, the Court’s extraterritorial application of the Lanham Act has some statutory support.¹⁷³

In the aftermath of *Steele*, courts of appeal have adopted various tests prior to enjoining foreign conduct. Most use a balancing test that examines the effects of the defendant’s conduct on U.S. commerce, the citizenship of the defendant, and the

¹⁶⁵ See Bradley, *Territorial IP Rights*, *supra* note 51 at 527 (“In contrast to patent and copyright law, courts apply trademark law to conduct abroad even in some cases where no act of infringement has taken place within the United States.”).

¹⁶⁶ 344 U.S. 280 (1952).

¹⁶⁷ *Id.* at 285 (internal quotations deleted).

¹⁶⁸ *Id.*

¹⁶⁹ *Id.* at 286.

¹⁷⁰ 15 U.S.C. § 1125(1) (2012). See also, Donald S. Chisum, *Normative and Empirical Territoriality in Intellectual Property: Lessons from Patent Law*, 37 VA. J. INT’L L. 603, 605 (1997) (discussing the broad scope of trademark law).

¹⁷¹ 15 U.S.C. § 1127.

¹⁷² *Steele*, 344 U.S. at 285–86 (observing that international law does not bar the United States “from governing the conduct of its own citizens upon the high seas or even in foreign countries when the rights of other nations or their nationals are not infringed” (quoting *Skiriotes v. State of Florida*, 313 U.S. 69 (1941))).

¹⁷³ The counterargument is that Congress is presumed to think domestically when it passes statutes, see *Smith v. United States*, 507 U.S. 197, 204 n.5 (1993), and the Lanham Act does not explicitly say that it reaches the foreign conduct of U.S. citizens.

likelihood of a conflict between U.S. law and foreign law.¹⁷⁴ In the Ninth Circuit, the court adopted a complex test from antitrust law, which considers whether:

(1) the alleged violations . . . create some effect on American foreign commerce; (2) the effect [is] sufficiently great to present a cognizable injury to the plaintiffs under the Lanham Act; and (3) the interests of and links to American foreign commerce [are] sufficiently strong in relation to those of other nations to justify an assertion of extraterritorial authority.¹⁷⁵

For determining the third factor, the Ninth Circuit balances seven more factors, including the “degree of conflict with foreign law or policy” and “the extent to which enforcement by either state can be expected to achieve compliance.”¹⁷⁶ With these tests, courts are able to apply the Lanham Act extraterritorially, but can avoid such application when it would undermine international comity.

B. Predicate Act Doctrine and Copyright

Although the Copyright Act is not regarded as having extraterritorial reach,¹⁷⁷ a broad exception has been adopted by three courts of appeal. Under the predicate act doctrine, an act of U.S. infringement that permits further infringement abroad can give rise to a claim for damages flowing from the foreign conduct.¹⁷⁸ This tort doctrine was first extended to copyright law by the Second Circuit in 1939 in *Sheldon v.*

¹⁷⁴ See, e.g., *Paulsson Geophysical Services, Inc. v. Sigmar*, 529 F.3d 303, 307 (5th Cir. 2008) (applying a three-part balancing test considering the defendant’s citizenship, the effect of the defendant’s conduct on U.S. commerce, and the existence of a conflict with foreign law); *McBee v. Delica Co., Ltd.*, 417 F.3d 107, 120–21 (1st Cir. 2005) (observing that the Lanham Act applies extraterritorially if the defendant is a U.S. citizen or the action has a substantial effect on U.S. commerce, and in addition, does not raise comity concerns); *Int’l Café, S.A.L. v. Hard Rock Cafe Int’l*, 252 F.3d 1274, 1278 (11th Cir. 2001) (applying the Lanham Act extraterritorially when “(1) Defendant is a United States corporation; 2) the foreign activity had substantial effects in the United States; and 3) exercising jurisdiction would not interfere with the sovereignty of another nation”); *Nintendo of America, Inc. v. Aeropower Co., Ltd.*, 34 F.3d 246, 250 (4th Cir. 1994) (balancing effects of defendant’s conduct on U.S. commerce, citizenship of the defendant, and that “that the injunction sought would not interfere with the sovereignty of the nation within whose borders the extraterritorial conduct was to be prohibited”); *Totalplan Corp. of America v. Colborne*, 14 F.3d 824, 830 (2d Cir. 1994) (balancing defendant’s citizenship, impact of defendant’s conduct on U.S. commerce, and whether extraterritorial application creates “a conflict with trademark rights established under foreign law”). See also, *Bradley, Territorial IP Rights*, *supra* note 51 at 528 (discussing the three-part balancing test).

¹⁷⁵ *Trader Joe’s Company v. Hallatt*, 835 F.3d 960, 969 (9th Cir. 2016) (alteration in original) (quoting *Timberlane Lumber Co. v. Bank of America National Trust & Savings Ass’n*, 549 F.2d 597 (9th Cir. 1976)).

¹⁷⁶ *Reebok Int’l, Ltd. v. Marnatech Enters., Inc.*, 970 F.2d 552, 555 (9th Cir. 1992).

¹⁷⁷ See, e.g., *Subafilms, Ltd. v. MGM Pathe Communications Co.*, 24 F.3d 1088, 1094 (9th Cir. 1994) (en banc) (holding that “wholly extraterritorial acts of infringement are not cognizable under the Copyright Act”); *Update Art, Inc. v. Modiin Publ’g, Ltd.*, 843 F.2d 67, 73 (2d Cir. 1988) (holding “[i]t is well established that copyright laws generally do not have extraterritorial application.”).

¹⁷⁸ *Tire Eng’g and Distrib., LLC v. Shandong Linglong Rubber Co., Ltd.*, 682 F.3d 292, 306 (4th Cir. 2012) (per curiam).

*Metro-Goldwyn Pictures Corp.*¹⁷⁹ In that decision, authored by Judge Learned Hand, the court held that it was appropriate to consider profits made from exhibiting an infringing film outside the country because the film negatives were illegally reproduced in the United States.¹⁸⁰ The Second Circuit noted that it was a tort to make the negatives in the United States, and that the plaintiffs acquired an equitable interest in the profits.¹⁸¹

The leading modern case for the doctrine is *Update Art, Inc. v. Modiin Publishing, Ltd.*, in which the plaintiff's copyrighted artwork was reproduced without permission in an Israeli newspaper.¹⁸² The defendant discovered the art in the United States and reproduced it domestically, prior to it being reproduced in Israel.¹⁸³ The Second Circuit held that U.S. copyright law is applicable and affirmed an award of damages accruing from the foreign infringement.¹⁸⁴

Other circuits have also adopted the predicate act doctrine, based on *Update Art*. In 1994, the en banc Ninth Circuit declined to comment on the validity of the doctrine, but observed that the doctrine is "premised on the theory that the copyright holder may recover damages that stem from a direct infringement of its exclusive rights that occurs within the United States."¹⁸⁵ Subsequently, a Ninth Circuit panel adopted the doctrine, holding that the copyright holder was "entitled to recover damages flowing from exploitation abroad of the domestic acts of infringement committed by defendants."¹⁸⁶ In adopting the doctrine, the panel emphasized that the rule would not allow U.S. law to be applied to "acts of infringement that take place entirely abroad," but rather, only if a party infringes a copyright in the United States.¹⁸⁷ It further noted that damages must flow from the "extraterritorial exploitation of an infringing act that

¹⁷⁹ 106 F.2d 45 (2d Cir. 1939).

¹⁸⁰ *Id.* at 52.

¹⁸¹ *Id.*

¹⁸² 843 F.2d 67, 73 (2d Cir. 1988).

¹⁸³ *Id.* Note that the court construed the facts in this fashion because the defendants failed to comply with discovery requests. *Id.*

¹⁸⁴ *Id.* at 72-73.

¹⁸⁵ *Subafilms, Ltd. v. MGM-Pathe Communications Co.*, 24 F.3d 1088, 1094 (9th Cir. 1994) (emphasis in original).

¹⁸⁶ *Los Angeles News Service v. Reuters Int'l, Ltd.*, 149 F.3d 987, 992 (9th Cir. 1998).

¹⁸⁷ *Id.*

occurred in the United States.”¹⁸⁸ The Fourth Circuit also adopted the doctrine,¹⁸⁹ and the Federal Circuit has acknowledged it in dicta.¹⁹⁰ To date, no court of appeals appears to have rejected it.

The predicate act doctrine is notable because of the parallels that can be drawn to patent law. Unlike the Lanham Act, both the Patent Act and Copyright Act are grounded in the Intellectual Property Clause of the U.S. Constitution.¹⁹¹ *WesternGeco* involved U.S. patent infringement that gave rise to damages abroad, much like the copyright cases applying the predicate act doctrine. One could argue that *WesternGeco* had an equitable interest in the streamer parts, and should be able to collect any damages that flow from the use of the completed device.¹⁹² However, as Part IV discusses, there are sufficient differences between patent and copyright law to justify a different test for extraterritorial patent damages.

IV. Rethinking Extraterritorial Damages

The presumption plays an important role in minimizing conflicts between U.S. and foreign law. Extending the presumption to block all extraterritorial patent damages is tempting, because it provides a clear, easy to apply rule. However, existing Supreme Court precedent applies the presumption far more narrowly. In maritime cases, moreover, the Federal Circuit’s bright-line rule may prevent patent holders from recovering for high seas infringement. At the same time, patent law is highly

¹⁸⁸ *Id.* Note that the doctrine, as originally articulated by the Second Circuit, only allowed for foreign profits to go into a constructive trust. See *Sheldon*, 106 F.2d at 52 (holding that “as soon as any of the profits so realized took the form of property whose situs was in the United States, our law seized upon them and impressed them with a constructive trust, whatever their form”). More recent decisions, however, emphasize that the doctrine captures all foreign damages directly flowing from the domestic infringement. See, e.g., *L.A. News Serv.*, 149 F.3d at 992 (holding that the copyright holder is “entitled to recover damages flowing from exploitation abroad of the domestic acts of infringement committed by defendants”); *Update Art*, 843 F.2d at 73 (awarding “damages accruing from the illegal infringement”).

¹⁸⁹ *Tire Eng’g*, 682 F.3d at 307 (holding that “[o]nce a plaintiff demonstrates a domestic violation of the Copyright Act, then, it may collect damages from foreign violations that are directly linked to the U.S. infringement”).

¹⁹⁰ *Litecubes, LLC v. N. Light Prods., Inc.*, 523 F.3d 1353, 1371 (Fed. Cir. 2008) (observing that “courts have generally held that the Copyright Act only does not reach activities ‘that take place entirely abroad’ “ (quoting *Subafilms*, 24 F.3d at 1098)). See also *Liberty Toy Co. v. Fred Silber Co.*, No. 97-3177, 1998 WL 385469, at *3 (6th Cir. June 29, 1998) (noting that “if all the copying or infringement occurred outside the United States, the Copyright Act would not apply” but “as long as some act of infringement occurred in the United States, the Copyright Act applies”).

¹⁹¹ U.S. CONST., art. I, § 8, cl. 8. See also, *Golan v. Holder*, 565 U.S. 302, 324 (2012) (observing that “Congress’ copyright authority is tied to the progress of science; its patent authority, to the progress of the useful arts”).

¹⁹² See *WesternGeco L.L.C. v. Ion Geophysical Corp.*, 621 F. App’x 663, 664 (2016) (Wallach, J., dissenting in part) (analogizing to the predicate act doctrine and maintaining that “*WesternGeco*’s damages flowed from the exploitation abroad of domestic acts of patent infringement under § 271(f)”).

territorial, raising concerns that permitting extraterritorial damages in all cases could lead to disputes with foreign nations. For these reasons, a balancing test is warranted.

Section A argues that the *RJR Nabisco* two-step test is met for cases like *WesternGeco* and concludes that §§ 271(f) and 284 apply extraterritorially. Section B discusses the lack of applicable law for infringement on the high seas and maintains that it is unclear whether law of the flag applies to patent cases. Section C looks at the policy concerns regarding the extraterritorial application of patent damages and proposes that courts utilize a balancing test to limit problems of prescriptive comity and promote innovation.

A. Application of the Presumption

Although the Federal Circuit reissued the *WesternGeco* decision in late 2016, it disregarded the *RJR Nabisco* Court's two-step test for extraterritoriality. The seven justices taking part in the *RJR Nabisco* decision agreed that a two-step test is used to determine whether the substantive provision of RICO applies extraterritorially.¹⁹³ A four-Justice majority further held that the test applies separately to jurisdictional provisions.¹⁹⁴ One possibility is that the Supreme Court will not give precedential value to the four-Justice majority, in which case courts must only consider whether § 271(f) meets the test. Another possibility is that the four-Justice majority will be followed, in which case both §§ 271(f) and 284 must independently meet the test.

1. Application of two-step test to § 271(f).

a. Step One

Under step one, the court asks whether the presumption has been rebutted by the statute providing “a clear, affirmative indication that it applies extraterritorially.”¹⁹⁵ In *Microsoft*, the Supreme Court recognized that “§ 271(f) is an exception to the general rule that our patent law does not apply extraterritorially.”¹⁹⁶ Section 271(f) clearly applies to extraterritorial conduct, by creating liability for those who export components with the intent that they be used abroad to create patent devices.

The question that must be asked, however, is what is the breadth of the statutory exception?¹⁹⁷ In *Microsoft*, the Supreme Court resisted giving § 271(f) a broad interpretation and held that abstract software did not count as a “component” under the

¹⁹³ *RJR Nabisco, Inc.*, 136 S. Ct. at 2101.

¹⁹⁴ *Id.* at 2106.

¹⁹⁵ *Id.* at 2101.

¹⁹⁶ *Microsoft Corp.*, 550 U.S. at 441.

¹⁹⁷ *See id.* at 455–56 (noting that “the presumption is not defeated” merely because a statute addresses issues of extraterritorial application, because the court must also “determine[] the extent of the statutory exception”) (emphasis in original).

provision, due to being “uncombinable.”¹⁹⁸ Mindful of this, the Federal Circuit in *WesternGeco* maintained that § 271(f) merely “expanded the territorial scope of the patent laws to treat the export of components of patented systems abroad (with the requisite intent) just like the export of the finished systems abroad.”¹⁹⁹ The Federal Circuit claimed that in doing so, there was no indication that “Congress intended to extend the United States patent law to cover uses abroad of the articles created from the exported components,” and maintained that its § 271(a) precedent blocking extra-territorial patent damages is applicable to § 271(f).²⁰⁰

There are several problems, however, with the Federal Circuit’s position. In *Microsoft*, the issue was how to interpret the term “component” in § 271(f). Faced with a choice of a broad interpretation of “component” that extended the extraterritorial reach of § 271(f) versus a narrow one that did not, the Court chose the narrow reading.²⁰¹ But in *WesternGeco*, it was clear that § 271(f) had been violated, the only issue was how to compensate the patent holder under § 284. In this regard, *Microsoft* and *WesternGeco* can be differentiated.

Moreover, on multiple occasions, the Supreme Court has admonished the Federal Circuit for attempting to restrict damages.²⁰² When Congress passed § 284, it was clear that the provision’s purpose was to make patent infringement victims whole. The House Report noted that the legislation was intended to allow recovery of “any damages” that the patent holder can prove²⁰³ and the Senate Report adopted the same language.²⁰⁴ The Federal Circuit should not interpret the presumption so broadly as to contravene the Supreme Court’s guidance and Congress’s legislative intent.

Although the Senate Report noted that Congress wanted the export of parts of a patented good to be treated as though the final patented good itself was exported,

¹⁹⁸ See *id.* at 449 (“Abstract software code is an idea without physical embodiment, and as such, it does not match § 271(f)’s categorization: ‘components’ amenable to ‘combination.’”).

¹⁹⁹ *WesternGeco L.L.C.*, 791 F.3d at 1350.

²⁰⁰ *Id.* at 1350–51 (extending *Power Integrations* to § 271(f)).

²⁰¹ *Microsoft Corp.*, 550 U.S. at 442, 454–56.

²⁰² See *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 136 S. Ct. 1923, 1935 (2016) (holding that the Federal Circuit’s test restricting the award of enhanced damages “unduly confines the ability of district courts to exercise the discretion conferred on them”); *General Motors Corp.*, 461 U.S. at 652–53 (holding that pre-1952 limitations on the award of interest in patent cases did not survive the 1952 Patent Act and maintaining that “[w]hen Congress wished to limit an element of recovery in a patent infringement action, it said so explicitly”). See also, *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1756 (2014) (holding that the Federal Circuit’s test for when cases are “exceptional” under § 285 is “unduly rigid” and “impermissibly encumbers the statutory grant of discretion to district courts”).

²⁰³ H.R. REP. NO. 1587, 79th Cong., 2d Sess., 1 (1946).

²⁰⁴ S. REP. NO. 1503, 79th Cong., 2d Sess., 2 (1946) (adopting the language from the House Committee Report).

Congress never expressed any intent to restrict damages.²⁰⁵ When § 271(f) was passed in 1984, there was no restriction on extraterritorial damages under § 271(a). Congress had no way to predict that the Supreme Court would one day resurrect and expand the presumption, nor that the Federal Circuit would limit extraterritorial damages under § 271(a). Indeed, the year before § 271(f) passed, the Supreme Court in *General Motors* stated: “When Congress wished to limit an element of recovery in a patent infringement action, it said so explicitly.”²⁰⁶ The Court further observed that in passing § 284, “Congress sought to ensure that the patent owner would in fact receive full compensation for ‘any damages’ he suffered as a result of the infringement.”²⁰⁷ Given Congress would have been legislating against this backdrop, it is absurd to think that in passing § 271(f), it intended to implicitly limit damages.

b. Step Two

If step one is not met, the court will move to step two, which states that if the focus of the statute occurred in the United States, “then the case involves a permissible domestic application even if other conduct occurred abroad.”²⁰⁸ But “if the conduct relevant to the focus occurred in a foreign country, then the case involves an impermissible extraterritorial application regardless of any other conduct that occurred in U.S. territory.”²⁰⁹

The case for step two being met is even stronger than for step one. Section 271(f)’s focus is on components exported from the United States with the intention that they be assembled into U.S.-patented devices. Indeed, the *WesternGeco* court maintained that liability under § 271(f) “attaches in the United States.”²¹⁰ Consequently, for cases like *WesternGeco*, there is “a permissible domestic application”—preventing the export of components that are in the United States—notwithstanding the fact that other conduct occurred abroad.

Damages under § 271(f) involves a multiterritorial, not extraterritorial, application of U.S. law. As Professor Jane Ginsburg has noted in the context of copyright law, multiterritorial claims “involve acts or parties located in more than one country, but do not necessarily require application of a single law—the forum’s—to resolve

²⁰⁵ See S.R. 98663 (stating that the bill “amends patent law so that when components are supplied for assembly abroad to circumvent a patent, the situation will be treated the same as when the invention is ‘made’ or ‘sold’ in the United States”).

²⁰⁶ *General Motors Corp.*, 461 U.S. at 653 (emphasis added). The en banc Federal Circuit has acknowledged that Congress must expressly limit damages. See *Rite-Hite Corp.*, 56 F.3d at 1545 (observing that “the Court has cautioned against imposing limitations on patent infringement damages”).

²⁰⁷ *General Motors Corp.*, 461 U.S. at 654–55.

²⁰⁸ *RJR Nabisco Inc.*, 136 S. Ct. at 2101.

