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APPORTIONING PATENT DAMAGES: PROPOSALS FOR REFORM

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Patents promote innovation. By allowing innovators to realize the value of their inventive contributions, the patent system encourages the labors that lead to those contributions in the first instance.¹ Yet the systemic overcompensation of patent owners may interfere with the very purposes the patent system is intended to serve. Excessive damages awards effectively allow inventors to obtain proprietary interests in products they have not invented, promote patent speculation and litigation, and place unreasonable royalty burdens upon producers of high technology products. Such consequences may ultimately slow the process of technological innovation and dissemination that the patent system is intended to foster.²

Evidence is mounting that judicial determinations of damages for patent infringement have become overly generous. The combination of the increasing popularity of the patent system and the growing sophistication of technology provide one reason for this trend. In the twenty-first century, the number of issued patents has reached a level virtually unimaginable to an earlier generation. By an order of magnitude, the number of extant patents has never been higher than it is today.³ Contemporaneously, technologies have grown more complex. Even everyday consumer products,

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The views and opinions expressed in this article are exclusively the personal views of the author, and do not necessarily represent the views of any other individual, firm, or organization. All errors and omissions remain the sole responsibility of the author.

¹See F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 Minn. L. Rev. 697 (2001); Samuel Oddi, *Un-Unified Economic Theory of Patents—The Not-Quite Holy Grail*, 71 NOTRE DAME L. REV. 267 (1996); Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEGAL STUD. 247 (1994).

²See Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, Stanford Law and Economics Olin Working Paper No. 324 (May 31, 2006); Amy L. Landers, *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, 46 SANTA CLARA L. REV. 307 (2006); Eric E. Bensen, *Apportionment of Lost Profits in Contemporary Patent Damages Cases*, 10 VA. J. L. & TECH. 8, at *14 (2005).

³U.S. Pat. & Trademark Office, U.S. Patent Statistics, Calendar Years 1963-2005 (2005), available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm. See John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. REV. 77, 78 (2002).

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ranging from cellular telephones to automobiles, commonly incorporate hundreds or thousands of individual components.⁴

These trends have resulted in an environment where high technology products increasingly embody not merely a single or handful of patented inventions, but dozens or even thousands of them. Within this milieu, the prospect that high technology firms must obtain licenses from multiple patent holders in order to market their products has become a virtual certainty. Yet case law and empirical evidence alike reveal that the courts are inclined towards awarding damages that may far exceed an individual patent's contribution to an infringing product.

The ongoing litigation between Alcatel-Lucent and Microsoft provides a spectacular example of the failure of courts to assess the value that a particular patented invention contributes towards an infringing product. In that case, a jury awarded patent infringement damages of \$1.52 billion against Microsoft. Reportedly the jury arrived at this figure, said to be the largest ever issued in the history of the U.S. patent system, by awarding 0.5 percent of the total sales price of all computers equipped with Windows. The jury was apparently undaunted by the fact that the asserted patents related merely to the use of audio files encoded by the MP3 format; that computers embody tens of thousands of patented software and hardware technologies; and that Microsoft had already licensed the MP3 technology from a third party.⁵ The MP3 case, and other like it,⁶ suggest that courts are

⁴See Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1591 (2003). The next generation of cellular telephones, known as 3G, provides a suitable example of the extent of patenting that can surround high-technology products and processes. Two of the industrial standards developed in connection with 3G are CDMA2000 (Code Division Multiple Access) and WCDMA (Wideband CDMA). Goodman and Myers identified 924 essential patents with respect to CDMA2000, and 6,872 essential patents relating to WCDMA, that issued prior to January 1, 2004. Because many of these patents consist of parallel national filings, they reduce to 527 "patent families" for CDMA2000 and 732 "patent families" relating to WCDMA. David J. Goodman & Robert Myers, *3G Cellular Standards and Patents*, IEEE WirelessCom 2005 (June 13, 2005) (available at <http://eeweb.poly.edu/dgoodman/wirelesscom2005.pdf>). As some patents may not have been declared to the standards body, additional relevant patents have likely issued since January 1, 2004, and further applications are probably pending at patent offices around the world, these numbers almost certainly fall short of the actual patenting landscape with respect to these two 3G standards alone. See also Lemley & Shaprio, *supra* note 2, at 25-26; Michael R. Franzinger, *Latent Dangers in a Patent Pool: The European Commission's Approval of the 3G Wireless Licensing Agreements*, 91 CAL. L. REV. 1693 (2000).

⁵See Saul Hansell, *Microsoft ordered to pay \$1.52 billion in mp3 patent lawsuit*, INT'L HERALD TRIBUNE (Feb. 23, 2007); Alan Sipress, *Microsoft Loses Big in MP3 Patent Suit*, WASH. POST (Feb. 23, 2007), at D1.

⁶In the recent litigation in *Symbol Technologies v. Proxim*, 2004 WL 1770290 (D. Del. 2004), for example, a jury found an infringement of two of the plaintiff's wireless communications patents and

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encountering difficulty in apportioning between the economic value attributable due to the infringement of a patent, on one hand, and the economic value due to other patented technologies and product features, on the other.

Reported judicial opinions present the tip of the iceberg of the apportionment problem. Many more patents are licensed than are formally asserted in federal court.⁷ Yet, because courtroom rulings form the basis for boardroom negotiations, patentees stand in a strong position to extract disproportionate royalties from manufacturers. No wonder, then, that both houses of the 109th Congress contemplated legislative reforms that would expressly articulate the principle of apportionment into the Patent Act.⁸ As the 110th Congress commences a new round of discussions concerning patent reform, review of the patent damages principle of apportionment appears timely.

This Article explores the issue of apportionment with an eye towards current legislative reform efforts. Part I of this Article explains the basic principles of patent damages. This Article further explores recent trends towards systematic elevation of damages awards above the marketplace valuation of an invention. In Part II, this Article explains that concerns with respect to above-market damages awards become further elevated when the patented invention concerns only a single component of a larger product or process. In such circumstances courts must either apportion damages, by restricting the damages base to the value of the component, or apply the Entire Market Value Rule by extending the damages base to the entire product or process. A review of recent case law reveals that courts at times too quickly default towards the Entire Market Value Rule when awarding reasonable royalty damages in patent infringement suits. Further, the courts do not apply a principle of apportionment at all when they measure patent damages in the form of lost profits.

Part III of this Article explores the policy goals that traditionally made apportionment a core

awarded damages based upon a 6% royalty. Because many hundreds of patents relate to the IEEE 802.11 cluster of standards that consumer commonly term “WiFi,” the royalty obligations of any firm selling wireless products could be many multiples of the product’s sales price. The problem extends beyond merely WiFi technology, of course, because consumers don’t buy “WiFi” *per se*—they purchase laptops, phones, and other products that embody not only the IEEE 802.11 standard, but likely numerous other technologies that are subject to patents and potential royalty obligations as well. This Article discusses additional examples *infra* at notes 51-65 and accompanying text.

⁷See Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1507 (2001). See also Lemley & Shapiro, *supra* note 2, at 2 (appreciating that “far more patents are licensed or settled than litigated to judgment . . .”).

⁸See Patent Reform Act of 2006, S. 109-3818, § 5(a); Patent Reform Act of 2005, H.R. 109-2795, § 6.

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principle of patent damages law.⁹ Failure to account for apportionment in suitable cases may inappropriately expand patent scope, promote both patent speculation and infringement litigation, and impose unreasonable royalty burdens upon producers of high technology products. These unwelcome trends may in turn obstruct the very process of technological innovation and dissemination that the patent system was designed to promote. Part III then reviews current legislative proposals with respect to apportionment. Although favorably inclined towards current reform proposals, this Article is concerned that they may not go far enough. This Article therefore identifies additional prospects for legislative reform and judicial treatment of apportionment principle in patent cases, including apportioning lost profit damages, accounting for other patents during the damages calculation, and making appropriate use of Jepson claim format to focus attention upon the inventor's contribution. Part IV concludes.

I. FUNDAMENTALS OF PATENT INFRINGEMENT DAMAGES

A fundamental premise of the patent system is that the market most effectively assesses the worth of inventions.¹⁰ Reliance upon market mechanisms allows the government to promote innovation with relatively modest effort and expense, particularly in comparison with the reward-based systems that are the chief alternatives to patents.¹¹ As Judge Giles S. Rich explained:

⁹As the Supreme Court explained over 150 years ago:

It must be apparent to the most superficial observer of the immense variety of patents issued every day, that there cannot, in the nature of things, be any one rule of damages which will equally apply to all cases. The mode of ascertaining actual damages must necessarily depend on the peculiar nature of the monopoly granted [O]ne who invents some improvement in the machinery of a mill could not claim that the profits of the whole mill should be the measure of damages for the use of his improvement.