²⁰⁹ *Id.*

²¹⁰ *WesternGeco L.L.C.*, 791 F.3d at 1351.

the entire claim.”²¹¹ By contrast, extraterritorial applications involve “the application of one country’s laws to events occurring outside that country’s borders.”²¹² In *WesternGeco*, the core activity regulated by § 271(f)—shipping components for reassembly abroad coupled with the necessary intent—occurred inside the United States. Seeking damages flowing from this domestic event does not involve an impermissible extraterritorial extension of the Patent Act.

2. Application of two-step test to § 284.

The four-Justice majority in *RJR Nabisco* maintained that the presumption must be applied twice: once to RICO’s substantive provision and again for RICO’s jurisdictional provision.²¹³ Seven justices in *RJR Nabisco* further noted in dicta that the presumption applies to a statute that “affords relief,” in addition to those that regulate conduct or confer jurisdiction.²¹⁴ This raises the possibility the two-step test may need to be separately applied to § 284.

It is unclear what kind of precedential effect the four-Justice majority portion of the *RJR Nabisco* opinion will have. The Supreme Court has never expounded on whether such decisions bind lower courts or are entitled to stare decisis; only a single state supreme court case exists in which a court has directly considered the issue.²¹⁵ Although this issue has not received much attention from scholars, Professor Jonathan Nash has suggested limiting the precedential value of such decisions.²¹⁶ If the four-Justice portion of *RJR Nabisco* has no precedential value or only limited value, then the analysis above for §271(f) alone may be all that is required.

If, however, the entire *RJR Nabisco* opinion is binding, we must consider how to apply the test to § 284. The *RJR Nabisco* Court first observed that § 1964(c) lacks any explicit extraterritorial reach, and that use of the phrase “any person” was insufficient to displace the presumption.²¹⁷ It then emphasized that § 1964(c) of RICO is not coextensive with the substantive provisions of the statute. It maintained that “by

²¹¹ Jane C. Ginsburg, *Extraterritoriality and Multiterritoriality in Copyright Infringement*, 37 VA. J. INT’L L. 587, 588 (1997).

²¹² *Id.*

²¹³ *RJR Nabisco, Inc.*, 136 S. Ct. at 2101, 2016.

²¹⁴ *Id.* at 2101.

²¹⁵ After a four-Justice majority struck down Florida and Pennsylvania replevin statutes, the Arizona Supreme Court declined to strike down a similar Arizona statute, maintaining that it had “doubts” that the opinion would stand with the full court. *Roofing Wholesale Co., Inc. v. Palmer*, 502 P.2d 1327, 1329 (Ariz. 1972). Indeed, the full Supreme Court reversed course two years later, finding such statutes to be constitutional. *See Mitchell v. W.T. Grant Co.*, 416 U.S. 600 (1974). *See also, State Court is not Bound by 4-3 Decision of the United States Supreme Court*, 86 HARV. L. REV. 1307, 1313–14 (1973) (student note) (maintaining that Arizona erred and that four-Justice majority decisions should be entitled to full precedential effect).

²¹⁶ Jonathan Remy Nash, *The Majority that Wasn’t: Stare Decisis, Majority Rule, and the Mischief of Quorum Requirements*, 58 EMORY L.J. 831, 872, 883 (2009).

²¹⁷ *RJR Nabisco Inc.* 136 S. Ct. at 2108.

cabining RICO's private cause of action to particular kinds of injury," that "Congress signaled that the civil remedy is not coextensive with § 1962's substantive prohibitions."²¹⁸

Unlike with RICO, damages under § 284 are available for *any* kind of patent infringement, not just limited cases.²¹⁹ The House Committee on Patents noted that the Patent Act's purpose was "to make the basis of recovery in patent-infringement suits general damages, that is, any damages the complainant can prove,"²²⁰ and the Senate adopted the same language.²²¹ The Supreme Court has repeatedly admonished the Federal Circuit for attempting to restrict damages under both § 284²²² and § 285,²²³ and the en banc Federal Circuit has acknowledged that "the Court has cautioned against imposing limitations on patent infringement damages."²²⁴

Consequently, the argument for restricting § 1964(c)'s reach does not apply to § 284. Although there is no guidance from the Supreme Court for dealing with this situation, it would be absurd for courts to require Congress to revise a coextensive damages provision every time Congress expands underlying substantive law extra-territorially. Moreover, in the case of § 284, Congress would have had no reason to do this, given that there was no indication that the presumption might apply to a damages provision at the time of passage.

B. High Seas Patent Damages

Intellectual property infringement on vessels is not a new problem. For example, there have been several high-profile cases involving cruise ships that performed copyrighted works in international waters.²²⁵ The question remains, however, whether any country's patent law applies when infringement takes place on the high seas.

²¹⁸ *Id.*

²¹⁹ See 35 U.S.C. § 284 ("Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement. . .").

²²⁰ H.R. REP. NO. 1587, 79th Cong., 2d Sess., 1 (1946).

²²¹ S. REP. 79-2 at 2.

²²² See *Halo Electronics*, 136 S. Ct. at 1935 (holding that the Federal Circuit's test restricting the award of enhanced damages "unduly confines the ability of district courts to exercise the discretion conferred on them"); *General Motors Corp.*, 461 U.S. at 652-53 (holding that pre-1952 limitations on the award of interest in patent cases did not survive the 1952 Patent Act and maintaining that "[w]hen Congress wished to limit an element of recovery in a patent infringement action, it said so explicitly").

²²³ See *Octane Fitness, LLC*, 134 S. Ct. at 1756 (holding that the Federal Circuit's test for when cases are "exceptional" under § 285 is "unduly rigid" and "impermissibly encumbers the statutory grant of discretion to district courts").

²²⁴ *Rite-Hite Corp.*, 56 F.3d at 1545.

²²⁵ For example, in 2006, the rights holder for the musical *Grease* sued Carnival Cruise Lines, Celebrity Cruises, and several others for two counts of copyright infringement, alleging that the vessels had performed the musical, either in its entirety or modified. Complaint and Jury Demand at 1-2, *Jacobs v. Carnival Corp.*, No. 06 CV 0606, 2006 WL 551156 (S.D.N.Y. Mar. 25, 2009). See also, Jeff Pettit,

Under the law of the flag, a vessel is considered to be part of the sovereign territory of the country whose flag it flies.²²⁶ But in the United States, a more nuanced balancing test applies to determine whether U.S. law extends to conduct that occurred on a vessel.²²⁷ Moreover, it is unclear whether the law of the flag applies to intellectual property infringement.²²⁸ Consequently, in patent infringement cases involving vessels, there is a risk that in limiting extraterritorial damages, the patent holder will not be able to recover in any jurisdiction.

1. Overview of Law of the Flag

United Nations Convention on the Law of Seas (UNCLOS) provides guidance on the application of national law at sea.²²⁹ But although the United States is a signatory to UNCLOS, Congress never ratified it, so it is merely advisory.²³⁰ UNCLOS provides that countries can enforce all of their laws in their territorial waters, which extend out a maximum of 12 nautical miles beyond the shore.²³¹ In addition, laws for taxation, customs, immigration and pollution can be enforced in the “contiguous zone,” which extends up to 24 nautical miles from shore.²³² But beyond the area of national enforcement is international waters or the high seas.²³³

For vessels on the high seas, the law of the flag applies. Under UNCLOS, a vessel flying under a state’s flag is subject to that state’s exclusive jurisdiction on the

At Sea, Anything Goes? Don't Let Your Copyright Sail Away, Sail Away, Sail Away, 93 TEX. L. REV. 743, 750 (2015) (student note) (discussing the problem of copyright infringement on the high seas by cruise ships). Similarly, Barry Manilow recently sued Princess Cruises in the Central District of California for rebroadcasting one of his concerts, alleging copyright and trademark infringement, unfair competition, dilution and violation of right of publicity. Ashely Cullins, *Princess Cruise Line Faces Lawsuit Over Barry Manilow Concert Broadcast*, HOLLYWOOD REPORTER (March 18, 2016), <http://www.hollywoodreporter.com/thr-csq/princess-cruises-faces-lawsuit-barry-876787>.

²²⁶ *Lauritzen v. Larsen*, 345 U.S. 571, 585 (1953). See also, William Tetley, *The Law of the Flag*, “Flag Shopping,” and *Choice of Law*, 17 TUL. MAR. L.J. 139 (1993) (providing an overview of the law of the flag).

²²⁷ See Part IV.B.1.

²²⁸ See Part IV.B.2.

²²⁹ Third United Nations Convention on the Law of the Sea, Nov. 16 1994, 1833 U.N.T.S. 31363 (hereinafter UNCLOS).

²³⁰ See Elizabeth I. Winston, *Patent Boundaries*, 87 TEMP. L. REV. 501, 505 (2015) (discussing UNCLOS); Jeffrey D. Kramer, *Seafaring Data Havens: Google's Patented Pirate Ship*, 2010 U. ILL. J. L. TECH. & POL'Y 359, 361–62 (student note) (discussing the law of the sea). Note that 148 countries are currently bound by the treaty.

²³¹ Article 3 UNCLOS.

²³² Article 33 UNCLOS.

²³³ Note that U.S. law does apply to piracies, felonies, and offenses against the Law of Nations. U.S. CONST., art. 1, § 8, cl.10. Patent law, however, does not fit within any of these categories. Winston, *supra* note 233 at 517.

high seas.²³⁴ This would mean that the state whose flag is flown would have exclusive jurisdiction over any intellectual property dispute arising on the vessel.

Under federal common law, however, the law of the flag is far more limited. In *Spector v. Norwegian Cruise Line Ltd.*, the Supreme Court observed “general statutes are presumed to apply to conduct that takes place aboard a foreign-flag vessel in United States territory if the interests of the United States or its citizens, rather than interests internal to the vessel, are at stake.”²³⁵ Statutes, however, do not apply to such vessels “insofar as they regulate matters that involve only the internal order and discipline of the vessel, rather than the peace of the port.”²³⁶ In other words, in the United States, the law of the flag is limited to criminal conduct and civil conduct involving the substantive rights of the crew, passengers, and the vessel owner.²³⁷

Even if the law of the flag is applicable, it alone is not determinative.²³⁸ To determine whether U.S. or foreign law governs a maritime conflict, the court will apply the *Lauritzen-Rhoditis* balancing test,²³⁹ and consider the (1) place of the wrongful act, (2) law of the flag, (3) allegiance or domicile of the injured, (4) allegiance of the defendant shipowner, (5) place of contract, (6) inaccessibility of foreign forum, (7) law of the forum, and (8) shipowner’s base.²⁴⁰ This test has been criticized for being

²³⁴ Article 92 UNCLOS.

²³⁵ 545 U.S. 119, 130 (2005). See also *Uravic v. F. Jarka Co.*, 282 U.S. 234, 240 (1931) (holding that “general words” should be “generally applied” and that therefore there is “no reason for limiting the liability for torts committed [aboard foreign-flag ships in United States territory] when they go beyond the scope of discipline and private matters that do not interest the territorial power”).

²³⁶ *Spector*, 545 U.S. at 130.

²³⁷ See *McCullough*, 372 U.S. at 21 (observing that “the law of the flag state ordinarily governs the internal affairs of a ship”); *Lauritzen*, 345 U.S. at 585 (noting that “the law of the flag supersedes the territorial principle, even for purposes of criminal jurisdiction of personnel of a merchant ship”); *Petition of Chadade S. S. Co.*, 266 F. Supp. 517, 519 (S.D. Fla. 1967) (“the law of the flag of a vessel generally governs not only criminal conduct but also the substantive rights of crew, passengers and the shipowner in civil causes of action arising thereon”).

²³⁸ *U.S. Lines Co. v. Eastburn Marine Chemical Co.*, 221 F. Supp. 881, 884 (S.D.N.Y. 1963) (declining to apply law of the flag in an insurance case). See also, Marcus R. Bach-Armas & Jordan A. Dresnick, *Laws Adrift: Anchoring Choice of Law Provisions in Admiralty Torts*, 17 U. MIAMI INT’L & COMP. L. REV. 43 (2009) (recognizing “the false notion that a ship is merely a floating portion of the country under which the vessel flies its flag” and maintaining that “the complex web of laws governing the maritime industry is governed largely by international law and self-regulation”).

²³⁹ The first seven factors come from the Supreme Court’s decision in *Lauritzen v. Larsen*, 345 U.S. at 583–91, the eighth factor comes from *Hellenic Lines Ltd. v. Rhoditis*, 398 U.S. 306, 310 (1970). See also Tetley, *supra* note 229 at 157 (discussing *Lauritzen*). Although the test was originally limited to cases involving injuries to seamen, it has since been extended “to virtually all maritime conflicts.” Symeon C. Symeonides, *Cruising in American Waters: Spector, Maritime Conflicts, and Choice of Law*, 37 J. MAR. L. & COM. 491, 513 (2006).

²⁴⁰ See *Reino de España v. American Bureau of Shipping, Inc.*, 691 F.3d 461, 468 (2d Cir. 2012) (applying an eight-factor balancing test); *Fogelman v. Aramco*, 920 F.2d 278, 282–83 (5th Cir. 1991) (also applying an eight-factor balancing test).

unpredictable,²⁴¹ and at least one scholar has observed that the law of the flag factor has lost importance in the courts due to vessel owners' growing use of flags of convenience.²⁴²

2. Law of the Flag in Patent Law

It is unclear whether the law of the flag governs in cases involving patent law. Substantive U.S. patent law clearly does not apply to ships sailing foreign flags.²⁴³ In the 1856 case *Brown v. Duchesne*, a U.S. citizen patent holder claimed infringement of a gaff saddle that was on a French ship in a U.S. port.²⁴⁴ The saddle was made in a foreign port in accordance with French law. The Court held that U.S. patent law does not apply to foreign vessels entering U.S. ports.²⁴⁵ It emphasized that no infringement occurs on a ship, provided the patented improvement "was placed upon her in a foreign port, and authorized by the laws of the country to which she belongs."²⁴⁶ It noted that to hold otherwise would interfere with Congress's power to pass legislation regulating commerce and the President's treaty-making power.

Patent infringement on a ship does not fit the narrow category of behaviors covered by law of the flag in the United States. Infringement does not affect the substantive rights of the crew, passengers, or ship owner, given that no basic human right is at issue. Nor do patents relate to internal order or discipline on a vessel the way that tort or criminal law does. Consequently, as Judge Wallach observed in *WesternGeco*, if an infringer exclusively supplies components from one country that is only used on the high seas, "it may be that no country's patent laws reach the conduct occurring in international waters absent a provision such as § 271(f)."²⁴⁷

The only recent case on point is *M-I Drilling Fluids UK Ltd., v. Dynamic Air, Inc.*, in which the District of Minnesota held that U.S. patent law applies to U.S.-flagged vessels in international waters.²⁴⁸ The court maintained that *Gardiner v. Howe*—an 1865 district court decision—supported the applicability of the law of the

²⁴¹ See Bach-Armas, *supra* note 241 at 58 (observing that the result of the test "has been a panoply of decisions pointing in different directions and leaving little predictability for today's practitioners, especially when the factors are incongruous").

²⁴² Symeonides, *supra* note 242 at 514 (collecting cases).

²⁴³ Winston, *supra* note 233 at 521.

²⁴⁴ 60 U.S. 183,193.

²⁴⁵ *Id.* at 195.

²⁴⁶ *Id.* at 198-99.

²⁴⁷ *WesternGeco L.L.C.*, 791 F.3d at 1360-61 (Wallach dissenting in part).

²⁴⁸ 99 F. Supp. 3d 969 (D. Minn. 2015). There is also a very short decision from the District of Massachusetts from 1865. See *Gardiner v. Howe*, 9 F. Cas. 1157, 1158 (D. Mass. 1865) (holding that U.S. patent law "extends to the decks of American vessels on the high seas, as much as it does to all the territory of the country").

flag to patent infringement cases.²⁴⁹ The court noted that Congress discussed the applicability of the law of the flag in patent cases in 1990, when it amended the Patent Act under the Inventions in Outer Space Act.²⁵⁰ It observed that the Senate Judiciary Report stated that “some caselaw supports the proposition that the deck of U.S.-flagged vessels may be treated as U.S. territory for jurisdictional purposes in patent infringement proceedings,” referring to *Gardiner*, but conceded that the same Report acknowledged that *Gardiner* had been criticized.²⁵¹

Even if the law of the flag reaches some patent-related activity on the high seas, it is uncertain whether the doctrine applies in cases like *WesternGeco*. The law of the flag generally applies to conduct occurring on a vessel, not damages resulting from conduct in the United States. Moreover, it is wholly unclear whether other countries will apply their respective patent laws to cases involving infringement on vessels flying their flags. It is possible that there may be infringement cases in which no country’s patent law is applicable.²⁵²

Furthermore, if damages arise from U.S. infringement, the *Lauritzen-Rhoditis* balancing test might favor the application of U.S. law. In *Reino de España v. American Bureau of Shipping, Inc.*, a Bahamian flagged vessel sank off the coast of Spain, causing oil to wash ashore in Spain.²⁵³ Spain sued American Bureau of Shipping (ABS), which had inspected the vessel for structural soundness. Applying the full balancing test, the Second Circuit applied U.S. law, notwithstanding the fact that the vessel was flagged in the Bahamas.²⁵⁴ It held that for factor (1), the “place of the wrongful act” is not where the vessel sank, but “where the negligence [or recklessness] occurs,” and maintained that ABS’s wrongful conduct “[gave] the United States ties to the litigation that [were] both obvious and more pertinent” than the other factors.²⁵⁵ Likewise, a patentee could argue that under § 271(f), the United States was

²⁴⁹ *Id.* at 973-74 (discussing *Gardiner v. Howe*, 9 F. Cas. 1157, 1158 (D. Mass. 1865)). *Gardiner* held that U.S. patent law “extends to the decks of American vessels on the high seas, as much as it does to all the territory of the country.” 9 F. Cas. at 1158.

²⁵⁰ *Id.* at 975 (discussing Pub. L. No. 101-580, § 1(a), 104 Stat. 2863 (1990) (codified at 35 U.S.C. § 105)).

²⁵¹ *Id.* (quoting S. REP. NO. 101-266 (1990)). Congress considered the applicability of the law of the flag in the context of protecting patented inventions in outer space. *Id.*

²⁵² In *Spector v. Norwegian Cruise Line, Ltd.*, the Supreme Court held that “general statutes may not apply to foreign-flag vessels insofar as they regulate matters that involve only the internal order and discipline of the vessel, rather than the peace of the port.” 545 U.S. at 130. Applying this distinction, Professor Elizabeth Winston argued that the law of the flag is more appropriate for patent law cases, maintaining that “[p]atent law has more to do with the internal affairs of the vessel itself.” Winston, *supra* note 233 at 521-22. But there is another possibility that intellectual property law fails to fit either paradigm and that no law applies to infringement that occurs at sea.

²⁵³ 691 F.3d at 462.

²⁵⁴ *Id.* at 467.

²⁵⁵ *Id.* at 468.

the place of the wrongful act, given that is where the patent components were manufactured and exported leading to the high seas damages.

C. Rethinking Extraterritorial Damages

Given that the presumption is rebutted, courts could adopt the predicate act doctrine from copyright law. However, due to the lack of international uniformity in patent law, extraterritorial patent damages poses a greater risk to prescriptive comity than copyright law. Consequently, a balancing test would be a better option, allowing courts to weigh the United States' interest in enforcing its laws and promoting innovation with the risk of creating a foreign conflict.

1. Comity Concerns for Extraterritorial Patent Damages

International law and comity considerations make courts unwilling to interpret a law in a way that creates a conflict with a foreign sovereign, absent express congressional intent. In maritime cases like *WesternGeco*, no foreign conduct is regulated. Although the law of the flag exists, it is but one consideration under federal common law. Even if jurisdiction is claimed by the country whose flag the vessel flies or the country where the relevant contract was entered into, the United States also has a strong interest in making patent infringement victims whole through damages after substantive U.S. patent law has been violated.²⁵⁶

Concerns can arise, however, when another country with territorial jurisdiction has conflicting laws. Suppose that Smith holds a U.S. patent on a powerful drug that cures cancer. Further suppose that Foreign Country does not offer patents on pharmaceuticals, to keep prices low for its citizens, but that no company currently offers Smith's cancer drug due to a lack of adequate production facilities. In violation of § 271(f), U.S.-based USPharma Corporation sells a specialized compound used to make the drug to a pharmaceutical company in Foreign Country, with the intent that it will be combined with other ingredients to make Smith's patented drug and sold abroad. If a U.S. court holds USPharma liable for damages in Foreign Country, that decision will serve as a deterrent to other companies thinking of exporting the compound to Foreign Country, thereby undermining Foreign Country's policy objective of making drugs available to its citizens and decreasing the supply of the drug in

²⁵⁶ Similar concerns exist in contract law. See Nik Yeo and Daniel Tan, *Damages for Breach of Exclusive Jurisdiction*, COMMERCIAL LAW AND COMMERCIAL PRACTICE, 419–20 (noting that “to rely on comity to limit the right to damages” in contract law introduces uncertainty and “without providing sufficient independent justification, allows concepts drawn from private international law to ‘trump’ the domestic right to damages”).

Foreign Country.²⁵⁷ Regardless of the merits of Foreign Country's patent system, such conflicts are undesired.

But why should patent law be treated differently than copyright law? As discussed earlier, several courts have adopted the predicate act doctrine and have awarded extraterritorial damages in copyright cases.²⁵⁸ However, copyright law is fairly uniform. The Berne Convention binds 171 countries and helped harmonize copyright law by eliminating formalities for obtaining copyrights.²⁵⁹ It furthermore created minimum standards of copyright protection for all member states.²⁶⁰ Although prescriptive comity concerns still arise in copyright cases,²⁶¹ the high degree of uniformity limits any conflicts of law.

By contrast, patent law is the most territorial intellectual property right.²⁶² Unlike copyrights or trademarks, patent applications undergo extensive government review prior to issuance,²⁶³ allowing governments to play a major role in shaping claim language. Furthermore, as the Supreme Court in *Microsoft* observed, the Patent Act itself contains explicit territorial restrictions,²⁶⁴ unlike the Copyright Act and Lanham Act.²⁶⁵ The Patent Act prevents non-patent holders "from making, using, offering for

²⁵⁷ Professor Bernard Chao has argued against a worldwide causation theory because of this type of comity concern, noting that companies could seek foreign patent damages based on U.S. law "even if the other country has refused to award a patent for a particular invention and has consciously chosen to provide more modest recoveries to those that are awarded patents there." Chao, *Patent Imperialism*, *supra* note 149 at 87. Chao further argues that such a result would violate prescriptive comity. *Id.*

²⁵⁸ See *supra*, Part III.B.

²⁵⁹ See Daniel Gervais & Dashiell Renaud, *The Future of United States Copyright Formalities: Why We Should Prioritize Recordation, and How to do That*, 28 BERKELEY TECH. L. J. 1459, 1471-74 (2013) (discussing the abolition of formalities for copyright registration and transfers under the Berne Convention).

²⁶⁰ See Graham B. Dinwoodie, *The Development and Incorporation of International Norms in the Formation of Copyright Law*, 62 OHIO ST. L.J. 733, 739 (2001) (discussing the minimum standards of the Berne Convention).

²⁶¹ See, e.g., *Subafilms, Ltd. v. MGM-Pathe Communications, Co.*, 24 F.3d 1088, 1090 (9th Cir. 1999) (holding that "there can be no liability under the United States copyright laws for authorizing an act that itself could not constitute infringement of rights secured by those laws" and maintaining "that wholly extraterritorial acts of infringement are not cognizable under the Copyright Act").

²⁶² See, e.g., Chisum, *supra* note 172 at 605 ("Of the three principal forms of intellectual property, patent rights are most explicitly territorial."); Mark A. Lemley et al., *Divided Infringement Claims*, 33 AIPLA Q.J. 255, 264 (2005) ("Because patent law, unlike copyright, is territorial in nature, those who want worldwide protection must seek patents in multiple countries.").

²⁶³ See Timothy R. Holbrook, *Territoriality Waning? Patent Infringement for Offering in the United States to Sell an Invention Abroad*, 37 U.C. DAVIS L. REV. 701, 704-5 (2004) (observing that that strong territorial nature of patents is based, in part, on government review of patent applications prior to issuance); Graeme B. Dinwoodie et. al., *International and Comparative Patent Law* 30 (2002).

²⁶⁴ *Microsoft Corp.*, 550 U.S. at 455 (observing that "the traditional understanding" that patent law operates domestically and not internationally "is embedded in the Patent Act itself, which provides that a patent confers exclusive rights in an invention within the United States").

²⁶⁵ See Chisum, *supra* note 172 at 605 (observing that the Patent Act confers specific rights limited to the United States, while the Copyright Act is silent regarding territoriality and the Lanham Act

sale, or selling the invention *throughout the United States*” or from “importing the invention *into the United States*.”²⁶⁶ The Supreme Court, moreover, is already known for treating different areas of substantive law differently for extraterritoriality purposes,²⁶⁷ and has stated that “foreign law may embody different policy judgments about the relative rights of inventors, competitors, and the public in patented inventions.”²⁶⁸ Patent law’s territorial nature make comity concerns stronger compared to copyright law.

2. Test for Extraterritorial Patent Damages

The Federal Circuit may not place artificial restraints on the award of damages. Consequently, any test the court uses for awarding extraterritorial damages must be flexible, allowing district courts room to determine whether damages are appropriate. Such balancing tests already exist in areas of law with extraterritorial reach. For example, when applying the Lanham Act extraterritorially, several courts of appeal use a three-part balancing test considering the effect of the defendant’s conduct on U.S. commerce, the citizenship of the defendant, and the likelihood of conflict between U.S. law and foreign law.²⁶⁹ A balancing test could be used in patent law to allow for extraterritorial damages in certain circumstances.

In considering whether extraterritorial damages are appropriate, a court should consider whether awarding such damages would raise prescriptive comity concerns, by considering whether another country’s law governs the case at hand. If another country’s law does apply, then the court should ask whether the court exercising jurisdiction would interfere with the sovereignty of another nation by contravening that country’s patent laws.²⁷⁰

expansively covers all use “in commerce”); Alan M. Fisch & Brent H. Allen, *The Application of Domestic Patent Law to Exported Software*: 35 U.S.C. § 271(f), 25 U. PA. J. INT’L ECON. L. 557, 565 (2004) (observing that “the 1952 Patent Act authorized patent infringement claims only for acts occurring “within the United States”).

²⁶⁶ 35 U.S.C. § 154(a) (emphasis added). Donald Chisum maintains that “[w]ith such explicit provisions, there is no occasion even to consider whether there is a presumption for or against extraterritorial application.” Chisum, *supra* note 172 at 605. However, § 271(f) clearly does have some extraterritorial reach, due to its explicit language “outside the United States.”

²⁶⁷ In addition to applying the trademark law extraterritorially, the Supreme Court denied certiorari to a Ninth Circuit case applying the Sherman Act abroad. *See Timberlane Lumber Co. v. Bank of America Nat’l Trust & Sav. Assoc.*, 749 F.2d 1378 (9th Cir. 1984), cert. denied, 472 U.S. 1032 (1985) (Sherman Act).

²⁶⁸ *Microsoft Corp.*, 550 U.S. at 455 (internal quotations omitted).

²⁶⁹ *See supra*, Part III.A.

²⁷⁰ It may also be worth exploring whether related non-IP doctrines that deal with comity concerns can shed light on how to deal with extraterritorial damages. The doctrine of *forum non conveniens* can allow U.S. litigation to be dismissed in favor of a foreign venue based on factors such as the connection of the plaintiff and the lawsuit to the United States, availability of an adequate alternate forum, and a balancing of public and private interest factors. *See Piper Aircraft Co. v. Reyno*, 454 U.S. 235, 254–56 (1981). Some courts of appeal have also recognized international comity

Any comity concerns should then be balanced against the United States's interest in making victims of domestic patent infringement whole and promoting innovation. If extraterritorial damages are not permitted, will the infringer be sufficiently deterred from engaging in future infringement? Will future inventors choose to not invest money in innovations, say, in off-shore technology due to inadequate remedies? Note that in some cases, innovation may best be promoted by not awarding extraterritorial damages.

Under the balancing test, infringement on the high seas would almost always be actionable due to the lack of conflicting foreign law. In the event that there is a way to make foreign law reach to the high seas conduct, perhaps through the law of the flag, this could be balanced against the need to promote innovation. For cases in which damages are incurred in a foreign jurisdiction, U.S. interests would have to be strong enough—and the conflict of foreign law small enough—to justify an award of extraterritorial damages.

Finally, district courts should ensure that any foreign damages awarded actually flow from the domestic infringement at issue. In *Rite-Hite*, the Federal Circuit noted that “[i]f a particular injury *was or should have been reasonably foreseeable* by an infringing competitor in the relevant market, broadly defined, that injury is generally compensable absent a persuasive reason to the contrary.”²⁷¹ In *WesternGeco*, an argument can be made that the patent holder should not have received damages for lost foreign contracts due to the lack of foreseeability. Ion shipped parts abroad that were combined together outside the United States. Those devices were then sold to third parties which used the devices to offer competing surveying services. Even if courts permit extraterritorial damages, it is not clear that Ion could have foreseen that foreign third parties would compete with WesternGeco for service contracts. Indeed, as some scholars have observed, if *Rite-Hite* is broad enough to reach damages such as those found in *WesternGeco*, than perhaps it should be reconsidered.²⁷²

abstention, which deals with the situation where litigation brought in the United States duplicates on-going foreign litigation, and the U.S. court weights various factors in deciding whether the U.S. proceeding should be dismissed. See *Royal and Sun Alliance Ins. Of Canada v. Century Intern. Arms*, 466 F.3d 88, 93–95 (2d Cir. 2006); Edward Flanders et al., *A Tale of Two Doctrines*, NY L. J. (Jan 14, 2013), available at <https://www.pillsburylaw.com/images/content/5/1/v2/5164/NYLJ-20-20Tale-20of-20Two-20Doctrines-20-20January-202013.pdf> (discussing the differences between international comity abstention and forum non conveniens).

²⁷¹ *Rite-Hite Corp. v. Kelley Co., Inc.*, 56 F.3d 1538, 1546 (Fed. Cir. 1995) (en banc) (emphasis added).

²⁷² See Holbrook, *supra* note 89 at 37 (noting that when foreseeability is stretched too far, it threatens downstream innovation); Mark A. Lemley, *The Fruit of the Poisonous Tree in IP Law*, available at <https://papers.ssrn.com/sol3/papers.cfm?abstractid=2867099> (Nov. 9, 2016), 14–18 (discussing the problem of broad “reach-through royalties” in patent law).

V. Conclusion

The presumption against extraterritoriality is a useful canon of construction for courts that must determine whether federal substantive law includes activities arising wholly or mostly outside the United States. It promotes comity by preventing U.S. law from conflicting with that of foreign countries, and ensures that courts do not extend laws beyond what Congress intended. The presumption furthermore promotes separation of powers, by making it clear that Congress alone decides whether a U.S. law should be applicable abroad.

However, the presumption does not limit the courts' ability to award damages based on foreign conduct. Even if the presumption is applicable to damages provisions, it is rebutted under *RJR Nabisco*. Congress has explicitly stated that it intends for § 271(f) to apply to extraterritorial conduct, and it necessarily follows that § 284 must as well to make infringement victims whole. Furthermore, step two of *RJR Nabisco* is met, because the conduct relevant to § 271(f) and § 284 is domestic, with liability attaching in the United States.

Although courts should have the ability to award foreign damages, this does not mean that they should do indiscriminately. Unlike copyright law, patent law is highly territorial, raising the concern that applying damages to conduct that occurred abroad could conflict with foreign laws. Moreover, the Patent Act is grounded in promoting innovation, so courts must also consider whether awarding more damages in multinational cases would help or hinder innovation. Finally, some damages are too speculative or tenuous to flow from the domestic wrongdoing at issue. Consequently, a balancing test would provide lower courts with the flexibility to award damages to promote innovation when such damages are warranted, after ensuring that the damages would not cause prescriptive comity concerns.

Final Report of the Berkeley Center for Law & Technology Patent Damages Workshop

15 August 2016

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The determination of patent damages lies at the heart of patent law and policy, yet it remains one of the most contentious topics in this field, particularly as regards the calculation of a reasonable royalty.¹ The Patent Act provides that “[u]pon 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, together with interest and costs as fixed by the court.”²

The reasonable royalty floor of awards in patent damages plays a central role in cases brought by non-practicing entities, which are not in a position to make lost-profit claims. In the information and communications technology fields, the reasonable royalty determination often plays out in the context of a patent that was not known by the alleged infringer when it brought its technology to market³ and covers but one feature of a multi-component product that builds upon a large number of technologies, many of which are also patented. Determining a reasonable royalty in these circumstances often strains both remedial principles and economic analysis.

The controversy over the determination of a reasonable royalty has taken on greater importance as courts have tightened the standards for injunctive relief. The principal legal framework for determining a reasonable royalty—the *Georgia-Pacific* list of fifteen factors⁴ including a hypothetical negotiation test—has been widely

¹ See generally THE SEDONA CONF. WORKING GRP., COMMENTARY ON PATENT DAMAGES AND REMEDIES 23 (2014), <https://thesedonaconference.org/download-pub/3827>; U.S. FED. TRADE COMM’N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 8 (2011) [hereinafter “MARKETPLACE REPORT”]; U.S. FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 16–17 (2003).

² 35 U.S.C. § 284.

³ See Peter S. Menell & Michael J. Meurer, *Notice Failure and Notice Externalities*, 5 J. LEGAL ANALYSIS 1, 2–4 (2013) (explaining the strategic aspects of patent notice). Standard-essential patents (SEPs) raise their own specific issues relating to notice, patent holdup, and licensing commitments. The workshop generally steered clear of issues associated specifically with SEPs.

⁴ *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1119–20 (S.D.N.Y. 1970), *modified and aff’d*, 446 F.2d 295 (2d Cir. 1971).

criticized as ambiguous, unworkable, inherently contradictory, and circular.⁵ To date, the *Georgia-Pacific* list has been the main framework used by U.S. courts for reasonable royalty analysis, although that may now be changing with the Federal Circuit Bar Association’s January 2016 Model Jury Instructions (discussed below).⁶

Because the effects of patent damages law on patent assertion strategy, research and development, licensing activity, preemptive patent acquisition, and settlement negotiations are not directly observable, we convened a group of leading “insiders” to clarify areas of consensus and disagreement regarding the treatment of patent damages. The assembly consisted of in-house counsel, litigators (from both the assertion and defense sides), patent licensing professionals, testifying expert witnesses, and academics (both law professors and economists). We sought to explore the state of play in the shadow of patent damages law and ways to improve the process and substance of patent damages law, patent case management, and patent valuation methodology, especially in the information and communications technology sectors.

We began planning the event in August 2015 with funding from Intel Corporation and administrative support from the Berkeley Center for Law & Technology (BCLT). We made it clear to our funders that we would retain complete academic independence in planning and conducting the workshop and would seek to include a broadly representative group of professionals. After identifying the most experienced professionals in the patent damages and licensing fields, we invited approximately three-dozen people for a workshop held on March 3, 2016 in Berkeley, California. We included leading authorities and a wide range of perspectives so as to ensure balance and reasonable opportunity for a wide-ranging exchange of ideas.

We established the following ground rules to promote candid discussion: (1) participants would be free to use the information received, but neither the identity nor the affiliation of the speaker(s) could be revealed; (2) we would prepare a report describing the results of the workshop—and that report would not attribute statements or views to individuals; and (3) the report would list the participants and be made

⁵ See, e.g., William F. Lee & A. Douglas Melamed, *Breaking the Vicious Cycle of Patent Damages*, 101 CORNELL L. REV. 385, 413 (2016); Jorge L. Contreras & Richard J. Gilbert, *A Unified Framework for RAND and Other Reasonable Royalties*, 30 BERKELEY TECH. L.J. 1451, 1479–82 (2015); David O. Taylor, *Using Reasonable Royalties to Value Patented Technology*, 49 GA. L. REV. 79, 143–145 (2014); John C. Jarosz & Michael J. Chapman, *The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog*, 16 STAN. TECH. L. REV. 769, 823 (2013); Christopher B. Seaman, *Reconsidering the Georgia-Pacific Standard for Reasonable Royalty Patent Damages*, 2010 BYU L. REV. 1661, 1704 (2010); Daralyn J. Durie & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 LEWIS & CLARK L. REV. 627, 628–31 (2010); Mark Schankerman & Suzanne Scotchmer, *Damages and Injunctions in Protecting Intellectual Property*, 32 RAND J. ECON. 199, 203 (2001).

⁶ See FEDERAL CIRCUIT BAR ASSOCIATION, MODEL PATENT JURY INSTRUCTIONS 72 (July 2016) [hereinafter “Instructions”].

available to the public through BCLT. Appendix A contains the Workshop Schedule. Appendix B contains the list of participants. This document constitutes that report.

Part I contains a lightly edited version of the background document that we circulated to participants beforehand to frame the discussion. Part II contains a lightly edited version of the summary of patent damages law drafted by Professors Thomas Cotter and John Golden that was used to kick off the workshop. Part III contains our synthesis of the workshop discussion. Part IV sketches case management ramifications of the workshop discussion.

I. Background Memo

The goal of the workshop is for the participants to learn from each other by sharing their perspectives on the performance, good and bad, of the U.S. patent damages system. Participants should come prepared to share their experiences and views, to teach, to listen, and to learn.

The workshop will focus on damages that are based on reasonable royalties, with particular focus on the information and communications technology sector. One of the workshop goals is to identify areas of consensus—even narrow ones—regarding the determination of patent damages. Another goal is to develop a better understanding of how the evolving law and economics of patent damages is influencing patent licensing negotiations, and hopefully vice versa.

The workshop will consist of four sessions, each based around an important perspective: (1) patent law, (2) patent litigation and enforcement, (3) the economics of patent damages; and (4) the business of patent licensing, patent valuation, and patent transactions. In contrast, these reading materials list specific issues that the organizers believe will be of interest to all participants.

A. Choosing and Using “Comparable” Patent Licenses as Benchmarks

In practice, U.S. courts usually determine reasonable royalties based on “comparable” patent licenses, with suitable adjustments made to these comparable licenses to determine reasonable royalties for the patents-in-suit. Indeed, some might say that no other method of determining reasonable royalties has found favor with the Federal Circuit.

In general, does reliance on “comparable” licenses work well, or poorly? How and why?

When a patent license is negotiated, one or both parties may anticipate that the license will be used as a “comparable” in a subsequent patent litigation. Is it common for this prospect to influence significantly the negotiations? In what circumstances is this effect most pronounced?

A circularity can arise when patent damages are determined based on “comparable” licenses. Licenses are negotiated in the shadow of litigation, along with the prospect of patent damages, while those damages are based on the terms of those and similar licenses. This circularity means that license fees and damages awards can become “stuck” at an incorrect level, either too high or too low. Are there ways to avoid this circularity? To the extent this circularity cannot be avoided, does it tend to inflate damage awards or depress them? Does it have other effects, for better or worse?