Seymour v. McCormick, 57 U.S. 480, 489 (1853).

¹⁰See e.g., Daniel J. Gifford, *How do the Social Benefits and Costs of the Patent System Stack up in Pharmaceuticals?*, 12 J. INTELL. PROP. 75 (2004) (Due to the workings of the patent system, “the extent to which they are, in fact, rewarded for their inventive activity is determined by the market.”); Nuno Pires de Carvalho, *The Primary Function of Patents*, 2001 U. ILL. J. L. TECH. & POL’Y 25 (“Patents have the primary function of serving as metering devices for society to measure an invention's value, thus allowing patentees to stipulate competitive prices for inventions and, consequently, on the products and services that embody them”); H.I. DUTTON, *THE PATENT SYSTEM AND INVENTIVE ACTIVITY DURING THE INDUSTRIAL REVOLUTION, 1750-1852* at 26 (1984) (“Patents at least let the market decide.”).

¹¹See Michael Abramowicz, *Perfecting Patent Prizes*, 56 VAND. L. REV. 5, 121 (2003) (appreciating assertions that the patent system enjoys the “ability to induce innovation with a relatively small amount of governmental involvement and expense.”).

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[I]t is one of the legal beauties of the system that what is given by the people through their government—the patent right—is valued automatically by what is given by the patentee. His patent has value directly related to the value of his invention, as determined in the marketplace.¹²

Consistent with this orientation, the patent law aspires to fix damages for infringement at market-based rates that are intended to compensate the patent proprietor for the infringement.¹³ The Patent Act provides courts with two methodologies intended to implement this policy goal: damages awards based upon the patentee’s lost profits, and those based upon a reasonable royalty.¹⁴

Under current law, patentees may obtain lost profits as a measure of damages when they are able to make the required showing. The Federal Circuit has explained that in order to demonstrate entitlement to lost profits damages, the patentee must reasonably demonstrate that, “but for” the infringement, it would have made the sales consummated by the infringer.¹⁵ When the patentee and the infringer are the only actors in the relevant market, the courts will ordinarily infer “but for” causation.¹⁶ Another mechanism for demonstrating causation is the influential standard set forth in *Panduit Corp. v. Stahlin Brothers Fibre Works, Inc.*¹⁷ Under *Panduit*, the patentee must show that (1) the patented product was in demand; (2) no acceptable noninfringing substitute was available; (3) the patentee or its licensees possessed the manufacturing and marketing capability to exploit the demand; and (4) the amount of profit the patentee would have made.¹⁸

¹²Application of Kirk, 376 F.2d 936, 964 (CCPA 1967) (Rich, J., dissenting).

¹³*See, e.g.,* Integra Lifesciences I, Ltd. v. Merck KgaA, 331 F.3d 860, 870 (Fed. Cir. 2003) (“Royalties, like lost profits, are compensatory damages, not punitive.”), *rev’d on other grounds*, 545 U.S. 193 (2005); Riles v. Shell Exploration & Prod. Co., 298 F.3d 1302, 1312 (Fed. Cir. 2002) (“Compensatory damages, by definition, make the patentee whole, as opposed to punishing the infringer.”).

¹⁴*See, e.g.,* Crystal Semiconductor Corp. v. TriTech Microelec. Intern., Inc., 246 F.3d 1336, 1353 (Fed. Cir. 2001) (“Beyond reasonable royalties, a patentee may seek lost profits damages for infringement.”); Beatrice Foods Co. v. New England Printing and Lithographing Co., 899 F.2d 1171, 1173 (Fed. Cir. 1990) (“Damages ‘adequate to compensate for the infringement, in the words of 35 U.S.C. § 284 (1982), are usually measured . . . as the patent owner’s lost profits or reasonable royalty.”).

¹⁵*See* Kearns v. Chrysler Corp., 32 F.3d 1541, 1551 (Fed. Cir.1994).

¹⁶*See* Lam, Inc. v. Johns–Manville Corp., 718 F.2d 1056, 1068 (Fed. Cir.1983).

¹⁷575 F.2d 1152 (6th Cir.1978).

¹⁸*Id.* at 1156.

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Should the prevailing patentee be unable to demonstrate entitlement to lost profits damages, it may obtain “no less than a reasonable royalty.”¹⁹ To determine this amount, the courts indulge in the legal fiction of a hypothetical licensing negotiation.²⁰ The reasonable royalty is set to the rate a willing patent owner and willing licensee would have decided upon had they negotiated the license on the date the infringement began.²¹ The well-known decision in *Georgia-Pacific Corp. v. United States Plywood Corp.*²² identified numerous factors to be considered in reaching a damages

¹⁹35 U.S.C. § 284 (2006).

²⁰*See Minco, Inc. v. Combustion Eng'g, Inc.*, 95 F.3d 1109, 1119 (Fed. Cir. 1996).

²¹*See Unisplay, S.A. v. American Elec. Sign Co.*, 69 F.3d 512, 518 (Fed. Cir. 1995).

²²318 F.Supp. 1116 (S.D.N.Y.1970), *modified and aff'd*, 446 F.2d 295 (2d Cir. 1971). These factors include:

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; that 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 convoyed 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

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determination. Consistent with the patent law's emphasis upon real-world valuations, the most prominent of the *Georgia-Pacific* factors has traditionally been the established royalty rate for the infringed patent, or for other patents comparable to the one being infringed.²³

Whether damages are assessed as lost profits and reasonable royalties, these methodologies are intended to generate damages awards that approximate the marketplace value of the patented invention.²⁴ Recent scholarship suggests, however, that damages awards have begun to outpace the value attributable to the contribution made by the patented invention. An empirical study by Lemley and Shapiro reveals that judicially awarded reasonable royalty rates is 13.13% of the price of the infringing product.²⁵ As Lemley and Shapiro suggest, this figure seems high.²⁶ A review of the case law, along with more general techniques that courts employ to determine reasonable royalties, provides a number of plausible reasons for the elevation of judicially determined damages award beyond real-world licensing rates. When combined with the additional problems that apportionment

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.

²³See *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1554 (Fed. Cir. 1995) (*en banc*) (“The royalty may be based upon an established royalty, if there is one, or if not, upon the supposed result of hypothetical negotiations between the plaintiff and defendant.”); *Nickson Indus., Inc. v. Rol Mfg. Co.*, 847 F.2d 795, 798 (Fed. Cir. 1988) (“Where an established royalty exists, it will usually be the best measure of what is a ‘reasonable’ royalty.”).

²⁴See *Grain Processing Corp. v. American Maize-Prods. Co.*, 185 F.3d 1341, 1350 (Fed. Cir. 1999) (“The ‘but for’ inquiry therefore requires a reconstruction of the market, as it would have developed absent the infringing product, to determine what the patentee ‘would . . . have made.’”) (citation omitted); *Rite-Hite v. Kelley*, 56 F.3d at 1576 (Nies, C.J., dissenting-in-part) (“The focus of a reasonable royalty determination is on the value of the invention in the marketplace.”).

²⁵Lemley & Shapiro, *supra* note 2, at 28-33.

²⁶*Id.* at 31.

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raises, the potential for elevated patent infringement damages seems very real.

One reason for generous damages award in patent cases is that established royalty rates, long considered the most pertinent factor in assessing damages for patent infringement, have begun to play a diminished role in reasonable royalty calculations. Recent Federal Circuit cases have affirmed reasonable royalty awards that both disregarded market rates and dramatically exceeded the adjudicated infringer's profits. In *Monsanto Co. v. Ralph*,²⁷ for example, the court of appeals upheld damages that were 5-10 times the "technology fee" charged to use the patented seed. In so doing, the Federal Circuit specifically rejected the adjudicated infringer's argument that no rational actor would negotiate a royalty that exceeded his anticipated profits. Holding that there was no rule that an infringer be permitted to make a profit,²⁸ the court of appeals instead pointed to the patent proprietor's restrictive licensing policies in order to justify what was essentially an award of punitive damages.²⁹

Although mooring the reasonable royalty award to real-world licensing rates would have lead to a more sensible holding in the *Monsanto* case, it should be appreciated that this technique may itself lead to elevated patent damages awards. As Lemley and Shapiro have explained, reliance upon royalty rates are likely to exceed the average figure. The reason is that most royalty rates are maintained in confidence by the licensor and licensee. Damages experts who testify in federal court concerning the outcome of a hypothetical negotiation must therefore rely upon that subset of licenses whose royalty rates are publicly available.³⁰

Lemley and Shapiro explain that publicly available royalty rates do not form a random sample, but rather are skewed towards larger amounts. They reason that such information is most likely obtained via the operation of the securities laws, which require disclosure of royalties that are material to the reporting enterprise. License agreements that involve the payment of a large sum of money are understandably more likely to be more material than those that are not.³¹

In addition, judicial reliance upon previous royalty rates is entirely circular. Licensing rates negotiated by private parties are not set in the abstract, but rather based upon judicial holdings

²⁷382 F.3d 1374 (Fed. Cir. 2004).