Most licenses are confidential, so the set of available “comparable” licenses is typically limited to agreements brought forward by the litigating parties. Does this fact create an opportunity to manipulate those benchmarks? Can plaintiffs or defendants strategically create a special category of “comparables” to use in litigation? Are there any practical solutions to these problems that would yield more reliable outcomes while properly respecting the confidential nature of most licenses?

Some “comparable” licenses were negotiated in circumstances where the patent holder had obtained, or was likely to obtain, an injunction against the licensee. A mirror situation may occur if a negotiation proceeds under circumstances where the accused infringer had some significant bargaining advantage. Can such licenses be used as benchmarks? If they are used, is some downward (or upward) adjustment necessary?

Now that more and more patents are bought and sold, can information on the transaction prices for patents usefully inform the determination of reasonable royalties? If so, how? From a practical standpoint, is there a realistic way to utilize the information about reasonable royalties that such transactions provide?⁷

B. Uncertainty and Information in the Hypothetical Negotiation

Licenses are invariably negotiated in the presence of uncertainty about patent validity and infringement. In contrast, for the purpose of determining reasonable royalties, the patent is assumed to be valid and infringed. Do these facts imply that the royalty rates found in the “comparable” licenses must be adjusted upward, at least in principle?

Some courts have been wary of using “comparable” licenses that resulted in settlement of patent litigation. Is this wariness justified, given that all patent licenses are negotiated in the shadow of litigation, whether or not litigation is initiated? More

⁷ For a detailed discussion of the use of “comparable” licenses, see Jonathan S. Masur, *The Use and Misuse of Patent Licenses*, 110 NW. U.L. REV. 115 (2015). For a discussion of the circularity between patent licenses and patent damages, see Lee & McIamed, *supra* note 5.

generally, should licenses resulting from the settlement of litigation be treated differently from other licenses? If so, how?

What should courts assume about the information available to parties in the *ex ante* hypothetical negotiation? Should the court adopt a strict *ex ante* approach and assume that the parties only have information that was available at the time of that negotiation? Alternatively, should the court allow certain *ex post* information to enter into these hypothetical negotiations, along the lines of Justice Cardozo's "Book of Wisdom" doctrine, which allowed the discovery of information post-dating a breach of contract to be used in calculating damages?⁸ If some *ex post* information is used, what limits should the courts place on such information or its use?⁹

C. The Reasonable Range, Bargaining Power, and Rules of Thumb

Under the standard "hypothetical negotiation" framework, the range for reasonable royalties is bounded above by what the defendant/licensee would be willing to pay for a license and below by what a plaintiff/licensor would be willing to accept.

In practice, can the reasonable range sometimes be reliably identified even if a single rate cannot? If so, are certain circumstances especially conducive to identifying such a range? What types of evidence can be used to determine the reasonable range? If an economic expert identifies the reasonable range, what types of evidence are relevant to determining what point within that range to select as the reasonable royalty? Is it appropriate to split the gains from trade evenly, as implied by symmetric Nash bargaining theory?¹⁰ Courts have become increasingly hostile to rules of thumb and to approaches based on Nash bargaining theory.¹¹ Is this hostility justified?

One method for establishing an upper bound on the reasonable range is to calculate the total costs of "designing around" the patent or switching to a non-infringing substitute technology. What are the practical difficulties associated with discovering and presenting evidence on the economic costs of a design-around or non-infringing substitute? What should courts assume about the strength of competition between a patented technology and non-infringing substitutes? Should it depend on the number of alternatives and whether or not they are patented?

⁸ See *Sinclair Refining Co. v. Jenkins Petroleum Process Co.*, 289 U.S. 689, 692-97 (1933).

⁹ For a discussion of the information to be used in the hypothetical negotiations along with a proposal to use a "contingent *ex ante*" framework, see generally Norman V. Siebrasse & Thomas F. Cotter, *A New Framework for Determining Reasonable Royalties in Patent Litigation*, 68 F.I.A. L. REV. 929, 929 (2016).

¹⁰ For an explanation of the Nash bargaining solution, see generally John F. Nash, Jr., *The Bargaining Problem*, 18 ECONOMETRICA 155, 155-62 (1950) and its progeny.

¹¹ Lance Wyatt, *Keeping Up with the Game: The Use of the Nash Bargaining Solution in Patent Infringement Cases*, 31 SANTA CLARA HIGH TECH. L.J. 427, 430-31 (2015).

What should the court do if the defendant's willingness to pay is less than the plaintiff's willingness to accept, so the reasonable range is empty? Does this imply that the appropriate remedy is lost profits rather than reasonable royalties?¹²

D. Apportionment

Patent law regarding apportionment has been evolving in recent years, as reflected in changing doctrines relating to the Entire Market Value Rule, the Smallest Saleable Patent Practicing Unit, and "causal nexus." Have these changes in patent law influenced patent licensing negotiations? More specifically, have they influenced the selection of licensing and litigation targets, or the choice between lump-sum royalties, running royalties based on a percentage of revenues, and running royalties based on a fixed price per unit? Have these changes influenced what patents companies seek to acquire, or even the types of inventions companies patent in the first place? Have they affected the types of R&D projects companies pursue?

Is there any consensus regarding reliable methods for apportionment? How does apportionment interact with the determination of a reasonable range? Does conjoint analysis provide a useful methodology for apportioning value?¹³ Are more conventional survey methods useful for determining the value of patented components of larger systems? Are there other economic or statistical methods in use, or on the horizon, that may offer more robust outcomes?

How are the courts accounting for situations in which many patents read on the same product? Are there realistic and workable approaches the courts can take in such situations? How should evidence regarding the licensing practices of patent pools be used?¹⁴

¹² For a short blog post on the division of the bargaining surplus, see generally Michael J. Chapman & John C. Jarosz, *Rebuttal: It's Not an Inappropriate Reasonable Royalty Rule*, LAW360 (Aug. 21, 2015), <https://www.law360.com/articles/694171/rebuttal-it-s-not-an-inappropriate-reasonable-royalty-rule> (responding to William Rooklidge & Andrew Brown, *The Latest Inappropriate Reasonable Royalty Rule of Thumb*, LAW360 (Jul. 28, 2015), <https://www.gibsondunn.com/wp-content/uploads/documents/publications/Rooklidge-Latest-Inappropriate-Reasonable-Royalty-Rule-Of-Thumb-Law360-07-28-2015.pdf>). For a longer discussion of patent damages and Nash bargaining theory, see generally Lance Wyatt, *Keeping Up with the Game: The Use of the Nash Bargaining Solution in Patent Infringement Cases*, 31 SANTA CLARA HIGH TECH. L.J. 427, 430-433 (2015).

¹³ Conjoint analysis is a statistical technique used to rank or rate the trade-offs consumers make when evaluating different product attributes. See generally J. Gregory Sidak & Jeremy O. Skog, *Using Conjoint Analysis to Apportion Patent Damages*, 25 FED. CIR. B. J. 581, 591 (2016).

¹⁴ See Elizabeth M. Bailey, Gregory K. Leonard & Mario A. Lopez, *Making Sense of "Apportionment" in Patent Damages*, 12 COLUM. SCI. & TECH. L. REV. 255, 256-62 (2011).

E. Portfolio Licensing

Narrowing a trial to some small set of patents-in-suit may be a practical necessity. However, patent negotiations and patent licenses often encompass a broad portfolio of patents and technologies. How does the need to assert a relatively small set of patents feed back into real-world portfolio negotiations, if at all? How can the courts ascertain patent damages based on “comparable” licenses if the most directly comparable licenses are portfolio licenses covering many more patents than are in suit?

F. General Background

All participants are highly experienced in the patent field. But in case you would like to brush up, here are some further reading materials that are relevant to the issues we will be discussing. The Federal Trade Commission published a lengthy report in 2011, *THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION*.¹⁵ In 2011, Daralyn Durie and Mark Lemley suggested ways to structure and simplify the *Georgia-Pacific* analysis in “A Structured Approach to Calculating Reasonable Royalties.”¹⁶ The Sedona Conference has an ongoing project to look at patent damages.¹⁷

II. Patent Damages Law Primer¹⁸

The following is our effort to develop a concise outline of the key statutory, doctrinal, jurisprudential, and case management issues bearing on the determination of patent damages. Our principal focus is on reasonable royalties (including, but not limited to, issues relating to ongoing royalties and FRAND (fair, reasonable, and non-discriminatory) royalties), and not on lost profits, enhanced damages, fees, or the disgorgement of defendant’s profits for design patent infringement.

There is a general (albeit not universal) consensus, both in the law and the commentary, that reasonable royalties should reflect the terms of a hypothetical *ex ante* bargain between the patent owner and the infringer. There are some important theoretical questions concerning exactly what this means, however, and some difficult practical questions about how to turn the framework into an operational legal standard. Below we have listed the ones we think are most important; note, however,

¹⁵ MARKETPLACE REPORT, *supra* note 1.

¹⁶ Durie & Lemley, *supra* note 5, at 636–43.

¹⁷ See SEDONA CONF., PATENT DAMAGES AND REMEDIES (June 2014 Public Comment Version), <https://thesedonaconference.org/download-pub/4489>.

¹⁸ This section was drafted by Professors Thomas Cotter and John Golden with input from the workshop organizers.

that there often is no clear dividing line between what is theoretical and what is merely practical.

A. Theoretical Issues

The hypothetical bargain. A fundamental question is whether a hypothetical bargain framework (whatever its precise details may be, as discussed below) really *is* the correct approach for achieving the goals of the patent system. Are there any flaws in this approach, or any better alternatives?

Timing of hypothetical bargain. The mainstream view is that the hypothetical bargain occurs just prior to the date on which the infringement began. A good theoretical rationale for this time frame is that it helps avoid basing the royalty on holdup value: the amount the owner could extract *ex post* based on the user's sunk costs. If so, however, should the timing ever be moved back even earlier, i.e., to the date before the defendant incurred any sunk costs? This probably would be impractical in many instances, but there is (arguably) an emerging consensus that in FRAND cases the time frame should be the date before the standard is adopted. Is this correct?

Information set. The mainstream view is that the hypothetical bargain should be based only on information that is available to the parties *ex ante*, and that *ex post* information is relevant only as indirect evidence of what the parties would have expected *ex ante* (the “book of wisdom” approach). Nevertheless, there are at least two standard departures from this model: courts assume the parties bargained knowing the patent was valid and infringed (otherwise there is a double discounting problem), and the royalty base often comprises *ex post* revenue. Siebrasse & Cotter argue that the hypothetical bargain should be recast as the bargain the parties would have struck *ex ante* had they been aware of all information that is available *ex post*; this adjustment would result in royalties that could be higher or lower than anticipated *ex ante*.¹⁹ The Sedona Conference and a few commentators also argue for the expanded use of *ex post* information, but would this be advisable?

Non-infringing alternatives. The economic value of the patent to the user is the (actual or expected) profit or cost saving it derives from the use of the patent over the next-best available non-infringing alternative. If the next-best available alternative is another patented technology, however, how should this affect the damages calculation?

Comparable licenses. Unlike hypothetical licenses, actual licenses are likely to be negotiated against a probabilistic assessment of validity and infringement. When comparable licenses are used as indirect evidence of the *ex ante* bargain, should the

¹⁹ See Siebrasse & Cotter, *supra* note 9 at 55.

rate set forth in supposedly comparable licenses be adjusted accordingly, and if so, how?

Entire market value rule and smallest saleable unit. The CAFC has held that experts should not use the “entire market value” as the royalty base unless the patent-in-suit drives the demand for the patented product.²⁰ Does this rule make sense as a theoretical matter? If it is only necessary to avoid misleading the jury, should it be applicable only in jury cases? To what extent should reasonable royalties reflect the price of the smallest saleable patent-practicing unit?

FRAND cases. Should courts take into account, and juries be instructed about, the need to avoid patent holdup and royalty stacking? Should courts exclude any value attributable to the inclusion of the patent in the standard, and if so, what exactly does this mean?

Ongoing royalties. Should the rate of an ongoing royalty awarded in lieu of an injunction exceed the prejudgment rate? If so, why, when, and by how much?

B. Practical Issues

Factors and evidence. What sort of practical evidence is best suited to shed light on the terms of the hypothetical bargain? How should courts evaluate whether comparable licenses really are comparable? Should the *Georgia-Pacific* factors be recast to focus on a smaller number of economically relevant issues and evidence (such as comparables, the benefits of the invention over non-infringing alternatives, the extent to which the defendant has used the invention, and the value that users derive from the invention)?

Methodologies and presumptions. There is a broad consensus among economists that there was little evidentiary support for the now-discarded 25% Rule of Thumb as it appears to have been commonly applied in the United States. But was the CAFC also right to cast doubt on the use of the Nash bargaining framework?²¹ Do experts and triers of fact need to make some (rebuttable) presumption about how the parties would have divided up the surplus from the use of the invention? What about other novel methods for estimating damages, such as conjoint analysis? Relatedly, what should courts do when there are no closely comparable licenses? Are there any industry-wide standard rates that could be used or developed?

Failures of proof and reasons for flexing standards of proof. As a legal matter, are courts obligated to award a reasonable royalty even when neither party offers competent proof as to the amount of damages? If so, how? Should the intensity of

²⁰ See *LaserDynamics, Inc. v. Quanta Comput., Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2012).

²¹ See *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1331–1332 (Fed. Cir. 2014).

demands for proof of damages respond to context-dependent factors such as the magnitude of the award sought, the nature of reasonably available evidence, and the relative blameworthiness of the parties?

More generally, since no one can ever be entirely certain what the state of the world would have been but for the infringement, which party—the patent owner or the infringer—should bear the risk of imprecision? Is there an optimal tradeoff between accuracy in calculation and expediency in adjudication?

FRAND cases. In FRAND cases, should courts assume there is an aggregate royalty cap, and if so, based on what evidence? Should courts weight all patents equally or award a higher royalty to the more important SEPs—and if the latter, what proportion of aggregate royalties should flow to the important patents? Should courts assume that some percentage of declared SEPs are not, in fact, essential, and if so, based on what evidence? Are pool rates ever comparable?

Timing of damages procedure. How and when should discovery on damages questions proceed? When should courts address questions about the existence or magnitude of provable damages? Should courts bifurcate liability and damages more frequently than they currently do?

Experts. Should courts make more use of neutral experts? Should courts be more skeptical about experts who derive their facts from the party that hires them? More generally, what does the *Daubert* requirement of relevance and reliability demand with respect to expert testimony on reasonable royalties?²²

Juries. Should juries be required to provide more information, through the use of special interrogatories, about how they calculate damages? How should juries be instructed on the computation of reasonable royalties?

III. Workshop Discussion: The State of Play and Areas of Agreement and Disagreement

The workshop was divided into four sessions: (1) Major Current Issues in Patent Damages Law; (2) Patent Litigation: Reports from the Front Lines; (3) Expert Economic Testimony: How Can We Narrow the Gap?; and (4) Patent Damages and Business Reality – Connected or Not? Each session ran for about an hour. We finished the day with an hour of general discussion. The moderators briefly summarized key issues (as reflected in the background memo (Part I) and patent damages primer (Part II)) after which open discussion following a queue unfolded.

²² See *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589–590 (1993).

As noted above, we focused discussion on a particular subset of patent damages: the determination of a reasonable royalty in cases involving products or services featuring multiple technologies and patents. We chose to avoid delving into FRAND/SEP cases, although some of the participants argued that the same damages methodologies ought to be applied to standard setting and non-standard setting contexts.²³

The discussion crossed session lines over the course of the workshop, although we sought to ensure that those with particular session-specific expertise were front and center in the most appropriate sessions—i.e., legal scholars in Session 1, litigators and in-house counsel in Session 2, economists and testifying experts in Session 3, and in-house counsel and licensing professionals in Session 4.

Where we report “consensus” in this report, it reflects the authors’ collective sense that a substantial majority of workshop participants agreed with the statement in question. Reports of consensus should not be interpreted as indicating unanimity. While we made efforts to include a variety of perspectives among the participants, we make no claim that “consensus” at the workshop necessarily indicates consensus among some broader set of interested parties.

A. The Overarching Legal Framework

1. Framing the Reasonable Royalty Calculation

The *Georgia-Pacific* fifteen-factor framework for determining a reasonable royalty reflects an amalgam of damages principles: (1) tort—compensation for invasion or loss of a property right; (2) promoting progress in the useful arts; and (3) a market-based measure of an idealized *ex ante* negotiation. All participants agreed that the framework was so broad and open-ended as to permit a wide range of reasonable royalty results. The discussion quickly moved to practical application.

2. Incremental Value

There was general agreement that the patent holder is entitled to a royalty based on the value contributed by the patented invention and that this will generally be less than the entire value of multi-component/feature devices or services. Most participants agreed that a reasonable royalty must fall between the threat points established by parties’ best feasible alternative options. Giving primacy to the incremental value of the patented technology as an upper bound of reasonable royalties could go a long way toward simplifying and prioritizing the *Georgia-Pacific* laundry list of fifteen factors.²⁴ Where within the bargaining range the reasonable

²³ See Contreras & Gilbert, *supra* note 5 at 1504.

²⁴ *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1119-20 (S.D.N.Y. 1970), *modified and aff’d*, 446 F.2d 295 (2d Cir. 1971).

royalty should fall is difficult to determine, but Nash bargaining theory can be used for this purpose.

Incremental value can focus on cost-saving or demand-enhancing innovation. Estimating damages is often far easier for cost-saving inventions, where an expert can map engineering estimates of technical performance onto some measure of cost savings.²⁵ By contrast, calculating damages for consumer-facing inventions that shift out the demand curve for a complex product tends to be more conceptually and methodologically difficult. Participants generally agreed that it is unrealistic for courts to “yearn for certainty” in considering such valuation methods. Nonetheless, it would be very helpful to identify more reliable ways to value patents and to estimate incremental value.

Estimating reasonable royalties for a demand-enhancing invention often involves econometric techniques such as demand estimation, hedonic regression, or conjoint analysis techniques, which turn critically on assumptions, quality and quantity of data, significance of the patented technology, nature of the marketplace, attributes of the products/services, and trade-offs.²⁶ Hedonic regression and conjoint analysis were developed for other fields (such as measuring environmental harms and real estate value) and hence are still in a relatively primitive stage of development and not commonly used in patent valuation. These methods may work relatively well for particular types of valuation, such as real-estate transactions, where there are rich, publicly accessible data sources and decades of experience. However, the applicability of these methods and availability of data for patent valuation are highly context-dependent. Since much of the data relevant to patent valuation is proprietary, there is far less development of these techniques within the academic literature.

Judges may lack a sound understanding of whether sophisticated empirical techniques are likely to work well for a particular patent case and how they can be misused by expert witnesses. Yet such estimation techniques may be the most appropriate method in some cases. Several participants expressed the concern that conservative courts tend to favor “comparable” licenses—even when those sources suffer more profound limitations—because the methodology is easier to comprehend. Establishing best practices to make relatively sophisticated quantitative valuation

²⁵ Of course it is not possible to completely escape “demand side” considerations, even when considering a cost-reducing technology, since firms generally alter prices in response to a change in costs.

²⁶ Broadly speaking, hedonic regression attempts to isolate the value attributable to a patented invention by comparing prices from market transactions involving products that do and do not incorporate the technology. Conjoint analysis makes the same comparison, but relies on data obtained from asking consumers to evaluate hypothetical decision scenarios. Both of these methods typically measure the consumer’s willingness to pay for the patented feature, which need not equal the would-be licensee’s willingness to pay.

techniques more reliable in practice would be a valuable step forward. The use of court-appointed experts could help in this respect.

The discussion did not delve deeply into issues of timing, but there was general agreement that the hypothetical negotiation should be timed so as to avert patent holdup. The timing issue is often critically important in high value cases.

Several participants also pointed out that methods based on apportionment and emerging legal principles such as the Entire Market Value Rule (EMVR) and the Smallest Saleable Patent Practicing Unit (SSPPU) can create a false impression that it is appropriate to conduct separate inquiries into the royalty rate and the royalty base. In practice, these numbers are simultaneously determined, and ultimately they are best analyzed together.

3. Comparable Licenses

With the demise of the 25% rule and other non-specific apportionment methods,²⁷ much of the discussion focused on the use of comparable licenses to establish the value of particular patents within a device or service. It was widely agreed that truly comparable licenses are rarely available to resolve the types of disputes that reach advanced litigation stages. A threshold question is whether one patent is truly “comparable” to another as regards the reasonable royalty.

The context of such litigated disputes typically is far from that of the idealized licensing scenario in which parties negotiate an *ex ante* license for a comparable patent. In many real-world cases, the alleged infringer was unaware of the patent at issue at the time it developed and launched its product or service. Furthermore, such products and services often incorporate multiple technologies. Another complication arises when a purported “comparable” license involves the licensing of a larger patent portfolio, not merely the patent(s) in suit.

Participants expressed concerns about the courts’ heavy reliance on “comparable” licenses, citing the following considerations:

- Absence of a clear method for determining comparability.
- Comparability is often not a binary (comparable/non-comparable) issue but rather a matter of degree.
- Licenses used as comparables may involve the transfer of other value, such as know-how.

²⁷ See *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1317 (Fed. Cir. 2011).

- Where clear “rules” exist, they are often inappropriate, such as automatically excluding licenses that emerge from settlement negotiations.
- In cases involving only one or a few individual patents, employing portfolio comparables to set prices is seldom appropriate.
- Comparables can be “polluted” by successful attempts at hold-up or strategic negotiating with an eye on future litigation.
- Strategic disclosure of licenses for purposes of skewing patent valuation deserves notice and attention.
- Circularity and/or simultaneity can arise when licenses are negotiated in the shadow of litigation, which itself looks to “comparable” licenses to establish a reasonable royalty.
- Real-world licenses are negotiated with unresolved uncertainty about patent validity and infringement, but the hypothetical negotiation assumes certainty about both. This assumption generally calls for a higher rate than that provided in the comparables, but there is no adequate method for determining the correct “markup.”

Several participants discussed efforts to develop licensing databases as a possible solution to the dearth of resources for assessing patent valuation. Some experienced litigators expressed skepticism that such databases would be of much use in revealing case-specific patent value due to the confidential nature of many licenses and the particularities of patents and alleged infringing activities. Nonetheless, a consensus emerged that having a better understanding of licensing activity might well provide more useful benchmarks and reasonable ranges for patent damages, thereby reducing unreasonable “lottery” outcomes.

Interestingly in light of judicial resistance to using a product’s entire market value as a royalty base, licensing professionals, in-house counsel, and litigators noted that many licenses are based on the entire market value of products, even when a patented technology is a relatively small component of the overall system. They explained that such deal elements reflect pragmatism over precision, a point to which we will return in discussing potential ramifications.

B. Expert Testimony

Participants generally agreed that the Federal Circuit’s recent patent damages jurisprudence is inconsistent, providing fodder for district judges both to play a robust gatekeeping role and to allow many aspects of expert testimony to be admissible. The contradictory character of these Federal Circuit rulings is causing consternation for litigants, experts, and companies.

Participants also recognized that many trial judges consider experts testifying about patent damages to lack credibility, to say the least. One experienced litigator, referring to these experts, described their main attribute as “a diminished sense of embarrassment.” The economic experts conceded that the “lower end” of the expert pool contains some testifying experts who provide little insight, and suggested that courts can justifiably exclude “ipse dixit” expert reports describing vast amounts of background evidence but providing only scant analysis (a paragraph or two) for the proposed royalty rate and base. At the same time, the experts argued that courts should not be seeking to exclude expert opinion simply because the two sides produce widely disparate damage estimates.

Opposing experts may reach very different opinions as to the reasonable royalty amount due to: (a) reliance on different (yet potentially valid) methodologies; (b) clients’ provision of different facts; and/or (c) instructions from counsel to make different assumptions.

There was broad agreement around the idea that the root cause of differences in expert opinion is often obscured, particularly in a jury trial. A number of suggestions were floated for encouraging greater transparency into the data, methods, and assumptions behind expert testimony, as an alternative or complement to *Daubert* practice. For example, court-appointed experts could help identify the underlying causes of sharply differing expert opinions; we discuss the use of court-appointed experts below. Similarly, a “hot tub” approach such as that used in the U.K. and Australia, by forcing the opposing experts to engage directly with each other, could expose the root causes of their differing opinions. There was also consensus that generally accepted expert “codes of conduct” would tend to allow experts to stand by results that they arrived at credibly, and to generate more consistent testimony for courts (see below).

C. The Licensing Marketplace

1. Patents versus Portfolios

There was a consensus that portfolio licenses are common in the information technology sector, creating a large gap between the business reality of portfolio licensing and the patent-by-patent nature of patent litigation and patent damages. This gap creates evidentiary problems and exacerbates disagreements between licensees and licensors when negotiating over information technologies.

Some licensors conceded that large corporate licensees faced a difficult problem in estimating the total royalty burden for a particular product given the high patent grant rate, the trend towards fragmented ownership of patents, and the difficulty of pre-clearing rights. However, the same licensors suggested that large corporate licensees may engage in “rational infringement” after comparing expected benefits to

costs, based on what licensors perceive to be low overall royalty burdens, the difficulty of many patent holders (notably NPEs) in obtaining injunctive relief, and recent changes considered defendant friendly (notably post-grant review in the USPTO and the Supreme Court's *Alice*²⁸ decision).²⁹

Licensees argued that intellectual property is one of the least predictable costs for their products, and if they are reluctant to take a license, that reluctance reflects the risk that a host of additional patent owners will emerge from the thicket as soon as a license is signed. This problem is exacerbated by heavy reliance in litigation on comparables, since any license will tend to establish a focal price for damages involving similar patents or products.

Participants generally agreed that patent valuation by courts ought to reflect the broader licensing environment. The existence of many patented substitutes offering functional equivalence to a given patented technology is relevant for assessing design-around costs and can provide a sense of the overall thicket. Moreover, if there are complementary patents covering a single product but left unenforced by other owners, the damages calculation should not automatically re-assign the value of those complements to a litigant patentee by default. More generally, the legal rules governing patent damages should not allow the most aggressive licensors to capture a disproportionate share of the value associated with the entire bundle of technologies, particularly when—as is often the case in IT—substantial value resides in the complements. At the same time, the owner of a large patent portfolio may face substantially more risk on questions of invalidity and infringement in a lawsuit focused on one or a handful of patents than in a negotiation to license a much larger set of patents.

Several participants remarked that issues relating to royalty stacking are difficult to address properly when calculating reasonable royalties, even in cases where royalty stacking is economically important. This obstacle was said to arise in part because of difficulties in developing reliable evidence concerning royalties that the defendant is paying on other patents. Developing reliable evidence was said to be even more difficult concerning what additional royalties the defendant will likely be paying in the future. Licensees expressed strong concerns about royalty stacking, while licensors were skeptical that royalty stacking was a significant issue in most cases.

Evidence from patent pools can be informative regarding reasonable royalties for individual patents in situations where the infringing products or services practice a large number of patents. However, care must be taken to identify possible

²⁸ See *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2360 (2014).

²⁹ Companies that attempt to evade paying reasonable royalties for patents they are infringing will be more likely to be subject to enhanced damages following the Supreme Court's recent decision. See *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1935–1936 (2016). (This decision was pending at the time of the workshop).

systematic differences between the patents licensed through a pool and the patents in suit, especially since patent holders normally can choose whether or not to contribute their patents to a pool.

More generally, courts should avoid over-rewarding a licensor holding only a handful of patents from a fragmented and largely undifferentiated set. If portfolio licenses are highly nonlinear, with the price of the marginal patent declining quickly as the number of patents in the deal increases, then awarding several patentees the price on the first few patents in a portfolio will produce stacking problems. That outcome may create incentives among patentees to disaggregate large portfolios in a manner that will increase transaction costs and create economic inefficiency.

2. Licensing versus Litigation

Opinions differed on how the “shadow” of court-awarded damages influences license negotiations. Licensees indicated that they pay close attention to large damage awards. Licensors argued that while enforcement ultimately matters, a variety of other issues tend to exert more influence in practice. Some licensors viewed long-term infringement and “patent hold-out” as significant problems for patent enforcement, based in part on concerns that patent damage awards do not fully compensate patent holders for such extended periods of infringement.

Licensors indicated that the AIA/PTAB review processes³⁰ and the *Alice* and *eBay*³¹ decisions have had a substantial downward impact on negotiated royalty rates by increasing the risk of an invalidity finding and reducing the availability of injunctive relief. It is worth noting, however, that the *eBay* decision increases the importance of the damages calculation since it will also affect the ongoing royalty rate. In contrast, increasing invalidation rates due to AIA and *Alice* tend to support higher discounting of the anticipated results of any damages calculation during any pre-suit negotiations. Others pointed out that “downward pressure” may be appropriate if, prior to the changes, the totality of the rules tended to produce patentee overcompensation.

D. Pragmatism versus Precision

A substantial portion of the discussion in Sessions 2, 3, and 4 revolved around the inherent tension between pragmatism and precision in determining a reasonable royalty. Several experienced litigators, licensing professionals, and economists emphasized the inherent imprecision of patent valuation for systems technologies. Businesses do not typically value patents as part of their ongoing operations. Thus, the reasonable royalty calculation is a legal construct that can turn on a wide range of

³⁰ Referring to the American Invents Act, Pub. L. 112-29, 125 Stat. 284-341 (2011), and the USPTO’s Patent Trial and Appeal Board.

³¹ See *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 394 (2006).

information, much of which is qualitative. This situation produces litigation and trials that focus more on the imprecision and impressions of economic valuation methodologies as well as the charisma of witnesses than on the types of information that businesses tend to rely on in making decisions.

These participants noted that damages experts are often drawn to “data” rather than more pertinent internal documents. The observation is reminiscent of the joke about the economist looking for car keys under the lamppost.³² By contrast, qualitative internal documents and survey data drawn directly from the alleged infringer’s decision-making about the product design, engineering, testing, and marketing can be especially helpful, but might not fall within the testifying expert’s empirical methods. On the other hand, internal documents can be self-serving.

As one litigator noted, early Supreme Court cases establishing apportionment principles relied upon qualitative evidence—documents and percipient witnesses—to assess the nature of the patented invention, its utility, and its extent of use. The modern doctrine elevates empirical methods, resulting in battles of the experts and *Daubert* challenges, over more direct forms of evidence. As a result, courts often must evaluate complex quantitative analysis that might have only a tenuous relationship to the particular case. This pushes the litigation toward flaws in the methodological tools as opposed to evaluation of business decisions.

Other participants, however, emphasized that failure to provide a full understanding of valuation for system technologies risks lottery-type awards for individual patents that may add little if any incremental value. Tight trial time limits and evidentiary limits on presenting the full range of factors affecting system value exacerbate these concerns. Over-valuing individual patents infringed by complex technologies can also contribute to stacking problems by creating incentives for patentees to monetize more patents through both sales and enforcement.

IV. Case Management Ramifications

The following points reflect the workshop discussion as well as ramifications that we draw from those comments.

A. Early Vetting of Methodologies

Some courts have begun to consider patent damages issues early in patent cases in efforts to encourage alternative dispute resolution, anticipate *Daubert* concerns,

³² After helping the economist scour the ground for several minutes, the good Samaritan asks why the economist is looking on the opposite side of the street from where the car is parked, to which the economist responds “because the light is much better under the lamppost.”

and plan case management.³³ Parties in most cases do not focus the same energy on damages that they do on liability issues, in part because districts that require comprehensive liability disclosures do not require them for damages. District courts have struggled to resolve disputes about whether the methodology used by a damages expert to reach his or her conclusions is both legally viable and reliable, or whether he or she applied that methodology reliably to the facts of the case before trial. Although courts have the tools to resolve such disputes early, they are rarely raised before the pretrial stage. As a result, a court that believes a damages expert's opinions may not be reliable usually faces imperfect options: (1) excluding the expert and leaving the party with no expert testimony regarding damages at trial; (2) continuing the trial date and providing the party proffering the expert a do-over; or (3) allowing the testimony, despite its reservations, with the hope that the jury will see the weakness in the opinions and with the intent that, if not, the court will correct the outcome through remittitur, JMOL, or a motion for new trial.³⁴

Under Federal Rule of Civil Procedure 26(a)(1)(3), a party claiming damages must provide as part of its initial disclosures "a computation of each category of damages claimed" and produce the documents and materials on which each computation is based. However, courts have not used this provision to compel a meaningful, early disclosure of the amount of damages claimed or the method by which they are computed in patent cases, apparently believing that claim construction and some damages discovery is necessary before a meaningful disclosure can fairly be compelled.³⁵ The parties usually exchange infringement and invalidity contentions during fact discovery, either in accordance with local rules or through interrogatory responses, which ensures that both parties are aware of the theories of infringement and invalidity in the early to middle stages of the case. By contrast, the parties' first disclosure of damages theories typically comes through the exchange of expert reports served after the close of fact discovery and concurrently with expert reports regarding infringement and invalidity. This creates two problems. First, because parties have not yet taken positions about damages, they cannot raise with the court in the early or middle portions of a case potential legal flaws or other issues that may

³³ See PETER S. MENELL ET AL., PATENT CASE MANAGEMENT JUDICIAL GUIDE §§ 2.1.1.5, 2.6.6 (3rd ed. 2016); S.D. IND. PATENT CASE MANAGEMENT PLAN III(E) (Nov. 3, 2014), <http://www.insd.uscourts.gov/case-management-plans> (requires that plaintiffs serve a "preliminary statement of damages, if any, and make a settlement demand" no later than 5 months from the Anchor Date); RULES OF PRACTICE FOR PATENT CASES IN THE SOUTHERN DISTRICT OF TEXAS 3-2(a)(4) (Jan. 1, 2008), <http://www.txs.uscourts.gov/sites/txs/files/rules.pdf> (requiring production of "license agreements for the patents-in-suit").

³⁴ See, e.g., *Intellectual Ventures I LLC v. Xilinx, Inc.*, 2014 U.S. Dist. LEXIS 54900, at *4 (D. Del. Apr. 21, 2014) (refusing to allow patentee's expert to revise his report after determining the report was unreliable, forcing the patentee to rely on the defendant's expert testimony instead); *Golden Bridge Tech. Inc. v. Apple, Inc.*, 2014 U.S. Dist. LEXIS 67238, at *36-37 (N.D. Cal. May 14, 2014) (striking damages expert's report but permitting a do-over on the eve of trial); *Golden Bridge Tech. Inc. v. Apple, Inc.*, 2014 U.S. Dist. LEXIS 76339, at *5-6 (N.D. Cal. June 1, 2014) (striking damages expert's do-over report and denying a second do-over, as trial had begun).

³⁵ See MENELL, *supra* note 33, at § 4.2.2 (3rd ed. 2016).

render an expert opinion unreliable, as is commonly done with respect to disputes about infringement and invalidity theories. Second, *Daubert* challenges are necessarily relegated to the end of the case.

These problems reflect fundamental differences between the nature of infringement/invalidity contentions and expert damages contentions. Infringement and invalidity contentions are grounded in physical, documentary facts, and reasonable inferences—the scope of the claimed invention, the characteristics of the accused device/process/composition, and prior art references. The parties are able to develop their infringement/invalidity contentions based upon relatively tangible forms of evidence. The main uncertainty, which the infringement/validity contentions help to crystallize, relates to claim construction. By contrast, expert damages contentions depend on a broad range of factors and evidentiary sources as well as claim construction. Expert witnesses often cannot come up with reliable numerical estimates until they get all the evidence in hand and have time to conduct their analysis. Nonetheless, it may be reasonable and advantageous in at least some classes of cases to ask parties to identify the damages estimation models/theories/approaches and the range or order of magnitude that these methods are likely to produce earlier than has been common in the case management timeline. Recognizing these systemic problems, courts have begun experimenting with various mechanisms to encourage proper vetting of damages positions and opinions earlier in the case schedule. Here are several options:

1. Damages Contentions

In jurisdictions that presently require parties to exchange infringement and invalidity contentions, the patentee could be required to provide damages contentions that (1) identify the type of damages sought (lost profits, reasonable royalty, or both); (2) provide an explanation of the specific theories and methodologies the patentee intends to use to value the infringement for which damages are sought; and (3) identify a range within which its ultimate damages number for each accused instrumentality is expected to fall. To enable the patentee to provide this information reliably, the accused infringer could be required to produce, along with its invalidity contentions, financial documents related to the accused instrumentalities (just as the patentee is presently required to produce technical documentation concerning the accused instrumentalities). The patentee's deadline for serving such damages contentions could be set at a reasonable time (e.g., forty-five days) after the accused infringer's document disclosure. Although not specifically directed to expert testimony, these disclosures would require the patentee to identify its theories early in the case, would enable the accused infringer to disclose rebuttal damages theories in response to a contention interrogatory served during fact discovery, and would put

parties in a position to challenge each other's legal and factual bases for damages positions earlier in the case.³⁶

2. Accelerated Discovery Schedule for Damages

The court could elect to set an accelerated schedule for fact and expert discovery related to damages. For example, the court could require all damages-related discovery to be completed within two to three months before the fact-discovery deadline for other issues, and then require expert reports regarding damages to be served within a reasonable time thereafter (e.g., by applying the same gap between the close of damages discovery and service of the opening damages report as is set between the close of liability discovery and service of opening liability reports). Because it would allow the court to set a damages-related *Daubert* schedule that starts two to three months before summary judgment, this approach would provide sufficient time for the court to allow a one-time opportunity for a party whose proffered damages opinions are excluded to correct the deficiencies, if that opportunity is warranted, without moving the trial date. One notable example of an accelerated schedule for damages discovery is the so-called Track B in the Eastern District of Texas. The Track B Initial Patent Case Management Order was designed to complement the existing patent-case-management scheme (Track A).³⁷ Under Track B, the parties are required to submit a "good faith damages estimate" early in

³⁶ See, e.g., JUDGE SUE ROBINSON, PATENT SCHEDULING ORDER, § 1(c)(2) (Feb. 15, 2015), <http://www.ded.uscourts.gov/sites/default/files/Chambers/SLR/Forms/Sched-Order-Patent2-05-15.pdf> (requiring the plaintiff to identify its damages model and accused products as part of its initial disclosures); *In re West View Research, LLC Patent Cases*, 2015 WL 10382418, *3-4 (S.D. Cal. Apr. 25, 2015) (Judge Cathy Ann Bencivengo requiring the plaintiff to serve on each defendant a preliminary damages disclosure identifying the period for which it contends that defendant is liable for damages and the nature of the damages it will seek, lost profits and/or reasonable royalty; if plaintiff is seeking a reasonable royalty, in whole or as part of its damages, plaintiff will identify the royalty base to which it contends a reasonable royalty may apply and whether any apportionment would be appropriate; and all license agreements it has entered into covering the patents at issue, whether entered into before or after the start of a litigation (i.e., licenses arising from settlement of litigation); *Eon Corp IP Holding LLC v. Sensus USA Inc.*, 2013 U.S. Dist. LEXIS 32632, at *12-13 (N.D. Cal. Mar. 8, 2013) (explaining that although early damages disclosure was ideal in theory, the many variables (type of defendant, product, availability of information that courts and plaintiffs must consider in such disclosures makes their practice "challenging"; but, nonetheless, that "an early estimate of the order of magnitude of damages at issue (e.g., less than \$10 million; \$25 million; more than \$100 million) is important to the application of the principle of proportionality set forth in Federal Rule of Civil Procedure 26(b)(2)(C)(iii) to ascertain the burden and expense of discovery that is warranted"). In January 2017, the Northern District of California announced amendments to its Patent Local Rules requiring early disclosure of damages contentions. See United States District Court, Northern District of California, Patent Local Rules, Rules 3-8, 3-9 (added Jan. 27, 2017), <http://www.cand.uscourts.gov/localrules/patent>; Scott Graham, *New Patent Litigation Rules Require Earlier Damages Estimates*, THE RECORDER (Feb. 3, 2017), <http://www.law.com/therecorder/almID/1202778385361/?slreturn=20180001184616>.