²⁸*Id.* at 1384.

²⁹See Landers, *supra* note 2, at 347-49.

³⁰Lemley & Shapiro, *supra* note 2, at 31.

³¹*Id.* at 23.

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establishing damages figures.³² To the extent that courts are awarding overly generous reasonable royalty rates, reliance upon the reported royalty rates perpetuates this tendency. Such reliance may also discourage patent proprietors from agreeing upon modest reasonable royalties in the marketplace, out of recognition that the remedies that flow from future litigation may be negatively impacted.

Another reason for damage award inflation may be due to the limitations of the hypothetical negotiation methodology. This approach assumes that the negotiators come to the bargaining table with the assumption that the patent is not invalid and has been infringed.³³ Although a judgment upholding a patent is necessarily a predicate of assessing patent damages, negotiations held at the time infringement has commenced would assuredly not proceed employing this assumption. Such bargaining would instead recognize that both patent validity and infringement may be contested by the accused infringer.³⁴

To reasonable negotiators, the possibility of a patent been held invalid, or construed in a manner unfavorable to its proprietor, would undoubtedly result in some discount in favor of the accused infringer.³⁵ The amount of this discount may be considerable. Although estimates of the percentage of litigated patents vary, empirical studies have suggested that approximately one-third of litigated patents—and possible an even higher percentage—are ruled to be invalid.³⁶ Notably, in

³²*Id.* at 22-23. See also Amy L. Landers, *Liquid Patents*, 84 DEN. U. L. REV. 199, 245 (2006).

³³*Rite-Hite v. Kelley*, 774 F. Supp. 1514, 1535 (E.D. Wis. 1991), *aff'd in part, vacated in part*, 56 F.3d 1538 (Fed. Cir. 1995) (*en banc*); *TP Orthodontics, Inc. v. Professional Positioners, Inc.*, 20 USPQ2d 1017, 1025 (E.D. Wis. 1991) (“Any negotiation is based on the assumption that the patent was valid and infringed.”), *aff'd*, 980 F.2d 743 (Fed. Cir. 1992). See also John J. Barnhardt, III, *Revisiting the Reasonable Royalty as a Measure of Damages for Patent Infringement*, 86 J. PAT. & TRADEMARK OFF. SOC’Y 991, 1008 (2004).

³⁴35 U.S.C. § 282 (2006).

³⁵Edward F. Sherry & David J. Teece, *Some Economic Aspects of Intellectual Property Damages*, 573 PLI/Pat 399, 418 (1999) (“Our point here is that a ‘reasonable royalty’ for the purposes of assessing damages for past patent infringement may be significantly different (and, in particular, higher than) the actual negotiated royalty for the same patent, because the actual negotiated royalty reflects what might be termed an ‘uncertainty discount’ because of uncertainty about validity and infringement issues.”).

³⁶The precise invalidity percentage varies depending upon the time period considering in the study. See, e.g., Kimberly Moore, *Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation?*, 79 N.C. L. Rev. 889, 918 (2001) (finding a 33% invalidity rate in patent cases going to trial between 1983 and 1999); John R. Allison & Mark A. Lemely, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 85 (1998) (reporting that 46% of patents litigated to judgment are

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some market segments the percentage of invalidated patents appears to be much higher. In Hatch-Waxman cases addressing pharmaceutical patents, for example, generic firms apparently prevail over patent holders 70% of the time.³⁷ The premise that the patent is nonetheless indisputably not invalid and infringed necessarily causes the hypothetical negotiation methodology to fail to account for an essential reality of licensing negotiations that occur outside the courtroom.

This critique of the hypothetical negotiation methodology suggests its refinement, not necessarily its rejection. Properly conducted, this construct potentially offers several benefits. One is that this mindset focuses attention upon the desired output of this exercise: “an amount which a person, desiring to manufacture and sell a patented article, as a business proposition, would be willing to pay as a royalty and yet be able to make and sell the patented article, in the market, at a reasonable profit.”³⁸ Yet Federal Circuit decisions have at times lost sight of the notion that a bargained-for exchange should offer benefits to both negotiating parties. The recent decision in *Go-Light v. Wal-Mart Stores, Inc.*³⁹ provides one example of this troubling tendency.

In *Go-Light*, Wal-Mart was found to infringe a patent claiming a wireless, remote-controlled, portable search light. The district court awarded the patentee damages of \$31.80 per infringing unit. Although this figure was in theory based upon the reasonable royalty methodology, the district court in fact arrived at this number by awarding 50% of the patentee’s incremental profits. On appeal, Wal-Mart pointed to evidence that it typically paid 2-5% of the product’s wholesale cost as an intellectual property royalty, and that the court’s damages award left it selling the patented product at a significant loss. The court of appeals quickly dismissed these assertions, however, characterizing Wal-Mart’s assertions as “nothing more than what it might have preferred to pay . . .”⁴⁰ Affirming the damages award, the Federal Circuit cited previous holdings for the proposition that “[t]here is no rule that a royalty be no higher than the infringer’s net profit margin.”⁴¹

struck down); Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 Cal. L. Rev. 803, 822 (1988) (citing sources reporting that the Federal Circuit invalidated 44% of litigated patents between 1982 and 1985).

³⁷See *Authorized generics’ branded pharmaceuticals gain shares of generic market*, Pharmacy Choice (Oct. 2, 2005).

³⁸*Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1157-58 (6th Cir. 1977) (Markey, C.J.).

³⁹355 F.3d 1327 (Fed. Cir. 2004).

⁴⁰*Id.* at 1338.

⁴¹*Id.* (citing *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1555 (Fed. Cir. 1995) (*en banc*); *State Indus., Inc. v. Mor-Flo Indus., Inc.* 883 F.2d 1573, 1580 (Fed. Cir. 1989)).

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The reasoning of decisions such as *Go-Light* raises concerns, particularly in combination with other judicial trends that are expanding judicial awards of damages for patent infringement.⁴² Yet as significant as these concerns are, they are further elevated when the accused product embodies multiple patented inventions. Simply put, if damages awards for infringement of one patent may permissibly exceed the infringer's earnings, the possibility of inordinate damages awards is even greater when a single product or process embodies multiple patents. This Article addresses this concern next.

II. THE PROBLEM OF APPORTIONMENT

The issue of apportionment arises because the scope of the patented invention does not always align neatly with products or processes available within the marketplace. Choices made when drafting a patent's claims provide one reason for this distinction. The drafter may have prepared the claim in a narrow fashion, directing it to a particular component of a product or step of a process. Alternatively, the drafter may have drawn the claim more broadly, to the entire product or process itself. These options typically have little to do with compliance with the statutory requirements for obtaining a patent, but they may loom large during the damages phase of a patent enforcement proceeding.⁴³

Consider, for example, the drafting choices available to the inventor of a new air filter for use in automobiles. The inventor—or more likely, a patent attorney representing that inventor—could simply draft a narrow claim to the air filter itself. However, the inventor could also claim an automobile engine, or even an entire automobile, featuring the new filter. At the patent-granting stage, this “environmental” claiming practice plays no role in fulfilling patentability criteria such as novelty, obviousness, or enablement. Should an automobile manufacturer infringe a broadly drawn claim by selling cars incorporating the air filter, however, this drafting decision would at least facially affect the amount of damages that were owed for infringement.

The role of the patented invention within the marketed product or process may also contribute to the disconnect between claim scope and the economic contribution of the patented invention. Some inventions play a quantitatively minor role within the larger product or process of which they are a part, but nonetheless lend significant value to the greater whole. Other inventions have a diminished impact, however, due to the availability of alternative technologies or the relative

⁴²See Landers, *supra* note 2, at 35-54.

⁴³See William C. Rooklidge, *Reform of the Patent Laws: Forging Legislation Addressing Disparate Interests*, 88 J. PAT. & TRADEMARK OFF. SOC'Y 9, 16-17 (2006); John W. Schlicher, *Measuring Patent Damages by the Market Value of Inventions—The Grain Processing, Rite-Hite, and Aro Rules*, 82 J. PAT. & TRADEMARK OFF. SOC'Y 503, 525 (2000); Brent Rabowsky, *Recovery of Lost Profits on Unpatented Products in Patent Infringement Cases*, 70 S. CAL. L. REV. 281, 293-95 (1996).