³⁷ CHIEF JUDGE LEONARD DAVIS, GENERAL ORDER 14-03 GENERAL ORDER REGARDING TRACK B INITIAL PATENT CASE MANAGEMENT ORDER (Feb. 25, 2014), <http://www.txcd.uscourts.gov/sites/default/files/goFiles/14-03.pdf>.

the case and are afforded significantly less discovery than under Track A. Track B, however, implements a much tighter schedule than Track A, presumably to facilitate early disclosure of infringement and invalidity contentions. Both parties can consent, or the court can order, the case to be put on Track B.

3. Early Consideration of Daubert Challenges and/or Damages Theories

Courts could set an early schedule for consideration of *Daubert* challenges in appropriate cases. Alternatively, the court could vet the core damages theories early, leaving opportunity for narrower challenges after discovery and completion of the final expert report.

Judge Alsup's experience with early submission of an expert damages report in *Oracle America, Inc. v. Google Inc.*,³⁸ however, was not regarded as a complete success. Although the vetting process did not meet with his expectations, he was able to set some parameters on acceptable damages theories (foreshadowing the Federal Circuit's decision in *VirnetX, Inc. v. Cisco Sys., Inc.*³⁹) and warn the parties of the risks of questionable methodologies.

A problem with moving the *Daubert* challenges earlier in case management is that it can front-load some of the most complex, time-intensive, and expensive discovery. This discovery might not be necessary in those cases where claim construction might result in summary judgment for the defense or where settlement could occur. It also adds another complex pre-trial phase beyond claim construction. Thus, it can exacerbate the already high overhead of patent cases.

B. Appointing Independent Experts

Participants varied in views about the desirability of court-appointed damages experts. Such an approach can reduce the polarization that often ensues. Court-appointed experts pose various pragmatic issues, such as cost and ensuring their access to the most pertinent data. Yet experts working with one side might not have much access to the full range of data either. The hope is that the adversarial process will surface those issues in such a way that the judge and/or jury can determine the pertinent evidence.

There is also concern that a court-appointed expert will be seen as having the judge's imprimatur. Jurors often (and appropriately) develop great respect for the trial judge. Having a court-appointed expert thus can have the effect of putting a thumb on the side of the scale where that expert comes out. Views differ on whether this is beneficial or detrimental to reasoned and balanced jury decision-making, but judges

³⁸ *Oracle Am., Inc. v. Google Inc.*, 798 F. Supp. 2d 1111, 1121–22 (N.D. Cal. 2011).

³⁹ *See Virnetx, Inc., v. Cisco Sys., Inc.*, 767 F.3d 1308, 1332–34 (Fed. Cir. 2014) (questioning the Nash bargaining solution as an apportionment theory).

need to manage the use of court-appointed experts carefully to define the expert's role and suitably limit the expert's impact on the jury.

Having a court-appointed expert raises a variety of practical issues, such as the selection process for the expert, how communication between the judge and the expert occurs (i.e., must the parties always be present, should the communication be transcribed, when may the parties see the transcripts), access to information for the expert's analysis/report, and representation of the expert during depositions.

C. Judicial Guide to Patent Valuation Methodologies

The lack of a systematic reference guide written for federal judges on the applicable econometric techniques, including hedonic regression and conjoint analysis, contributes to the confusion about patent valuation methodologies. The Federal Judicial Center provides various such guides in its REFERENCE MANUAL ON SCIENTIFIC EVIDENCE.⁴⁰ This volume, prepared in conjunction with the National Research Council of the National Academies of Science and Engineering, provides authoritative treatment of forensic analysis, DNA identification evidence, statistics, multiple regression, survey research, economic damages, exposure science, epidemiology, toxicology, medical testimony, neuroscience, and mental health evidence. The chapters on statistics, multiple regression, survey research, and economic damages provide useful models for developing a guide on patent valuation methodologies.

D. Expert Witness Code of Conduct

Participants generally agreed that the U.S. adversarial system often leads to polarization of expert analysis. Testifying experts noted that they work with the data, evidence, and assumptions that their hiring litigators provide. This information can be incomplete. Furthermore, budgetary and advocacy pressures can limit or skew expert testimony. In addition, many economic damages theories are open-ended. Moreover, the *Georgia-Pacific* framework invites wide expert discretion. These considerations have tarnished the view of economic damages experts in the view of many judges. The patent damages field is widely perceived to be prone to the "hired gun" abuse.

Several participants suggested that the reliability of testifying experts could be enhanced by the federal courts—by Supreme Court changes to the Federal Rules of Civil Procedure or the Federal Rules of Evidence or by local rules—establishing an

⁴⁰ COMMITTEE ON THE DEVELOPMENT OF THE THIRD EDITION OF THE REFERENCE MANUAL ON SCIENTIFIC EVIDENCE & COMMITTEE ON SCIENCE, TECHNOLOGY, AND LAW POLICY AND GLOBAL AFFAIRS, FEDERAL JUDICIAL CENTER & NATIONAL RESEARCH COUNCIL, REFERENCE MANUAL ON SCIENTIFIC EVIDENCE (3rd ed. 2011).

expert code of conduct. The United Kingdom provides a useful model.⁴¹ The PROTOCOL emphasizes that the testifying expert has an “overriding duty,” before compliance with any relevant professional code of conduct, to assist the tribunal and that this obligation overrides any obligation to the person instructing or paying them.⁴² They are to provide opinions that are “independent, regardless of the pressures of litigation.”⁴³ The PROTOCOL further provides that “[i]f experts consider that those instructing them have not provided information which they require, they may, after discussion with those instructing them and giving notice, write to the court to seek directions.”⁴⁴

E. Affording Sufficient Opportunity to Apportion Value

Many participants highlighted the practical, evidentiary, and case management limitations on presenting an adequate understanding of the patents, technologies, and other factors bearing on the apportionment of value in multi-component/feature devices, systems, and services. Such evidence is essential for avoiding the royalty stacking concerns, but risks substantially expanding the scope of the evidence introduced.

Many courts exacerbate these challenges by significantly limiting the time for presenting a case to the jury. While time limits often help to focus the understanding of validity and infringement issues, they can severely limit the presentation of patent damages issues, particularly since damages issues typically come at the end of the trial. Furthermore, when liability and damages are tried together under a common time constraint, defendants are put to a difficult choice: allocating much of their time to the liability issues in the hopes of defeating liability at the risk of not having sufficient time to present adequate apportionment evidence. Furthermore, presenting the full range of components bearing on apportionment can require overcoming extensive evidentiary hurdles.

These problems can be ameliorated through bifurcation of patent damages and allowing expert witnesses greater leeway to consider other patents, components, and licenses bearing on the apportionment of value. A court could broach these issues in early case management in an effort to persuade the parties to develop more liberal ground rules for enabling the full range of apportionment considerations to be considered.

⁴¹ See CIVIL JUSTICE COUNCIL, PROTOCOL FOR THE INSTRUCTION OF EXPERTS TO GIVE EVIDENCE IN CIVIL CLAIMS ¶ 1 (Oct. 2009), https://www.justice.gov.uk/courts/procedure-rules/civil/contents/form_section_images/practice_directions/pd35_pdf_eps/pd35_prot.pdf.

⁴² See *id.* at ¶ 4.1.

⁴³ See *id.* at ¶ 4.3.

⁴⁴ See *id.* at ¶ 12.1.

F. Simplified Jury Instructions

The *Georgia-Pacific* factors are numerous and complex, and considered so mind-numbing that jurors often have difficulty understanding how to juggle so many considerations to determine a reasonable royalty. Constructively, the Federal Circuit Bar Association's January 2016 Model Jury Instructions⁴⁵ have boiled down the factors to just a few:

6.7 REASONABLE ROYALTY—RELEVANT FACTORS

In determining the reasonable royalty, you should consider all the facts known and available to the parties at the time the infringement began. Some of the kinds of factors that you may consider in making your determination are:

- (1) The value that the claimed invention contributes to the accused product.
- (2) The value that factors other than the claimed invention contribute to [the accused product].
- (3) Comparable license agreements, such as those covering the use of the claimed invention or similar technology.

This concise and focused instruction provides a more balanced and comprehensible set of considerations than the *Georgia-Pacific* laundry list. At a minimum, the first of these factors—"The value that the claimed invention contributes to the accused product"—provides a sensible "upper bound" on the reasonable royalty determination. As noted in Part III of this report, such an upper bound comports with a critical area of consensus among workshop participants: "There was general agreement that the patent holder is entitled to a royalty based on the value contributed by the patented invention and that this will generally be less than the entire value of multi-component/feature devices or services." This principle helps address the concern that reasonable royalties can produce outsize lottery-type awards in the multi-component/feature/patent context.

G. Alternative Dispute Resolution

Participants from a variety of perspectives highlighted how the determination of a reasonable royalty within the *Georgia-Pacific* framework produces an expensive, time-consuming, polarized battle of the experts. It typically results in very expensive litigation and too often produces little useful information. In some cases, final offer arbitration holds promise as a mechanism for moving parties toward more reasonable positions in determining a reasonable royalty.

⁴⁵ See Instructions, *supra* note 6 at 72.

Appendix A - Schedule

**Patent Damages Workshop
Berkeley Center for Law & Technology
University of California at Berkeley
3 March 2016**

10:00 Welcome and Introductions

Carl Shapiro

10:15 Session #1: Major Current Issues in Patent Damages Law

Moderators: Peter Menell and Stuart Graham

11:15 Coffee Break

11:30 Session #2: Patent Litigation: Reports from the Front Lines

Moderators: Tim Simcoe and Peter Menell

12:30 Lunch

2:00 Session #3: Expert Economic Testimony: How Can We Narrow the Gap?

Moderators: Stuart Graham and Carl Shapiro

3:00 Break

3:15 Session #4: Patent Damages and Business Reality – Connected or Not?

Moderators: Carl Shapiro and Tim Simcoe

4:30 General Discussion

5:30 Reception

6:30 Dinner

Appendix B - Patent Damages Workshop Participants

Name	Affiliation
Richard Cederroth	Sidley Austin LLP
Michael Chapman	Analysis Group, Inc.
Tina Chappell	Intel Corp.
Colleen Chien	Santa Clara University (School of Law)
Iain Cockburn	Boston University (Business School)
Jorge Contreras	University of Utah (College of Law)
Thomas Cotter	University of Minnesota (Law School)
Alan Cox	National Economic Research Associates (NERA)
Peter Detkin	Intellectual Ventures
Joseph Farrell	University of California at Berkeley (Department of Economics)
Richard Gilbert	University of California at Berkeley (Department of Economics)
John Golden	University of Texas, Austin (School of Law)
Stuart Graham	Georgia Tech (College of Business)
Sarah Guichard	RPX Corp.
Carl Gulbrandsen	Wisconsin Alumni Research Foundation (WARF)
Michael Jacobs	Morrison & Foerster LLP
James Kearl	Brigham Young University (Department of Economics)
Noreen Krall	Apple, Inc.
Dan Lang	Cisco Systems, Inc.
Greg Leonard	Edgeworth Economics LLC
Allen Lo	Google, Inc.
Matthew Lynde	Cornerstone Research
Damon Matteo	Fulcrum Strategy
Peter Menell	University of California at Berkeley (School of Law)
Robert Merges	University of California at Berkeley (School of Law)
Matthew Powers	Tensegrity Law Group LLP
William Rooklidge	Gibson, Dunn & Crutcher LLP
Pamela Samuelson	University of California at Berkeley (School of Law)
Carl Shapiro	University of California at Berkeley (Business School)
Jule Sigall	Microsoft Corp.
Timothy Simcoe	Boston University (Business School)
Matthew Vella	Vella Patent Services LLC
Andrew Wojnicki	IBM Corp.

Cuozzo Speed Technologies and *Halo Electronics*: The U.S. Supreme Court Decides Two Patent Cases in 2016, Upholding a Section of the America Invents Act and Respecting Established Patent Principles

Sue Ann Ganske*

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III. <i>Halo Electronics, Inc. v. Pulse Electronics, Inc.</i>	149
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I. Introduction

Congress has the power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”¹

The United States Supreme Court decided two patent cases in 2016: *Cuozzo Speed Technologies, LLC v. Lee*,² and *Halo Electronics, Inc. v. Pulse Electronics, Inc.*³ In *Cuozzo*, on June 20, 2016, the Supreme Court held, six to two, that a section of the Leahy-Smith America Invents Act, which allows inter partes review by the newly created Patent Trial and Appeal Board,⁴ does not give a right of judicial review of that decision, and a regulation made pursuant to the statute,⁵ which gives the standard of review of a patent claim its broadest reasonable construction, was properly promulgated, affirming the decision of the Court of Appeals for the Federal Circuit.⁶ In *Halo*, on June 13, 2016, the Court held, eight to zero, that enhanced patent damages are to be decided by the district court in egregious cases consistent with centuries of sound legal principles, and not under the rigid *Seagate* test of the Federal Circuit in 2007,⁷ vacating and remanding the decision of the Federal Circuit.⁸ The two patent decisions of 2016 were one less in number than the three patent cases of 2015, which were half of the record-setting six patent decisions by the Court in 2014,⁹ but in each term, the Court of Appeals was affirmed only once.¹⁰ In 2016, one patent case, *Halo*,

¹ U.S. CONST., art. I, § 8, cl. 8.

² *Cuozzo Speed Techs., LLC v. Lee*, 136 S.Ct. 2131 (2016). *See infra* notes 17–63 and accompanying text.

³ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 136 S.Ct. 1923 (2016). *See infra* notes 64–132 and accompanying text.

⁴ 35 U.S.C. § 314(d).

⁵ 37 C.F.R. § 42.100(b).

⁶ *Cuozzo*, 136 S.Ct. at 2131.

⁷ *In Re Seagate Tech., LLC*, 497 F.3d 1360 (Fed. Cir. 2007).

⁸ *Halo*, 136 S.Ct. at 1923.

⁹ *See generally* Sue Ann Ganske, *Marvel, Cisco, and Teva: The Supreme Court Decides Three Patent Cases in 2015, Respecting Stare Decisis*, forthcoming, 24 TEX. INTELL. PROP. L.J. – (2016); Sue Ann Ganske, *The U.S. Supreme Court Decides Six Patent Cases in 2014, Culminating in Alice Corp. v. CLS Bank International*, 23 TEX. INTELL. PROP. L.J. 183 (2015).

¹⁰ *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268 (Fed. Cir. 2015), *aff'd sub nom.* *Cuozzo Speed Techs., LLC v. Lee*, 136 S.Ct. 2131 (2016); *Halo*, 769 F.3d 1371, *rev'd*, 136 S.Ct. 1923 (2016); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 723 F.3d 1363 (Fed. Cir. 2013), *vacated*, 135 S.Ct. 831 (2015); *Commil USA, LLC v. Cisco Sys., Inc.*, 720 F.3d 1361 (Fed. Cir. 2013), *vacated in part*, 135 S.Ct. 1920 (2015); *Kimble v. Marvel Enters. Inc.*, 727 F.3d 856 (9th Cir. 2013), *aff'd sub nom.* *Kimble v. Marvel Entm't, LLC*, 135 S.Ct. 2401 (2015); *Medtronic Inc. v. Boston Sci. Corp.*, 695 F.3d 1266 (Fed. Cir. 2012), *rev'd sub nom.* *Medtronic, Inc. v. Mirowski Family Ventures, LLC*, 134 S.Ct. 843 (2014); *Icon Health & Fitness, Inc. v. Octane Fitness, LLC*, 496 F. App'x 57 (Fed. Cir. 2012), *rev'd*, 134 S.Ct. 1749 (2014); *Highmark, Inc. v. Allcare Health Mgmt. Sys., Inc.*, 687 F.3d 1300 (Fed. Cir. 2012), *vacated sub nom.* *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.*, 134 S.Ct. 1744 (2014); *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 692 F.3d 1301 (Fed. Cir. 2012), *rev'd*, 134 S.Ct. 2111 (2014); *Biosig Instruments, Inc. v. Nautilus, Inc.*, 715 F.3d 891 (Fed. Cir. 2013), *vacated*, 134 S.Ct. 2120 (2014); *CLS Bank Int'l v. Alice Corp. Pty.*, 717 F.3d 1269 (Fed. Cir.

was unanimous,¹¹ and the other patent case, *Cuozzo*, involved a dissent in part by Justice Alito, joined by Justice Sotomayor.¹² In the patent cases decided by the Court in 2015, there were dissents in each case, while all six patent decisions in 2014 were unanimous.¹³

The theme of the Supreme Court in the two patent decisions in 2016, if there is a theme, is that, in *Halo*,¹⁴ the Court respected broad and established principles when ascertaining patent enhanced damages. In *Cuozzo*,¹⁵ the Court upheld the section of the Leahy Smith America Invents Act that created inter partes review, as well as the implementing regulation.¹⁶ In other words, it was a clarifying year in patent jurisprudence at the Supreme Court, although not necessarily a ground-breaking or record-setting year. Each case, though, is essential to intellectual property and practice, and this article reviews and analyzes the two Supreme Court patent decisions of 2016. This article concludes with implications of this series of important cases.

II. *Cuozzo Speed Technologies, LLC v. Lee*

The Supreme Court, on June 20, 2016, in *Cuozzo*, held that inter partes review by the newly created Patent Trial and Appeal Board under the Leahy-Smith America Invents Act does not include a right to appeal a decision of that board.¹⁷ Further, a regulation pursuant to the America Invents Act was upheld.¹⁸

The 2011 Leahy-Smith America Invents Act made substantive changes to U.S. patent law. Effective in 2013, the U.S. became a first-inventor-to-file system,¹⁹ instead of the prior first-to-invent patent system, among many changes. Further, the America Invents Act added three new ways for the Patent Office to review issued

2013), *aff'd*, 134 S.Ct. 2347 (2014).

¹¹ *Halo*, 136 S.Ct. at 1923. See *infra* notes 64–132 and accompanying text.

¹² *Cuozzo*, 136 S.Ct. at 2131. See *infra* notes 17–63 and accompanying text.

¹³ See cases cited *supra* note 10.

¹⁴ *Halo*, 136 S.Ct. at 1923. See *infra* notes 64–132 and accompanying text.

¹⁵ *Cuozzo*, 136 S.Ct. at 2131. See *infra* notes 17–63 and accompanying text.

¹⁶ 37 C.F.R. § 42.100(b).

¹⁷ *Cuozzo*, 136 S.Ct. at 2131.

¹⁸ *Id.* at 2144.

¹⁹ Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 3, 125 Stat. 284, 285–86 (2011) (codified as amended at 35 U.S.C. § 102). See generally Justin Nifong, *Impact of the America Invents Act*, 13 WAKE FOREST J. BUS. & INTELL. PROP. 339, 340 (2013) (explaining that “[t]he most significant change brought about by the AIA is the move from a first-to-invent to a first inventor-to-file system”); Wendell Ray Guffey & Kimberly Schreiber, *America Invents Act: The Switch to a First-to-File Patent System*, 68 J. MO. B. 156, 156 (2012) (explaining that a major change under the AIA was “the switch from a first-to-invent to a first-to-file patent system”); David W. Trilling, *Recent Development: Recognizing a Need for Reform: The Leahy-Smith America Invents Act of 2011*, 2012 U. ILL. J. L. TECH. & POL’Y 239, 246 (2012).

patent claims: inter partes review,²⁰ post-grant review,²¹ and covered business method patent review.²² Inter partes review was at issue in *Cuozzo*.²³ Under inter partes review, created by the America Invents Act, one who is not the patent owner may request review of a patent and cancellation of the claims only on a ground under section 102 (novelty) or 103 (nonobviousness) of the Patent Act based upon prior art consisting of patents or other printed material.²⁴ This review should only be authorized if the third party filing the review would have a reasonable likelihood of prevailing on at least one of the claims.²⁵ The decision to institute inter partes review is “final and nonappealable.”²⁶ Regulations on the standards and procedures of conducting inter partes review were to be promulgated, according to the America Invents Act.²⁷ The Patent Trial and Appeal Board conducts inter partes review, again according to the America Invents Act.²⁸

Petitioner Garmin²⁹ filed a petition for the first inter partes review under the America Invents Act in September 2012 of all claims, one through twenty, of U.S. Patent Number 6,778,074 (the “‘074 patent”), issued on August 17, 2004, for a speed limit indicator and method for displaying speed and the relevant speed limit.³⁰ Interestingly, and as a side issue, on June 15, 2012, Cuozzo Speed Technologies, LLC, the

²⁰ See *infra* notes 23–27 and accompanying text. See generally Stefan Blum, *Ex Parte Reexamination: A Wolf in Sheep’s Clothing*, 73 OHIO ST. L. J. 395, 411, 431–32 (2012).

²¹ Under post-grant review, a third party may, within nine months, request that one or more patent claims be terminated based upon invalidity under 35 U.S.C. § 282(b)(2) or 35 U.S.C. § 282(b)(3). 35 U.S.C. § 321(b). See generally Kaylen Fosen, Note, *The Post Grant Problem: America Invents Falling Short*, 14 MINN. J. L. SCI. & TECH. 573, 585 (2013) (explaining the features of the post-grant review system).

²² Transitional regulations will be promulgated on the post-grant review of covered business method patents. Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 18, 125 Stat. 284, 329–31 (2011); 37 C.F.R. § 42.300(d).

²³ *Cuozzo*, 136 S.Ct. at 2131.

²⁴ 35 U.S.C. § 311 (a)–(b).

²⁵ 35 U.S.C. § 314 (a). See also 35 U.S.C. § 315(a) (inter partes review may not be filed if the challenger has filed a civil action contesting patent claims, and if it is filed, the civil action is stayed); 35 U.S.C. § 315(b) (inter partes review also may not be filed more than a year after the petitioner has had a civil action for infringement of the patent filed against the petitioner).

²⁶ 35 U.S.C. § 314(d).

²⁷ 35 U.S.C. § 316(a).

²⁸ 35 U.S.C. § 316(c).

²⁹ The petitioners were Garmin International, Inc. and Garmin USA, Inc., together “Garmin.” *Garmin Int’l, Inc. v. Cuozzo Speed Techs. LLC*, No. IPR2012-00001, 108 U.S.P.Q.2d 1852 (P.T.A.B. Nov. 13, 2013). See generally *About Us*, GARMIN, <http://www.garmin.com/en-US/company/about/> (last visited June 24, 2016) (noting that Garmin is a leading worldwide provider of navigation with 11,400 offices in 50 nations worldwide).

³⁰ U.S. Patent No. 6,778,074 (filed Mar. 18, 2012), available at <http://www.google.com/patents/US6778074>. The invention “relates to a speed limit indicator and a method for displaying speed and the relevant speed limit for use in connection with vehicles.” *Id.* at col. 1, ll. 9–11. The patent was assigned in February of 2012 to Empire IP LLP, and on June 1, 2012, assigned to Cuozzo Speed Technologies, LLC. USPTO Assignment Search, <http://assignment.uspto.gov/> (search “6778074”).

assignee of the patent as of June 1, 2012, had filed a patent infringement suit in New Jersey federal district court, against Garmin, among others.³¹

In the inter partes review, the Patent Trial and Appeal Board (the “PTAB”) allowed a trial to go forward only on claims 10, 14, and 17.³² The PTAB instituted the trial on the grounds that the ‘074 patent claims under review were rendered obvious³³ by the prior art references.³⁴ Citing a newly enacted regulation of August 14, 2012,³⁵ pursuant to the America Invents Act,³⁶ under inter partes review, claim terms are given their broadest reasonable construction.³⁷ Examining the claims under review, the PTAB concluded that Garmin met the preponderance of evidence burden of proof that the three claims under review were obvious over prior art, and ordered those claims cancelled.³⁸

Cuozzo appealed to the Court of Appeals for the Federal Circuit, which held that first, it lacked jurisdiction to review the PTAB’s decision to conduct inter partes review, and second, it affirmed the PTAB’s final determination including the use of the broadest reasonable interpretation standard.³⁹

On the first issue, whether inter partes review was properly started by the PTAB,

³¹ Complaint for Patent Infringement, *Cuozzo Speed Techs., LLC v. Garmin Int’l, Inc.*, No. 2:12cv03623, (D.N.J. June 15, 2012), ECF No. ___. That same day, Cuozzo Speed Technologies also filed suit against General Motors, *Complaint for Patent Infringement, Cuozzo Speed Techs., LLC v. Gen. Motors*, No. 2:12cv03624, (D.N.J. June 15, 2012), ECF No. ___, and TomTom, *Complaint for Patent Infringement, Cuozzo Speed Techs., LLC v. TomTom*, No. 2:12cv03626 (D.N.J. June 15, 2012) ECF No. ___, among others.

³² *Garmin Int’l*, 108 U.S.P.Q.2d at *1. Cuozzo filed both a Patent Owner Response and a Motion to Amend Claims. *Id.* The motion to amend the claims and substitute new claims was denied. *Id.* Independent claim 10 is for “a speed limit indicator comprising: a global positioning system receiver; a display controller connected to said global positioning receiver, . . . ; and a speedometer integrally attached to said color display.” *Id.* at *4. Claim 14 depends on claim 10, and claim 17 depends on claim 14. *Id.* at *23.

³³ *See generally* 35 U.S.C. § 103.

³⁴ *Garmin Int’l*, 108 U.S.P.Q.2d at *3. The prior art references were the Aumayer, Awada, Tegthoff, Evans, and Wendt, patents numbered U.S. 6,633,811, U.S. 6,515,596, German DE 19755470A1, U.S. 3,980,041, and U.S. 2,711,153, respectively. *Id.* The inventor of the ‘074 patent, Guiseppe Cuozzo, declared that he came up with the idea of using GPS to alert the driver when the driver was speeding when he was pulled over for speeding in 1999. *Id.* at *12. The PTAB stated that the “testimony of the inventor lacks corroboration.” *Id.* at *13. Further, there were two gaps in showing reasonable diligence of the inventor to reduce the invention to practice. *Id.* at *15–17.

³⁵ 37 C.F.R. § 42.100(b).

³⁶ 35 U.S.C. § 314(d).

³⁷ *Garmin Int’l*, 108 U.S.P.Q.2d at *4.

³⁸ *Id.* at *30.

³⁹ *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268 (Fed. Cir. 2015). Circuit Judge Dyk authored the decision, and was joined by Judge Clevenger. The Patent and Trademark Office, intervened, and pursuant to a settlement agreement with Cuozzo, Garmin agreed not to participate in the appeal. *Id.* at 1272 n.2.

the Court of Appeals held that under the America Invents Act,⁴⁰ the issue is not appealable, even after a final decision by the PTAB.⁴¹ On the second issue, the appeals court stated that while the America Invents Act itself does not give the standard to be used for inter partes review, the America Invents Act does give rulemaking authority to the Patent and Trademark Office,⁴² and the regulation promulgated states that patent claims are given their “broadest reasonable construction.”⁴³ The Federal Circuit reviewed the PTAB’s claim construction under this broadest reasonable construction standard, according to the Supreme Court’s 2015 opinion in *Teva Pharmaceuticals U.S.A., Inc. v. Sandoz, Inc.*,⁴⁴ and found no error in the PTAB’s claim construction.⁴⁵ Thus, the PTAB was affirmed.⁴⁶

The Supreme Court affirmed the Court of Appeals for the Federal Circuit,⁴⁷ holding both that the America Invents Act⁴⁸ does not allow an appeal of the decision to bring inter partes review,⁴⁹ and that the “broadest reasonable interpretation” regulation⁵⁰ was made under reasonable rulemaking delegated to the Patent Office.⁵¹ Writing for the majority, Justice Breyer was joined by the entire Court except for the issue of the ability to appeal the initiation of inter partes review. On this issue, Justice Alito dissented, joined by Justice Sotomayor.⁵²

On the issue of the initiation of inter partes review, the majority of the Court held that the determination to institute it is “final and nonappealable,”⁵³ according to the statute. This reinforces an objective of the America Invents Act, letting the Patent Office have “significant power to revisit and revise” patents.⁵⁴

On the issue of the PTO’s rulemaking of the “broadest reasonable interpretation” regulation, the Court conducted the *Chevron*⁵⁵ test, under which, if a statute is clear, the administrative agency must follow the statute, but if not, the agency has leeway

⁴⁰ See 35 U.S.C. § 314(d).

⁴¹ *In re Cuozzo*, 793 F.3d at 1272–73 (citing *St. Jude Med., Cardiology Div., Inc. v. Volcano Corp.*, 749 F.3d 1373, 1375–76 (Fed. Cir. 2014)).

⁴² *Id.* at 1275. See also, Allyson E. Mackavage, *One-Off or a Sign of Things to Come? In Re Cuozzo and the Scope of the United States Patent and Trademark Office’s Rulemaking Authority*, 115 COLUM. L. REV. SIDEBAR 93 (2015).

⁴³ *In re Cuozzo*, 793 F.3d at 1275–76 (noting that this standard has been used by the PTO for more than 100 years).

⁴⁴ *Teva Pharm. U.S.A., Inc.*, 135 S.Ct. at 831.

⁴⁵ *In re Cuozzo*, 793 F.3d at 1280.

⁴⁶ *Id.* at 1283.

⁴⁷ *Cuozzo Speed Techs., LLC v. Lee*, 136 S.Ct. 2131, 2146 (2016).

⁴⁸ *Supra* note 32 and accompanying text.

⁴⁹ *Cuozzo*, 136 S.Ct. at 2136.

⁵⁰ 37 C.F.R. § 42.100(b).

⁵¹ *Cuozzo*, 136 S.Ct. at 2144.

⁵² *Id.* at 2148.

⁵³ *Id.* at 2151.

⁵⁴ *Id.* at 2151.

⁵⁵ *Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837 (1984).

to promulgate reasonable rules under the statute. In this case, the America Invents Act does not provide a specific test to use,⁵⁶ and the regulation is reasonable rulemaking by the Patent Office, given that such a standard has been in use for more than 100 years.⁵⁷

Justice Thomas concurred, because the America Invents Act clearly and expressly granted the Patent and Trademark Office the ability to make regulations.⁵⁸ But Justice Thomas stated that in appropriate future case, “this Court should reconsider that fiction of *Chevron* and its progeny.”⁵⁹

Justice Alito, joined by Justice Sotomayor, dissented on the issue that the institution of inter partes review is not appealable.⁶⁰ The dissent says that the majority does not follow a common sense approach, which would state that while the decision is not immediately appealable, it is appealable after the fact, in accordance with judicial review.⁶¹ Having said that, Justice Alito expressed doubts “that *Cuozzo* could ultimately prevail.”⁶²

So in its first challenge, a section of the America Invents Act and an implementing regulation were upheld by the Court.⁶³ The Court of Appeals for the Federal Circuit’s decision was upheld, which is not usually the case when its appeals reach the Supreme Court.⁶⁴

III. *Halo Electronics, Inc. v. Pulse Electronics, Inc.*

The decision of the Court of Appeals for the Federal Circuit was unanimously vacated and remanded in two cases by the Supreme Court in *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, and the *Seagate* test used by the appeals court on enhanced damages was thrown out.⁶⁵ Justice Roberts, writing for the entire Court, stated that “[e]nhanced damages are as old as U.S. patent law.”⁶⁶ Treble damages were mandated for successful patent infringement suits in the Patent Act of 1793.⁶⁷ Congress made treble damages discretionary with the Patent Act of 1836.⁶⁸ Congress kept these discretionary treble damages with the Patent Act of 1870.⁶⁹ The Patent Act of 1952

⁵⁶ *Cuozzo*, 136 S.Ct. at 2142.

⁵⁷ *Id.* at 2145.

⁵⁸ *Id.* at 2148 (Thomas, J., concurring).

⁵⁹ *Id.*

⁶⁰ *Id.* at 2149 (Alito, J., dissenting).

⁶¹ *Id.* at 2150.

⁶² *Id.* at 2153.

⁶³ *Supra* notes 48, 50 and accompanying text.

⁶⁴ *Cuozzo*, 136 S.Ct. at 2146. *See also supra* note 10.

⁶⁵ *Halo*, 136 S.Ct. at 1923.

⁶⁶ *Id.* at 1928.

⁶⁷ *Id.* (citing the Patent Act of 1793, § 5, 1 Stat. 322).

⁶⁸ *Id.* (citing the Patent Act of 1836, § 14, 5 Stat. 123).

⁶⁹ *Id.* at 1929 (citing the Patent Act of 1870, § 59, 16 Stat. 207).

states that in successful patent infringement cases, “the court may increase the damages up to three times.”⁷⁰ Congress retained this section in the America Invents Act.⁷¹

In 2007, the Court of Appeals developed the two-part *Seagate* test for determining enhanced patent damages.⁷² Under this test, to obtain enhanced patent damages, the patent holder must show by clear and convincing evidence both that the infringer was objectively reckless,⁷³ and that subjectively, the risk of infringement was either known by the infringer or was so obvious that it should have been known by the infringer.⁷⁴ The unanimous Supreme Court on June 13, 2016 threw out this test, or any rigid test, for assessing enhanced damages in patent infringement cases.⁷⁵

The Supreme Court granted a writ of certiorari in two cases, *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, and *Stryker Corp. v. Zimmer, Inc.*;⁷⁶ both were heard and decided together. In this author’s opinion, there wasn’t a better case for the Supreme Court to vacate and loosen the standard for assessing treble patent damages than in *Stryker*. *Stryker*⁷⁷ and *Zimmer*⁷⁸ were “the two principal participants in the market for orthopedic pulsed lavage devices.”⁷⁹ *Stryker* entered the market in 1993.⁸⁰ *Stryker*’s patents on these devices include a patent for an “irrigation hand-piece with built in pulsing pump,”⁸¹ a “surgical/medical irrigating hand-piece with variable speed pump, integrated suction, and battery pack,”⁸² and a “surgical/medical irrigator with removable tip and integrated suction conduit.”⁸³ *Zimmer* had no competing substitute product and, instead of developing a non-infringing competing product, inexplicably hired an independent contractor with no experience in this product line, gave

⁷⁰ 35 U.S.C. § 284 (1952).

⁷¹ 35 U.S.C. § 284 (2011); *Halo*, 136 S.Ct. at 1934–35.

⁷² *In re Seagate Tech.*, LLC, 497 F.3d 1360 (Fed. Cir. 2007).

⁷³ *Id.* at 1371.

⁷⁴ *Id.* (“The patentee must show by clear and convincing evidence that the infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent.”).

⁷⁵ *Halo*, 136 S.Ct. at 1934 (“we eschew any rigid formula for awarding enhanced damages”).

⁷⁶ *Id.* at 1931.

⁷⁷ *Fact Sheet*, STRYKER (Aug. 2015), <http://phx.corporate-ir.net/phoenix.zhtml?c=118965&p=irol-sec> (last visited June 27, 2016) (noting that Stryker is a broadly diversified leader in medical technology, with over 26,000 employees in more than 100 companies, and holding over 5,300 patents in 2014).

⁷⁸ *About the Company*, ZIMMER BIOMET, <http://investor.zimmerbiomet.com/index.cfm> (last visited June 27, 2016) (“Zimmer Biomet is a global leader in musculoskeletal healthcare.”).

⁷⁹ *Stryker Corp. v. Zimmer, Inc.*, No. 1:10–CV–1223, 2013 WL 6231533, at *1 (W.D. Mich. Aug. 7, 2013). *See also* *Stryker Corp. v. Zimmer, Inc.*, 782 F.3d 649, 652 (Fed. Cir. 2015) (explaining that these devices deliver pressurized irrigation, both spraying and suctioning, for medical procedures including orthopedic surgery and wound cleansing. Additionally, the devices at issue are portable, handheld, battery operated devices.).

⁸⁰ *Stryker*, 782 F.3d at 652.

⁸¹ U.S. Patent No. 6,022,329 (filed Jan. 20, 1998), [hereinafter the ‘329 patent], available at <https://www.google.com/patents/US6022329>.

⁸² U.S. Patent No. 7,144,383 (filed May 4, 2004), [hereinafter the ‘383 patent], available at <https://www.google.com/patents/US7144383>.

⁸³ U.S. Patent No. 6,179,807 (filed Oct. 22, 1999), [hereinafter the ‘807 patent], available at <https://www.google.com/patents/US6179807>.

the contractor Stryker's product, and said, "make one for us."⁸⁴ Zimmer entered the market in 1998, and succeeded in getting market share from Stryker, until 2007, when, due to complaints and technical problems, Zimmer had to remove its product from the market for over a year.⁸⁵ When Zimmer returned to the market, it regained market share until 2010 when Stryker sued for infringement of its patents.⁸⁶

At the district court, "Zimmer lost every argument it advanced at claim construction, then lost most of the disputed claims on summary judgment. It lost all of its remaining claims at trial."⁸⁷ The jury awarded Stryker \$70 million in lost profits, and found that Zimmer's infringement was willful.⁸⁸ The district court found that "there is simply no good reason *not* to treble the award of supplemental damages here."⁸⁹ Further, Zimmer still hadn't changed its design.⁹⁰

On appeal to the Court of Appeals for the Federal Circuit, the court affirmed the jury's verdict that the patents were valid and were infringed, and upheld the award of damages.⁹¹ But, the appeals court reversed the finding that the infringement was willful and vacated the award of treble damages.⁹² While the appeals court affirmed that Zimmer lost on its defenses of non-infringement and invalidity, the appeals court found that Zimmer's defenses were not unreasonable.⁹³ Under the two-part test for willful infringement set out in *In re Seagate Tech., LLC*,⁹⁴ the patentee must first establish by clear and convincing evidence that the infringer acted despite an objectively high likelihood that it was infringing a valid patent, and then, that this objective risk was either known or should have been known to the infringer.⁹⁵ The appeals court in *Stryker* stated that the district court did not conduct an objective risk assessment, which would have shown that Zimmer had reasonable defenses.⁹⁶ Since

⁸⁴ *Stryker*, 2013 U.S. Dist. LEXIS 171817, at *4. Zimmer did not seek advice of patent counsel on this. *Id.* Before Zimmer left the market it had \$55 million in sales. *Stryker*, 782 F.3d at 652.