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importance of the patented invention in comparison with the other features of the marketed product or process. To continue the previous example, air filter technology is not a factor in the automobile purchasing decisions made by most consumers. But other discrete engineering features, such as hybrid propulsion technology, side-impact airbags, or a heads-up display, might potentially influence purchasing decisions made for particular automobiles.

Recognizing that claim scope does not always neatly dovetail with the marketplace value of the patented invention, the courts have crafted both the principle of “apportionment” and the “Entire Market Value Rule.”⁴⁴ If the court determines that the infringing sales were due to factors beyond the use of the patented invention, even where the claim is drawn broadly to an entire product or process, then the court should apportion the value attributable to the infringement and the value that is owed to other factors. Stated differently, an apportionment analysis contracts the damages base due to the infringer’s contributions, technologies developed by third parties, and other factors, in order to reach a just measure of damages.⁴⁵

On the other hand, courts may apply the Entire Market Value Rule to allow for recovery of damages based upon an entire product or process that incorporates numerous features, even though the patented component forms just one component of the larger device. The case law identifies two primary requirements for application of the Entire Market Value Rule. First, the infringing feature must form the basis for consumer demand.⁴⁶ Merely because the patented invention serves a function that is important to the commercialized device does not allow the damages base to incorporate unpatented features. Second, the patented and unpatented components in combination must be “analogous to components of a single assembly,” form “parts of a complete machine,” or “constitute a functional unit.”⁴⁷ Where the unpatented components do not enjoy a functional relationship with the patented invention, but rather are sold together only as a matter of convenience or business advantage, then the Entire Market Value Rule does not apply.

⁴⁴See generally Laura B. Pincus, *The Computation of Damages in Patent Infringement Actions*, 5 HARV. J. L. & TECH. 95 (1991).

⁴⁵*Dowagiac Mfg. Co. v. Minn. Moline Plow Co.*, 235 U.S. 641 (1915).

⁴⁶*State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1580 (Fed. Cir. 1989).

⁴⁷*Immonex Servs., Inc. v. W.H. Munzprufer Dietmar Trenner GmbH*, 408 F.3d 1374, 1379 (Fed. Cir. 2005) (quoting *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1550 (Fed. Cir. 1995) (*en banc*); *Tec Air, Inc. v. Denso Mfg. Michigan Inc.*, 192 F.3d 1353, 1362 (Fed. Cir. 1999) (also quoting *Rite-Hite v. Kelley*).

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An example, based upon a reported judicial opinion,⁴⁸ illustrates these principles. Suppose, for example, that a patent claims a particular weight training machine for performing a bench press. The adjudicated infringer markets the patented machine in combination with several other machines—including devices allowing performance of a leg curl, military press, squat, and other exercises. Whether the damages base should be based upon the entire combination sold by the infringer, or instead the amount attributable to the bench press device alone, depends upon two factors. First, the patented invention itself must serve as the basis for customer demand. Second, the patented invention must form one component of a single mechanically integrated device, rather than being one segment of a multistation aggregation of discrete exercise machines.

These fundamental damages principles are of long lineage in the patent law.⁴⁹ Yet recent case law has applied them unevenly. Courts are increasingly expanding the damages base to include unpatented components in situation where consumers would customarily employ them alongside the patented invention, or they would merely view the patented invention as a desirable feature within a larger product or process.⁵⁰ The reported decisions also depart from the principle that the unpatented parts must enjoy “functional relationship” with the patented invention, instead awarding damages for components that might be foreseeably sold in connection with the infringing product. The result is that inventors, either by employing environmental claiming techniques during prosecution or invoking the Entire Market Value Rule in litigation, have been able to expand the damages base beyond the actual value of their inventions. This Article next reviews these developments.

A. Apportionment and Reasonable Royalties

Contemporary patent damages opinions seem increasingly disinclined to apply apportionment principles, instead quickly adopting the Entire Market Value Rule with succinct reasoning and minimal supporting evidence. The holding in the Federal Circuit opinion in *State Contracting & Engineering Corp. v. Condotte* is exemplary.⁵¹ Here the adjudicated infringers were public works contractors who, following the placement of successful bids, had constructed a highway on behalf

⁴⁸Universal Athletic Sales Co. v. American Gym, 480 F. Supp. 408 (W.D. Penn. 1979).

⁴⁹The Supreme Court adopted the principle of apportionment in patent damages cases more than 150 years ago in *Seymour v. McCormick*, 57 U.S. 480 (1853), and issued more than 35 subsequent opinions explaining the rule. For a well-researched history of the case law concerning apportionment, see Bensen, *supra* note 2.

⁵⁰See Bensen, *supra* note 2, at *3 (observing that “modern patent damages cases rarely address apportionment.”).

⁵¹346 F.3d 1057 (Fed. Cir. 2003).

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of the Florida Department of Transportation. Each was found to infringe a patent claiming a column and pile design useful for supporting sound barrier walls. The district court awarded reasonable royalties based upon the amount of the entire construction contract, however, rather than merely upon the cost of the patented soundwall.⁵²

Following an appeal, the Federal Circuit affirmed. The court of appeals rejected the contractors' assertion that the patentee's expert had erroneously equated the royalty base to the entire contract price. The court succinctly observed that the government had incorporated the patented design into its bid specifications, and further found no evidence that the defendants would have specified an alternative design if the soundwall design had been known to infringe. As a result, the court of appeals concluded, the jury's award was appropriately supported by the patentee's expert testimony.⁵³

The damages ruling in *State Contracting* is problematic. Highway construction projects incorporate diverse elements, ranging from human labor to the leasing of all manner of equipment. Allowing all of these factors to contribute to the damages base for use of a particular soundwall design seems an unreasonable expansion of the patent right enforced in that case. The Federal Circuit appeared to rely upon the notion that the entire contract price was the appropriate royalty base because the government would not have accepted a bid that did not incorporate the patented soundwall design.⁵⁴ This logic is unpersuasive. The soundwall was not the sole design element required to complete the project; and by the same token, the government could not have chosen the winning bidder due to the presence of that design. Use of the patented invention could not have served as the basis for customer demand under the facts of the case, and therefore the Entire Market Value Rule should not have applied.

Other Federal Circuit decisions seem too generously disposed towards application of the Entire Market Value Rule, rather than the apportionment of damages. In particular, the court of appeals at times dispenses of the traditional rule that unauthorized uses of the patented invention must drive the defendant's sales for the Entire Market Value Rule to apply. In *Fonar Corp. v. General Elec. Co.*,⁵⁵ for example, the patented invention was limited to a specific imaging feature incorporated into an Magnetic Resonance Imaging (MRI) machine. The court nonetheless upheld a jury's damages award consisting of a royalty based upon the value of an entire accused MRI

⁵²*Id.* at 1072.

⁵³*Id.*

⁵⁴*Id.*

⁵⁵107 F.3d 1543, 1552-53 (Fed. Cir. 1997).

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machine.⁵⁶ In finding evidence before the jury sufficient to support this holding, the Federal Circuit pointed to the infringer’s own brochures and technical literature that “emphasized” the patented feature.⁵⁷ The fact that the infringer had entered no less than sixteen licenses calling for royalty rates significantly lower than the jury’s damages award did not prevent an affirmance.

Similarly, in *Bose Corp. v. JBL, Inc.*,⁵⁸ the claimed invention consisted of a particular type of “loudspeaker enclosure”—essentially a cabinet in which a stereo loudspeaker sits. In particular, the patented loudspeaker enclosure featured a “port tube” that allowed some of the acoustic energy inside the cabinet to be released with proper attention to phase relationships, in order to eliminate port noise and increase bass response. When assessing damages against an adjudicated infringer, however, the trial court allowed the royalty base to consist of the entire loudspeaker system, rather than just the infringing port tube. The Federal Circuit affirmed, reasoning that the port tube enjoyed a functional relationship to the loudspeakers; that the enclosure improved the performance of the loudspeakers; and that the enclosure “contributed substantially to the increased demand for the products in which it was incorporated.”⁵⁹

The analysis in both *Fonar* and *Bose* appears to diminish substantially earlier law requiring that the patented technology must form “the basis for customer demand” for the Entire Market Value Rule to apply. Although the *Fonar* opinion relies upon the fact that the patented feature had been identified in the defendant’s marketing and technical literature, the court’s own quotations from these documents suggest a more modest emphasis. For example, one brochure stated that the patented technology was merely “helping to enhance efficiency and patient throughput.”⁶⁰ The holding appears to be that if the defendant accurately identifies the patented technology in its technical or marketing literature, then the Entire Market Value Rule should apply.⁶¹ In *Bose*, the Federal Circuit appears to hold that the Entire Market Value Rule applies if the patented technology offers some advantage technically and in the marketplace, whether the patented technology was the driver for increased sales or not. These notions both fall short of the concept that the Entire Market Value Rule applies when only when the unauthorized use of the patented invention “was of such

⁵⁶*Id.* at 1552.

⁵⁷*Id.*

⁵⁸274 F.3d 1354, 1361 (Fed. Cir. 2001).

⁵⁹*Id.* at 1361.

⁶⁰*Id.*

⁶¹*See Landers, supra* note 2, at 374.

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paramount importance that it substantially created the value of the component parts.”⁶²

The notion of foreseeability also increasingly appears to trump the requirement that the unpatented components within the damages base have a functional relationship with the patented invention. In *Hem, Inc. v. Behringer Saws, Inc.*,⁶³ for example, the infringed patent claimed a “feed table,” a mechanical device for moving workpieces, such as sections of wood, towards a saw, drill, or other machine tool. The jury awarded infringement damages based not just upon sales of feed tables, however, but upon the adjudicated infringer’s sales of unpatented saws as well. Observing that the feed tables were never sold independently from the saws, the court concluded that the basis for customer demand was the combination of these two components. The fact that the patentee had not invented the saws, and that the saws were also sold and used independently from the feed table, did not convince the trial judge that this award was inappropriate.

Another district court opinion, *Lucent Techs., Inc. v. Newbridge Networks, Inc.*,⁶⁴ followed a similar rationale while declining to apportion damages. This lengthy district court opinion involved the infringement of a patented data networking device. With respect to damages, the court allowed two unpatented software programs—designated as 4602 and 46020—to be included in the royalty base, even though they were not physically part of the patented device, and were not even necessary for the patented device to operate. Because the court concluded that sales of the programs along with the device were foreseeable, it allowed these products to be included in the royalty base.⁶⁵

It is easy to imagine why the Entire Market Value Rule seems increasingly to apply where apportionment would be more appropriate. Conducting an apportionment analysis is plainly a more

⁶²*Marconi Wireless Tel. Co. v. United States*, 99 Ct. Cl. 1, 49 (Ct. Cl. 1942), *aff’d in part and vacated in part*, 320 U.S. 1 (1943). In defending the holding in the *Bose* decision, Rooklidge asserts that the “court considered the effect of the port on the consumer demand for a speaker system having the qualities provided by this combination, found that the port was the basis for the value of the overall speaker assembly, and determined that it was appropriate to award damages accordingly. In other words, the *Bose* court correctly applied the Entire Market Value Rule to the facts it found.” Rooklidge, *supra* note 43, at 19. See also Letter of September 1, 2005, from Philip S. Johnson, Chief Patent Counsel, Johnson & Johnson, to the Honorable Zoe Lofgren, Subcommittee on Courts, the Internet, and Intellectual Property, House of Representatives (presenting an identically worded analysis of the *Bose* decision). The author respectfully disagrees with this analysis of the *Bose* decision. Nowhere in its decision does the Federal Circuit make the crucial holding that the patented component served as the basis for customer demand for the entire speaker system. See *Bose*, 274 F.3d at 1361.

⁶³2003 WL 23213578 (N.D. Okla. 2003).

⁶⁴168 F. Supp. 2d 181 (D. Del. 2001).

⁶⁵*Id.* at 237-38.

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time-consuming and technical exercise than simply using the market price of the accused product or process as the damages base.⁶⁶ Yet failure to apply apportionment principles can too readily lead to circumstances where the damages award has nothing to do with the contribution the inventor made through the patented invention. Suppose, for example, that the identical infringing circuit is incorporated into two different types of desktop computers: Brand A, that retails at \$1,000, and Brand B, costing \$6,000. Circuits incorporated into Brand B computers are unlikely to be worth six times as much as those found in Brand A computers. Judicial inattentiveness to apportionment principles may lead precisely to this sort of result, however.

The decline of apportionment principles may also be due to an affirmative judicial desire to award a prevailing patent proprietor supracompetitive rates as damages. Under this rationale, although courts state that damages award are intended only to compensate patent proprietors for the infringement,⁶⁷ they are nonetheless sympathetic to patent proprietors who prevail in litigation but leave the courtroom with market-oriented rates. For example, in the influential decision in *Panduit Corp. v. Stahl Brothers Fibre Works, Inc.*,⁶⁸ Chief Judge Markey explained that:

Except for the limited risk that the patent owner, over years of litigation, might meet the heavy burden of proving the four elements required for recovery of lost profits, the infringer would have nothing to lose, and everything to gain if he could count on paying only the normal, routine royalty non-infringers might have paid. As said by this court in another context, the infringer would be in a “heads-I-win, tails-you-lose” position.⁶⁹

Under this view, failure to augment damages insufficiently compensates patent proprietors who are forced to litigate. It may also encourage infringers to refuse to license voluntarily.⁷⁰

The reasoning in *Panduit* suffers from several flaws. First, Congress has also stipulated that prevailing patent proprietors may be entitled to the award of a permanent injunction prohibiting

⁶⁶See, e.g., *King Instruments Corp. v. Perego*, 65 F.3d 941, 957 (Fed. Cir. 1995) (appreciating the practical difficulties of conducting an apportionment exercise).

⁶⁷See *supra* note 13.

⁶⁸575 F.2d 1152 (6th Cir. 1978).

⁶⁹*Id.* at 1158 (citation omitted).

⁷⁰See Raymond P. Niro & Paul K. Vickrey, *The Patent Troll Myth*, 7 SEDONA CONF. J. 153, 157 (2006).

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future infringement.⁷¹ Unless the adjudicated infringer can readily shift its manufacturing and distribution facilities to an alternative technology, the imposition of an injunction is likely to be a costly and even fatal event for that enterprise. The availability of an injunction provides an additional incentive for private bargaining, regardless of the award of damages for past infringement.

Second, this line of reasoning ignores the reality that the patent system relies upon stubborn defendants in patent cases to weed out invalid patents.⁷² The punishment of adjudicated infringers through high damages awards would not only discourage private efforts to maintain patent quality, it is also inconsistent with congressional directives expressed within the Patent Act. Notably, Congress has provided for the award of enhanced damages,⁷³ as well as the award of attorney fees in “exceptional cases.”⁷⁴ Congress is of course free to expand upon the circumstances in which courts may award punitive damages. Notably, earlier patent statutes called for the automatic award of punitive damages,⁷⁵ and one bill introduced in the 109th Congress called for the award of attorney fees to prevailing patent holders.⁷⁶ Absent statutory amendments, however, judicial award of punitive damages or attorney fees through the guise of compensatory damages flies in the face of congressional intent.

In fairness to the courts, a number of recent opinions have been more sensitive to apportionment concerns. For example, in *Imonex Services v. W.H. Munzprufer Dietmore Trenner*

⁷¹35 U.S.C. § (2006). See *eBay Inc. v. MercExchange L.L.C.*, ___ U.S. ___, 126 S.Ct. 1837 (May 15, 2006).

⁷²See Stuart Minor Benjamin & Arti K. Rai, *Who’s Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 GEO. L.J. 269 (2007); Joseph Scott Miller, *Building a Better Bounty: Litigation-Stage Rewards for Defeating Patents*, 19 BERKELEY TECH. L.J. 667 (2004); John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305.

⁷³35 U.S.C. § 284 (2006) (“the court may increase the damages up to three times the amount found or assessed.”).

⁷⁴35 U.S.C. § 285 (2006) (allowing for the award of attorney fees in “exceptional cases”). See *Mathis v. Spears*, 857 F.2d 749, 753-54 (Fed. Cir. 1988).

⁷⁵The Patent Act of 1800 stipulated an award of “a sum equal to three times the actual damage sustained by such patentee.” Act of 1800, 2 Stat. 37. See *Nike, Inc. v. Wal-Mart Stores, Inc.*, 138 F.3d 1437, 1440 (Fed. Cir. 1998).

⁷⁶The Patent Reform Act of 2006, § 5(b), S. 109-3818.