⁸⁵ *Stryker*, 2013 U.S. Dist. LEXIS 171817, at *5.

⁸⁶ *Id.* It is unclear why Stryker waited so long to initiate suit. In 2000, Stryker sued another infringer, Davol, and settled in 2001. *Stryker*, 782 F.3d at 652.

⁸⁷ *Stryker*, 2013 U.S. Dist. LEXIS 171817, at *4.

⁸⁸ *Id.* at *3. Zimmer also lost all of its post-verdict motions. *Id.* at *9. Stryker prevailed on all five of its post-verdict motions. *Id.* at *69.

⁸⁹ *Id.* at *98. (emphasis in original).

⁹⁰ *Id.* at *5.

⁹¹ *Stryker*, 782 F.3d at 652.

⁹² *Id.* The award of attorney's fees was also vacated. *Id.*

⁹³ *Id.* at 654. Concerning the '329 patent, claim 2 states that the motor is in the handle, whereas Zimmer's motor was in the nub of the handpiece behind the barrel. *Id.* While Stryker prevailed on this, Zimmer's positions "were not unreasonable." *Id.* at 657.

⁹⁴ *In re Seagate Tech., LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007).

⁹⁵ *Stryker*, 782 F.3d at 660-61 (citing *In Re Seagate* 497 F.3d 1360 at 1371).

⁹⁶ *Stryker*, 782 F.3d at 661. Concerning the '329 patent, patent claim 2 states that the motor is in the handle while Zimmer's motor is in the nub. *Id.* See *infra* note 100. Concerning the '807 patent, the specification stated female nozzles on the front of the device and male nozzles on the tip, whereas Zimmer's device reversed this. *Stryker*, 782 F.3d at 661. Concerning the '383 patent, Zimmer relied on references also raised by a PTO examiner during an office examination in discovery in this

Zimmer did not act recklessly, the award of exemplary damages and attorney's fees was reversed by the Federal Circuit.⁹⁷

Halo Electronics is a privately held company with over 1,000 employees worldwide, which designs and manufactures a broad range of communication and power magnetics.⁹⁸ Pulse Electronics, Inc. is one of the largest electronics manufacturers in the world,⁹⁹ and has a long operating history in magnetics, antennas, and connectors.¹⁰⁰ Halo Electronics, Inc. owns four patents¹⁰¹ at issue in this case, which relate to "an improved design for an electronic surface-mount package."¹⁰² Pulse Electronics, Inc., owns two patents¹⁰³ at issue on electronic connectors. Pulse allegedly was aware of Halo's patents as early as 1998.¹⁰⁴ In 2002, Halo sent letters to Pulse offering patent licenses, but did not accuse Pulse of infringement.¹⁰⁵ Pulse continued to sell its products without licensing.

Halo filed suit and an amended complaint in 2007, alleging that Pulse infringed on claims of its patents by selling surface-mount transformers with electronic surface-mount packages; Pulse counterclaimed that Halo infringed on claims of its patents by selling products that contain connectors covered under the claims of Pulse's

litigation, thus making Zimmer's defense reasonable. *Id.* at 662.

⁹⁷ *Id.*

⁹⁸ *Company at a Glance*, HALO ELECTRONICS, INC., <http://www.haloelectronics.com/pdf/HALO-at-a-Glance.pdf> (last visited June 28, 2016).

⁹⁹ *Pulse Careers*, PULSE ELECTRONICS, http://search9.smartsearchonline.com/pulseelectronics/jobs/process_jobsearch.asp (last visited June 28, 2016). Pulse manufactures in Asia, with many products sold and delivered outside the United States, although some products are delivered to the United States. *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 769 F.3d 1371, 1375 (Fed. Cir. 2014).

¹⁰⁰ *Corporate Profile*, PULSE ELECTRONICS, http://www.pulseelectronics.com/investor_relations (last visited June 28, 2016).

¹⁰¹ U.S. Patent No. 5,656,985 (filed Aug. 10, 1995), *available at* <http://www.google.com/patents/US5656985>. (the parent patent, from which the others derive, for an electronic surface mount package) U.S. Patent No. 6,297,720 (filed Dec. 27, 1996), *available at* <http://www.google.com/patents/US6297720>. U.S. Patent No. 6,297,271 (filed Nov. 24, 1997), *available at* <http://www.google.com/patents/US6297721>. U.S. Patent No. 6,344,785 (filed Aug. 6, 1997), *available at* <http://www.google.com/patents/US6344785>.

¹⁰² *Halo Electronics, Inc. v. Pulse Eng'g, Inc.*, 721 F. Supp. 2d 989, 993 (D. Nev. 2010). *aff'd sub nom. Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 769 F.3d 1371 (Fed. Cir. 2014), *vacated and remanded*, 136 S. Ct. 1923 (2016), and *aff'd sub nom. Halo Electronics, Inc. v. Pulse Electronics, Inc.*, No. 2013-1472, 2016 WL 4151239 (Fed. Cir. Aug. 5, 2016). The package mounts to a circuit board for electronic devices.

¹⁰³ U.S. Patent No. 6,769,936 (filed May 6, 2002), *available at* <http://www.google.com/patents/US6769936>. (patent for a connector with insert assembly and method of manufacturing) U.S. Patent No. 6,116,963 (filed Oct. 9, 1998), *available at* <http://www.google.com/patents/US6116963>. (patent for a two-piece microelectronic connector and mount).

¹⁰⁴ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 769 F.3d 1371, 1376 (Fed. Cir. 2014), *vacated* 136 S. Ct. 1923 (2016).

¹⁰⁵ *Id.* A Pulse engineer spent about two hours reviewing the Halo patents, but concluded that they were invalid, based upon Pulse's products on the market prior to those patents. *Id.* Like Zimmer, Pulse did not consult legal counsel. *Stryker*, 2013 U.S. Dist. LEXIS 171817, at *98.

patents.¹⁰⁶ A number of issues were dealt with before trial, including the grant of summary judgment that Pulse did not infringe concerning allegedly infringing products sold by Pulse outside the United States.¹⁰⁷ After a jury trial in November 2012, the jury found 1) that all but one of Pulse's allegedly infringing products sold in the United States directly infringed claims of Halo's patents, 2) that Pulse indirectly infringed concerning products made outside the United States but shipped into the United States incorporating Pulse's infringing products, and 3) that it was highly probable that this infringement was willful and determined damages accordingly.¹⁰⁸ The district court held that Halo did not prove by clear and convincing evidence that Pulse acted with an objectively high likelihood that its actions constituted infringement.¹⁰⁹ The district court granted Halo a permanent injunction,¹¹⁰ which was stayed.¹¹¹

Halo appealed the summary judgment concerning products sold outside the United States,¹¹² and the district court's finding that the infringement for products sold within the United States was not willful.¹¹³ Pulse cross-appealed.¹¹⁴ The Court of Appeals for the Federal Circuit affirmed.¹¹⁵ Concerning the products sold outside the United States, the Patent Act states that "whoever without authority makes, uses, offers to sell, or sells any patented invention within the United States" infringes.¹¹⁶ Thus the judgment of no infringement for the products outside the United States was

¹⁰⁶ *Halo*, 721 F.Supp. 2d at 993. In 2008, during discovery, Pulse requested and received a temporary stay when a third party challenged the validity of claims of Halo's patents. Upon reexamination, all claims were upheld. Halo then was allowed to add 66 claims, most of which were also asserted against Pulse. *Id.*

¹⁰⁷ *Halo Electronics, Inc. v. Pulse Eng'g, Inc.*, 810 F. Supp. 2d 1173, 1210 (D. Nev. 2011), *aff'd sub nom.* *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 769 F.3d 1371 (Fed. Cir. 2014), *vacated and remanded*, 136 S. Ct. 1923 (2016), and *aff'd sub nom.* *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, No. 2013-1472, 2016 WL 4151239 (Fed. Cir. Aug. 5, 2016). Pulse's motion for summary judgment on direct infringement was denied in all other respects. Pulse's motion for summary judgment on no infringement was denied. Halo's motion for summary judgment of no invalidity was granted; Pulse's motion of invalidity was denied. *Id.*

¹⁰⁸ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, No. 2:07-dv-0031-PMP-PAL, 2013 Dist. LEXIS 74799, at *2-3 (D. Nev. May 28, 2013), *vacated and remanded*, 136 S. Ct. 1923 (2016).

¹⁰⁹ *Id.* at *46-47.

¹¹⁰ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, No. 2:07-dv-0031-PMP-PAL, 2013 Dist. LEXIS 84672, at *39 (D. Nev. June 17, 2013).

¹¹¹ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, No. 2:07-dv-0031-PMP-PAL, 2013 Dist. LEXIS 99772, at *11 (D. Nev. July 16, 2013). Pulse's request for a new trial was denied. *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, No. 2:07-dv-0031-PMP-PAL, 2013 Dist. LEXIS 117190, at *48 (D. Nev. Aug. 16, 2013).

¹¹² *Halo*, 810 F. Supp. 2d at 1181.

¹¹³ *Halo*, 2013 Dist. LEXIS 74799, at *3.

¹¹⁴ *Halo*, 769 F.3d at 1374.

¹¹⁵ *Id.* at 1383. See generally Georgi Korobanov, *Higher Standards The Real Issue Within Halo v. Pulse*, 98 J. PAT. & TRADEMARK OFF. SOC'Y 100 (2016); Tyler A. Hicks, Note, *Breaking the "Link" Between Awards for Attorney's Fees and Enhanced Damages in Patent Law*, 52 CAL. W. L. REV. 191 (2016).

¹¹⁶ 35 U.S.C. § 271 (a) (2010).

affirmed.¹¹⁷ Using the *Seagate* test,¹¹⁸ the appeals court also unanimously affirmed that Pulse's infringement was not objectively willful,¹¹⁹ in a decision authored by Circuit Judge Lourie.

In a concurrence that anticipates the Supreme Court's decision, Circuit Judge O'Malley, joined by Circuit Judge Hughes, observed that they were bound by *Seagate*,¹²⁰ but should "reevaluate our willfulness jurisprudence in light of the Supreme Court's decisions in *Highmark* and *Octane Fitness*."¹²¹ The standard for the award of enhanced damages has mirrored the award of attorneys' fees, and a flexible test examining the totality of circumstances could be the appropriate flexible test for both, according to the concurrence.¹²² Possibly spurred on by the concurrence, Halo requested a rehearing en banc, which was denied.¹²³

On a writ of certiorari, the Supreme Court unanimously vacated and remanded both cases.¹²⁴ Justice Roberts, writing for the Court, observed that enhanced patent damages over the last 180 years are awarded only for egregious, willful, wanton, deliberate, or flagrant behavior.¹²⁵

The *Seagate* test used by the Court of Appeals for the Federal Circuit since 2007 is "unduly rigid, and it impermissibly encumbers the statutory grant of discretion to the district courts."¹²⁶ While *Octane Fitness* was in a different context – patent attorney's fees in exceptional cases – the Supreme Court found that it "points in the same direction."¹²⁷ Like *Octane Fitness*, which rejected the higher "clear and convincing" burden of proof for attorney's fees in exceptional patent cases, the Court in *Halo* unanimously rejected *Seagate's* higher standard for the award of enhanced patent damages.¹²⁸

Just as the Court in *Highmark Inc. v. Allcare Health Management Systems, Inc.* rejected a multiple part standard of review, the Court in *Halo* rejected *Seagate's* two-part test.¹²⁹ Congress' retention of the section on enhanced damages in the America

¹¹⁷ *Halo*, 769 F.3d at 1381.

¹¹⁸ *In Re Seagate Tech., LLC*, 497 F.3d 1360 (Fed. Cir. 2007). See also *supra* text accompanying notes 72–74.

¹¹⁹ *Halo*, 769 F.3d at 1383. There was also no reversible error on Pulse's cross appeal. *Id.*

¹²⁰ *Id.* at 1386 (O'Malley, CJ, concurring). See also *supra* text accompanying notes 72–74.

¹²¹ *Halo*, 769 F.3d at 1386.

¹²² *Id.* at 1385.

¹²³ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 780 F.3d 1357, 1358 (Fed. Cir. 2015). Not surprisingly, Circuit Judges O'Malley and Hughes dissented. *Id.* at 1361.

¹²⁴ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, Nos. 14-1513 and 14-1520, 2016 U.S. LEXIS 3776, at *14 (U.S. June 13, 2016).

¹²⁵ *Id.* at *14–15.

¹²⁶ *Id.* at *15 (citing *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S.Ct. 1749 (2014)).

¹²⁷ *Id.* at *16.

¹²⁸ *Id.* at *19–20.

¹²⁹ *Id.* at *20 (citing *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.*, 134 S.Ct. 1744 (2014)).

Invents Act does not necessarily mean that Congress meant to retain the *Seagate* test, but could also mean that they retain nearly two hundred years of patent enhanced damages discretionary jurisprudence.¹³⁰ Enhanced patent damages should be awarded carefully, “limiting the award of enhanced damages to egregious cases of misconduct beyond typical infringement.”¹³¹ Thus the Court continued in its reasoning consistent with recent precedent, as anticipated by the concurrence at the Federal Circuit.¹³²

IV. Conclusion

The U.S. Supreme Court in the 2015-16 term decided two important patent cases in *Cuozzo Speed Technologies, LLC v. Lee*¹³³ and *Halo Electronics, Inc. v. Pulse Electronics, Inc.*¹³⁴ While not a record-setting term for the Court, each case is important and adds to patent jurisprudence.

The America Invents Act got a boost from the Supreme Court in *Cuozzo* when the Court upheld both the aspect of the process of inter partes review, which makes the decision to institute review nonappealable,¹³⁵ as well as the regulation setting the standard of claims review as “the broadest reasonable interpretation,”¹³⁶ affirming the Court of Appeals for the Federal Circuit on both issues.¹³⁷

The year 2016, like 2015 and 2014, was not a good year for patent assertion entities at the United States Supreme Court, thanks to the *Cuozzo* case. The term “patent troll” was not actually used by the Court in 2016, as it was by the late Justice Scalia in the dissent in *Commil USA, LLC v. Cisco Systems, Inc.* in 2015.¹³⁸ The Court in 2014 in *Octane Fitness, LLC v. Icon Health & Fitness, Inc.*¹³⁹ and *Highmark Inc. v. Allcare Health Management System, Inc.*,¹⁴⁰ made attorney’s fees easier to recover in patent infringement suits, and in *Alice Corporation v. CLS Bank International*,¹⁴¹ the Supreme Court held that “mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” The Court in 2016, though, did strike a blow against patent trolls by upholding a portion of the America Invents Act making the inter partes review initiation by the PTAB nonappealable.¹⁴²

¹³⁰ *Halo*, 2016 U.S. LEXIS 3776, at *21–22.

¹³¹ *Id.* at *24.

¹³² *Halo*, 780 F.3d at 1358.

¹³³ *Cuozzo Speed Techs., LLC v. Lee*, 136 S.Ct. 2131 (2016).

¹³⁴ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 136 S.Ct. 1923 (2016).

¹³⁵ 35 U.S.C. § 316.

¹³⁶ *Cuozzo*, 136 S.Ct. at 2144.

¹³⁷ *Id.* at 2136.

¹³⁸ *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S.Ct. 1920, 1932 (2015) (Scalia, J., dissenting).

¹³⁹ *Icon Health & Fitness, Inc. v. Octane Fitness, LLC*, 134 S.Ct. 1749 (2014).

¹⁴⁰ *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.*, 134 S.Ct. 1744 (2014).

¹⁴¹ *CLS Bank Int’l v. Alice Corp. Pty.*, 134 S.Ct. 2347, 2358 (2014).

¹⁴² 35 U.S.C. § 316.

This sends the message that Congress is the appropriate branch to enact patent legislation, to promote the progress of science and useful arts.¹⁴³ In *Cuozzo*, the non-practicing entity could not appeal the initiation of inter partes review, which held that the patent's claims were obvious under prior art.¹⁴⁴

As of March 31, 2016, there have been in cumulative total 4743 petitions to the Patent Trial and Appeal Board.¹⁴⁵ Ninety percent of these were for inter partes review, while nine percent were for covered business methods,¹⁴⁶ and one percent were post-grant review.¹⁴⁷ Of the 2,872 inter partes reviews completed to date, about half, or 1,429, resulted in no trial, and 1433 resulted in trial initiation.¹⁴⁸ Of the trials initiated, 594 were terminated,¹⁴⁹ and 894 were completed. Of the completed PTAB inter partes review trials, 640 trials, or 72% of written decisions, found all instituted patent claims unpatentable.¹⁵⁰ Among the remaining trials, 123, or 14% of final written decisions, found some instituted patent claims unpatentable, and¹⁵¹ 131, or 15% of final written decisions, found no instituted claims unpatentable.¹⁵² This data could support the contention that PTAB inter partes review is an effective mechanism against claims which should not have been granted. There is no data at this point on how many trials were instituted on claims owned by non-practicing entities.

The Court in *Halo*¹⁵³ unanimously vacated the decision of the Court of Appeals for the Federal Circuit, and its use of the *Seagate*¹⁵⁴ test when assessing exemplary patent damages. Courts should consider many factors, as they have for many years, and not use a rigid formula.¹⁵⁵

An unintended consequence of *Halo* could be that non-practicing entities could find it easier to get, or threaten, exemplary patent damages in suits against legitimate businesses.¹⁵⁶ In both cases vacated in *Halo*, the parties were competitors and not

¹⁴³ U.S. CONST., art. I, § 8, cl. 8.

¹⁴⁴ *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268 (Fed. Cir. 2015). See *supra* text accompanying note 39.

¹⁴⁵ U.S. PAT. AND TRADEMARK OFF., *Patent Trial and Appeal Board Statistics*, at 2 (Mar. 31, 2016), <http://www.uspto.gov/sites/default/files/documents/2016-3-31%20PTAB.pdf> (last visited, June 26, 2016).

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.* at 10. Of the trials not initiated, 869 petitions were denied by the PTAB, while 560 were terminated before the decision to initiate review. Of those 560, 506 resulted in a settlement. *Id.*

¹⁴⁹ *Id.* Four hundred were settled, while 17 were dismissed, and 134 ended by a request for an adverse judgment. *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, Nos. 14-1513 and 14-1520, 2016 U.S. LEXIS 3776, at *6-7 (U.S. June 13, 2016).

¹⁵⁴ *In Re Seagate Technology, LLC*, 497 F.3d 1360 (Fed. Cir. 2007).

¹⁵⁵ *Halo*, 2016 U.S. LEXIS 3776, at *20.

¹⁵⁶ *Id.* at *29 (Stevens, J., concurring).

non-practicing entities. Justice Roberts stated that “consistent with nearly two centuries of enhanced damages under patent law, however, such punishment should generally be reserved for egregious cases typified by willful misconduct.”¹⁵⁷ This wording in dicta tends to put the brakes on the threats of unwarranted patent enhanced damages. Similarly, the concurrence, written by Justice Stevens, contained words of warning for considering cases involving non-practicing entities, asserting that enhanced damages should be awarded carefully and only in cases of egregious misconduct.¹⁵⁸ With that in mind, judges can use discretion to apply such enhanced damages as appropriate.

¹⁵⁷ *Id.* at *19.

¹⁵⁸ *Id.* at *30–31.