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GmbH,⁷⁷ the Federal Circuit approved the use of apportionment principles to assess damages for infringing a patent on a coin collectors used with commercial laundry machines. The court rejected the plaintiff's contention that a reasonable royalty should be based upon the combination of coin collectors and the laundry machines to which they were attached. Finding insufficient evidence of record that the coin collectors formed the basis for the laundry machines as a whole,⁷⁸ the Federal Circuit affirmed a royalty based solely on the sales of after-market kits that embodied the patented coin collectors.⁷⁹

Moreover, one Federal Circuit panel acknowledged that damages awards should account for the possibility of other royalty amounts. In the well-known litigation in *Integra Lifesciences I, Ltd., v. Merck KGaA*,⁸⁰ the court of appeals considered the district court's judgment that Merck had infringed Integra's RGD peptide patents. The appeals court ultimately reversed the jury award of \$15 million in damages as a reasonable royalty as unsupported by substantial evidence. Intending to remand the matter for further consideration of damages, Judge Rader offered the following instruction:

In addition, the number of patent licenses needed to develop a drug may also affect the valued placed on any single technology used in the development process. The cumulative effect of such stacking royalties can be substantial, particularly when reach-through royalties come into play. . . . [T]he effect of, if any, of stacking royalties may also play a role in crafting the hypothetical license between Integra and Merck.⁸¹

The Supreme Court famously reversed the Federal Circuit on different grounds in *Merck v. Integra*.⁸² Yet the holding that courts should account for overlapping royalty obligations when assessing damages for patent infringement remains an eminently sensible one.

⁷⁷408 F.3d 1374 (Fed Cir. 2005).

⁷⁸*Id.* at 1380.

⁷⁹*See also* Riles v. Shell Exploration & Prod. Co., 298 F.3d 1302, 1312 (Fed. Cir. 2002) (reversing damages award based upon entire cost of offshore platform for infringement of patented method of fixing platform to the sea floor).

⁸⁰331 F.3d 860 (Fed. Cir. 2003).

⁸¹*Id.* at 871-72.

⁸²545 U.S. 193 (2005).

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Although *Integra v. Merck* and other cases present positive developments, uneven judicial application of apportionment principles creates an environment of uncertainty for high technology manufacturers.⁸³ In particular, current case law suggests that the evidence required to support application of the Entire Market Value Rule is quite minimal. These holdings essentially elevate the Entire Market Value Rule into the prevailing damages standard in patent law, with apportionment serving as an exception. As this Article discusses next, however, the inapplicability of apportionment within the context of lost profits awards is even more troubling.

B. Apportionment and Lost Profits

Although applied unevenly within the context of a reasonable royalty, apportionment plays a well-defined role in lost profits determinations. Modern courts simply decline to apportion damages in lost profits cases. Stated differently, once a court has determined that the sale made by the adjudicated infringer would have been made by the patentee, then the patentee's entire lost profits serve as the damages base. This standard prevails even where the patented invention serves merely as one component of a complex, multi-component infringing product. As a leading opinion, *W.L. Gore & Associates, Inc. v. Carlisle Corp.*, stated: "Once the fact that sales have been lost has been proven, there is no occasion for the application of apportionment."⁸⁴

In support of its conclusion, *Carlisle v. Gore* explained that apportionment was inapplicable in lost profits cases because such awards are compensatory, rather than equitable in nature. Under prevailing law, lost profits are to be awarded based upon sales that the patentee would have made "but for" the infringement. Under this chain of reasoning, once a patentee demonstrates that it would have achieved a sale absent the infringement, then it should be entitled to the entire amount of the profit associated with that sale. Whether the patent concerns merely a component of the infringing

⁸³In addition to the judicial opinions previously discussed, a number of other Federal Circuit decisions apply the Entire Market Value Rule based upon evidence that fell short of the established requirement that the patented invention serve as the basis for customer demand. For example, in *Interactive Pictures Corp. v. Infinite Pictures, Inc.*, 274 F.3d 1371, 1384 (Fed. Cir. 2001), the court of appeals affirmed the inclusion of all of the patent proprietor's products in the royalty base, rather than merely the infringing products. In *Tec Air, Inc. v. Denso Manufacturing Michigan Inc.*, 192 F.3d 1353, 1362 (Fed. Cir. 1999), a suit involved a patented method and device for balancing a fan inside an assembly, the court of appeals upheld a damages award based upon sales of entire radiator and condenser assemblies. In *Code-Alarm, Inc. v. Electromotive Technologies Corp.*, 114 F.3d 1206, 1997 WL 311542, at *3 (Fed. Cir. 1997) (nonprecedential opinion), the court of appeals allowed the value of the entire vehicle alarm system to serve as the royalty base, rather than the single component (a motion sensor) that was patented.

⁸⁴198 USPQ 353, 364 (D. Del. 1978).

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product is irrelevant under this logic.⁸⁵

This line of reasoning holds a certain superficial appeal. After all, the adjudicated infringer has caused an injury to the patent proprietor that the infringer could have foreseen. Use of apportionment principles would seemingly limit the compensation of the patent proprietor to only a portion of the injury that was suffered.⁸⁶ It is for this reason that some commentators have announced the “death of apportionment,” at least as applied to lost profits damages.⁸⁷

Yet failure to apply apportionment in lost profits cases potentially leads to the same harms that apply to damages awards based upon reasonable royalties. It may well be the case that “but for” the infringement, the patent proprietor may have achieved a sale. Yet the award of the entirety of lost profits for infringement of a particular patent may effectively expand its scope of protection to incorporate inventions claimed by other, unrelated patents. This proposition is best illustrated through an example.⁸⁸ Consider an industry with three participating firms, Alpha, Beta, and Gamma. Each firm sells a product that incorporates two discrete inventions (call them X and Y). Because the combination of X and Y implements an industry standard, products must incorporate both inventions in order to be saleable. Further assume that Alpha owns the ‘001 patent, which claims invention X, while Beta owns the ‘002 patent concerning invention Y.

Under this hypothetical, if Alpha sues Gamma for infringement of the ‘001 patent, Alpha should be able to recover lost profits in view of *Gore v. Carlisle*. Logically, “but for” the infringement of the ‘001 patent, Gamma would not have been able to sell the combination of X and Y. However, awarding the entirety of lost profits neglects the fact that Alpha’s hypothetical lost sales would also take advantage of invention Y and the proprietary interest established by the ‘002 patent. This problem is compounded from the perspective of Gamma. Due to its infringement of

⁸⁵The leading damages decision of the Federal Circuit, *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538 (Fed. Cir. 1995), could also be read as rejecting the role of apportionment of damages measured as lost profits. In *Rite-Hite* the Federal Circuit explained that in order “[t]o recover lost profits damages, the patentee must show a reasonable probability that, ‘but for’ the infringement, it would have made the sales that were made by the infringer.” *Id.* at 1545. This simple “but for” standard, based upon the foreseeability of the infringing sales, appears to pay no regard to the principle of apportionment. It should be appreciated, however, that apportionment was not at issue in the *Rite-Hite* litigation, not did the Federal Circuit discuss this principle. See Bensen, *supra* note 2, at *31.

⁸⁶*Id.* at *23.

⁸⁷See Roger D. Blair & Thomas F. Cotter, *Rethinking Patent Damages*, 10 TEXAS INTELL. PROP. L.J. 1, 24 (2001).

⁸⁸Bensen, *supra* note 2, at *56 n.209, provides a similarly reasoned example.

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the '002 patent, Gamma would be also be liable to the full extent of Beta's lost profits. Not only does the rejection of apportionment principles within the context of lost profits expose Gamma to doubled liability, it effectively allows the scope of each patent to expand to include the other.

This example should not be viewed as strained or unusual. Given the numerous patents that cover a particular products in many industries, the fact that only two patents are involved may make this hypothetical rather understated.⁸⁹ Apportioning lost profits damages would ensure that the inventor's remedy is tied to his technological and economic contribution, and not extended towards technologies that he did not invent.

III. REFORMING PATENT DAMAGES LAW

A. The Policy of Apportionment

Damages awards that dramatically exceed the commercial value of a patented invention conflict with the fundamental patent law norm that the marketplace is the best evaluator of an invention's worth. This theoretical imbalance manifests itself through a number of deleterious practical consequences. First, excessive damages awards may promote patent litigation. A rational patent proprietor may be unwilling to make fair royalty demands in the boardroom when they are able to obtain significantly higher damages awards in the courtroom.⁹⁰

Second, the gap between the damages awarded for patent infringement and the marketplace value of a patented invention may also encourage speculation in patents. So-called trolls—entrepreneurial speculators who prefer to acquire and enforce patents rather than engage in research, development, manufacturing, or other socially productive activity—may be animated in part by the reality that patent damages awards may exceed profits that can be obtained in the marketplace.⁹¹ Put differently, overly generous damages awards may encourage firms to play the patent game, rather than engage in manufacturing, marketing, or other more socially productive activity.

⁸⁹See *supra* note 6.

⁹⁰In this regard, overly generous use of the Entire Market Value Rule may also make it more difficult for parties to achieve a settlement of legitimate patent disputes. Because the Entire Market Value Rule disregards the precise scope of the claims in measuring damages, determinations of the patent's value are left to determinations by judges and juries during litigation. These unpredictable decisions counter the innovation policy goal of allowing potential infringers to read a patent instrument and predict the cost of infringement. This uncertainty may in turn inhibit litigation settlements and voluntary licensing of patents.

⁹¹Landers, *supra* note 2, at 343-47.

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Third, the failure to apportion patent damages may cause the scope of patent protection routinely to extend beyond the scope of its claims. At times, of course, the scope of the claim does not adequately reflect the marketplace value of the inventor's contribution, due either to claim drafting techniques or commercial marketing decisions. In such circumstances courts appropriately apply the Entire Market Value Rule. Yet when the Entire Market Value Rule effectively becomes the default damages principle, rather than one that applies under only particular circumstances, the actual scope of patent protection may greatly exceed the claim scope that has been sought and obtained. Failure to apportion damages may cause a patent effectively to cover contributions that lie within the public domain, as well as technology that has been patented by third parties or even by the infringer. Current patent remedies practice too quickly disregards a host of patentability and infringement doctrines—including, among others, novelty, nonobviousness, enablement, claim construction, and the doctrine of equivalents—that attempt to achieve a just balance between promoting innovation and preserving competition.⁹²

These factors contribute to an additional point of concern: The imposition of unreasonable royalty burdens upon high technology manufacturers.⁹³ Modern products and processes commonly embody numerous patented inventions, with some incorporating on the order of one thousand or more. Overly generous damages awards with respect to just a fraction of these patents may impose infringement liability upon manufacturers that dramatically exceeds the profits the infringer made.⁹⁴ Such an outcome fails to recognize that the patent system serves not just to promote innovation, but

⁹²*Id.* at 362-63; Bensen, *supra* note 2, at *18-*20. See also *Rite-Hite*, 56 F.3d at 1556 (Nies, J., dissenting) (“To constitute legal injury for which lost profits may be awarded, the infringer must interfere with the patentee's property right to an exclusive market in goods embodying the invention of the patent in suit. The patentee's property rights do not extend to its market in other goods unprotected by the litigated patent.”).

⁹³See Lemley & Shaprio, *supra* note 2, at 2 (identifying the problem of “royalty stacking”).

⁹⁴Indeed, the failure to apportion damages might also limit consumer access to technologies, and in particular discourage the development of multi-function products, as a manufacturer might introduce products with limited feature sets rather than synergistic combinations that might expose them to heightened liability for infringement. Suppose, for example, that one manufacturer produces a combination cellular telephone, camera, MP3 player, and PDA, while another sells merely a cellular telephone. If both manufacturers were found to infringe a telephony patent, the first firm would certainly be liable for damages that are significantly higher than those owed by the second firm absent the use of apportionment principles. As a result, a patent damages principles might discourage the availability of multi-functional products that bring synergies, such as convenience and a shared power supply, to consumers.

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also to encourage the dissemination of new products and processes to the marketplace.⁹⁵

Because overly generous damages awards may ultimately impede the process of technological innovation and dissemination that the patent system is meant to promote, current legislative reform proposals directed towards infringement remedies appear appropriately focused. Although both anecdotal and empirical evidence suggest that current patent damages rules may overcompensate patent proprietors in a systemic manner, apportionment concerns represent the possibility for the most egregious overcompensation. The remainder of this Article considers current legislative reform proposals and suggests additional reforms.

B. Current Proposals

In recognition of the concerns of high technology manufacturers, the 109th Congress featured two bills that in part concerned the apportionment of patent damages. In the House of Representatives, the proposed Patent Reform Act of 2005⁹⁶ would have accounted for apportionment as follows:

In determining a reasonable royalty in the case of a combination, the court shall consider, if relevant and among other factors, the portion of the realizable profit that should be credited to the inventive contribution as distinguished from other features of the combination, the manufacturing process, business risks, or significant features or improvements added by the infringer.⁹⁷

An alternative Patent Reform Act of 2006 was later introduced before the Senate.⁹⁸ The proposed Senate bill would have addressed apportionment as follows:

In determining a reasonable royalty consideration shall be given to—

⁹⁵See, e.g., Michael R. Taylor & Jerry Cayford, *American Patent Policy, Biotechnology, and African Agriculture: The Case for Policy Change*, 17 Harv. J. L. & Tech. 321, 340-41 (2004) (observing that one aspiration of the patent system is “facilitating the practical use of inventions, including their production, application, and commercialization.”); Suzanne T. Michel, *The Experimental Use Exception to Infringement Applied to Federally Funded Inventions*, 7 HIGH TECH. L.J. 369, 391 (1992) (identifying goals of the patent system as “promoting invention, . . . encouraging the development and commercialization of the invention and . . . encouraging public disclosure of the invention.”).

⁹⁶H.R. 109-2795.

⁹⁷*Id.* at § 12.

⁹⁸S. 109-3818.

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- (A) the economic value that should be attributed to the novel and non-obvious feature or features of the invention, as distinguished from the economic value attributable to other features, improvements added by the infringer, and the business risks the infringer undertook in commercialization;
- (B) the terms of non-exclusive marketplace licensing of the invention; and
- (C) other relevant factors in applicable law.⁹⁹

The substance of both of these formulations derive from factor 13 of the *Georgia-Pacific* analysis.¹⁰⁰ Although the differences between the two bills are subtle, they are significant. The House bill would have required consideration of apportionment “if relevant”—a statutory reform that may have simply confirmed existing law.¹⁰¹ By requiring that apportionment “shall” be considered in reasonable royalty cases, the Senate bill would have presented a more robust reform proposal.

In addition, the Senate bill appears to have addressed concerns over the precise wording of the House bill.¹⁰² With its use of the seemingly innocuous terms “combination” and “inventive contribution,” the House bill awakened memories of older case law from a period that was entirely less favorable to patents. Some decades past, the term “combination patent” was not only a pejorative, it also invoked more stringent validity criteria—ones that seemed inevitably to result in an invalid patent.¹⁰³ The distinct wording of the Senate bill undoubtedly eased some concerns among

⁹⁹*Id.* at § 5(a).

¹⁰⁰*See supra* note 23.

¹⁰¹*See Landers, supra* note 2, at 368.

¹⁰²*See Rooklidge, supra* note 43, at 20.

¹⁰³*See, e.g.,* Great A&P Tea Co. v. Supermarket Equip. Co., 340 U.S. 147, 152-53 (1950) (counseling special scrutiny of the validity of “combination patents”). The Federal Circuit would subsequently explain that:

The reference to a “combination patent” is equally without support in the statute. There is no warrant for judicial classification of patents, whether into “combination” patents and some other unnamed and undefined class or otherwise. Nor is there warrant for differing treatment or consideration of patents based on a judicially devised label. Reference to “combination” patents is, moreover, meaningless. Virtually *all* patents are “combination patents,” if by that label one intends to describe patents having claims to inventions formed of a combination of elements. It is difficult to visualize, at least in the mechanical-structural arts, a “non-combination” invention, i.e., an invention consisting of a *single* element. Such inventions, if they exist, are rare indeed.

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the patent bar about the unintended invocation of unwelcome patenting standards from an earlier era.

Congressional reform proposals present welcome developments in terms of both intellectual property theory and patent practice. Yet these reforms may not go far enough. The remainder of this Article suggests a modest number of additional patent damages reform proposals, introduced from both from a legislative and judicial perspective.

C. Additional Reforms

1. Apportion Lost Profits Damages

Current legislative proposals concerning apportionment are limited to damages assessed in the form of reasonable royalties. They do not address damages measured under the alternative methodology of lost profits. In so doing, these bills reflect prevailing patent law principles. The proposed statutory language is derived from *Georgia-Pacific*, a reasonable royalties case.¹⁰⁴ Further, current case law does not apportion damages assessed under the lost profits methodology.¹⁰⁵

The rationale for distinguishing between reasonable royalties and lost profits in the context of apportionment is not readily apparent, however. As this Article has previously demonstrated, the same policy concerns that animate the use of apportionment principles in the context of reasonable royalties apply to lost profits as well. In particular, failure to apportion lost profits damages may lead to a scope of protection that exceeds the patent's claims, overlapping intellectual property payment obligations on behalf of manufacturers and service providers, and strong incentives to litigate patent infringement lawsuits rather than settle them.¹⁰⁶

Given the common policy concerns within both damages methodologies, the asymmetry between reasonable royalties and lost profits damages appears puzzling. The inconsistent availability of apportionment methodologies appears to be the result of a complex history, one that requires some patience to review. An appropriate starting point is the Patent Act of 1870,¹⁰⁷ which allowed a patentee who could successfully plead equity jurisdiction to recover either actual damages it suffered

Stratoflex Inc. v. Aeroquip Corp., 713 F.2d 1530, 1540 (Fed. Cir. 1983).

¹⁰⁴See *supra* note 23.

¹⁰⁵See *supra* notes 84-89 and accompanying text.

¹⁰⁶See *supra* notes 90-93 and accompanying text.

¹⁰⁷16 Stat. 198 (1870).

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from infringement, or the profits made by the infringer.¹⁰⁸ The latter measure was based upon equitable principles of disgorgement, under which the adjudicated infringer was viewed as a trustee for the patent holder.¹⁰⁹ Patent proprietors who maintained their infringement actions at law were limited to the actual damages they suffered from the infringement.

Congress amended the patent damages statute in 1922.¹¹⁰ The 1922 Act was directed towards patent proprietors who could show that they had suffered damages and the infringer had profited, but could not quantify either amount with accuracy. The 1922 amendments therefore allowed the receipt of “opinion or expert testimony” in support of an award of “a reasonable sum as profits or general damages for the infringement” in equity.¹¹¹

Twenty-four years later, Congress would once more amend the patent damages statute.¹¹² Although the legislative history accompanying the 1946 Act is muddled, Congress appears to have expressed concerns that the 1922 Act required a resource-intensive and lengthy accounting of profits in all infringement cases. Congress therefore responded by enacting the damages provision that stands today:

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, together with interest and costs as fixed by the court.¹¹³

Congress plainly intended the 1946 Act to ensure that a reasonable royalty, rather than nominal damages, would serve as the minimum damages award that could be granted in patent cases.¹¹⁴

¹⁰⁸*Id.* at § ____.

¹⁰⁹See Allison Pruitt, *Keeping Patent Applicants Honest: A Proposal to Apply Disgorgement Remedies to Findings of Inequitable Conduct During Patent Prosecution*, 13 J. INTELL. PROP. L. 465, 476 (2006); Edward V. Filardi, *The Adequacy of Compensation for Patent Infringement—An Analysis of Monetary Relief Under 35 U.S.C. § 284*, 3 FORDHAM ENT. MEDIA & INTELL. PROP. L.F. 47 (1992).

¹¹⁰42 Stat. 392 (1922).

¹¹¹*Id.* at § ____.

¹¹²60 Stat. 778 (1946).

¹¹³This provision is currently codified at 35 U.S.C. § 284 (2006).

¹¹⁴See, e.g., *Crystal Semiconductor Corp. v. TriTech Microelecs. Int’l*, 246 F.3d 1336, 1353 (Fed. Cir. 2001) (“Thus, a reasonable royalty for each infringing device . . . is the minimum measure of

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Congress also sought to eliminate the requirement that courts conduct accounting procedures in all patent damages cases.¹¹⁵ Whether Congress sought to accomplish any other objectives from the legislative is not especially clear, however, in view of the rather vague statutory language and ambiguous legislative history.¹¹⁶

Supreme Court interpretation of the 1946 Act would not occur until its 1964 opinion in *Aro Manufacturing Co. v. Convertible Top Replacement Co.*¹¹⁷ This opinion, which marked the Court's second encounter with this infringement litigation, is significant to patent damages law and therefore worthy of brief review. The asserted patent claimed an automobile convertible top. Aro, the accused infringer, sold fabric useful only as a replacement for the convertible tops. In *Aro I*, the Court had held that fabric replacements used in a number of licensed convertible tops constituted a permissible repair rather than an infringing reconstruction.¹¹⁸ That holding did not close the case, however, because certain other accused infringements had not been licensed in the first instance. Therefore, in *Aro II*, the Court held that replacement of the cloth tops could constitute contributory infringement as defined in § 271(c) of the Patent Act.¹¹⁹

Due to its holding with respect to patent infringement, the Court remanded the matter for a determination of the appropriate remedies—a step that might have marked the end of its opinion. However, four Supreme Court justices went further, opting to opine on the damages that should be assessed in the case.¹²⁰ The nub of the remedial issue was that Aro had manufactured the replacement fabrics for Ford automobiles—but Ford had already settled an earlier infringement suit with the same patent owner. Concerned that the patentee may obtain recovery for the same infringement from both Ford and Aro, four Justices were moved to opine further about the 1946 Act. With respect to reforms brought about by that legislation, the Court explained that the “purpose of

damages”); *King Instruments Corp. v. Perego*, 65 F.3d 941,951 n.2 (Fed. Cir. 1995) (“Congress set the reasonable royalty as the floor, not the ceiling of damages for infringement.”); *Deere & Co. v. International Harvester Co.*, 710 F.2d 1551, 1558 n.9 (Fed. Cir. 1983) (“[U]nder the statute, a ‘reasonable royalty’ is the minimum permissible measure of damages.”).

¹¹⁵Bensen, *supra* note 2, at *53.

¹¹⁶*Id.*

¹¹⁷377 U.S. 476 (1964).

¹¹⁸365 U.S. 890 (1961).

¹¹⁹377 U.S. at 485-93.

¹²⁰*Id.* at 502-13 (portion of the opinion joined by Justices Brennan, Stewart, White, and Goldberg).

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the change was precisely to eliminate the recovery of profits as such and allow recovery of damages only.”¹²¹ The Court quoted from a House of Representatives Report accompanying the 1946 Act as follows:

The object of the bill is to make the basis of recovery in patent-infringement suits general damages, that is, any damages the complainant can prove, not less than a reasonable royalty, together with interest from the time infringement occurred, rather than profits and damages.¹²²

According to the Court, “[t]here can be no doubt that the amendment succeeded in effectuating this purpose; it is clear that under the present statute only damages are recoverable.”¹²³ Bizarrely, the Court failed to consult a passage from the House Report positioned just two paragraphs below the quoted text:

Although the bill would not preclude the recovery of profits as an element of general damages, yet by making it unnecessary to have proceedings before masters and empowering equity courts to assess general damages irrespective of profits, the measure represents proposed legislation which in the judgment of this committee is long overdue.¹²⁴

Not only does this single sentence deflate the distinction the Court drew between profits and damages in patent cases, it defeats the notion that the 1946 Act disallowed profits in patent cases. The four-Justice plurality nonetheless concluded that the patent owner was likely not entitled to reasonable royalties because Aro was unlikely to have agreed to paid the patent owner for the right to distribute the replacement fabric, even in the absence of the 1952-54 infringement.¹²⁵

Despite its unstable foundation, *Aro II* has been cited by the lower courts for the proposition

¹²¹*Id.* at 505.

¹²²*Id.* at 505-06 (quoting H.R. Rep. No. 1587, 79th Cong., 2d Sess. (1946), to accompany H.R. 5311, at 1-2; S. Rep. No. 1503, 79th Cong., 2d Sess. (1946), to accompany H.R. 5311, at 2 U.S. Code Cong. Serv. 1946, p. 1387).

¹²³*Id.* at 506.

¹²⁴H.R. Rep. No. 1587, 79th Cong., 2d Sess. (1946), to accompany H.R. 5311, at 2.

¹²⁵377 U.S. at 1540.

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that the infringer's profits are not available as damages in patent infringement cases.¹²⁶ Rather, patent damages are limited to those assessed at law, based upon the harms suffered by the patent proprietor.¹²⁷ And although not addressed in *Aro II*, the rule of apportionment was squarely impacted by the Court's holding that legal damages are the only monetary relief available in patent cases. Subsequent courts interpreted the abrupt switch from equitable to legal damages to mean that "but for" causation served as the appropriate trigger for lost profits as a measure of damages.¹²⁸ Under this logic, once the patentee demonstrates that it lost a sale due to the infringement, then it is entitled to the entire amount of the profit associated with that sale—whether or not the patent concerns an entire product or process, or merely one component or step of that greater whole.¹²⁹ This Article has previously explained that this faulty reasoning results in the systematic overcompensation of patent proprietors in cases where more than one patent pertains to a particular accused product or process.¹³⁰ As a review of Supreme Court precedent reveals, courts are readily capable of apportioning damages that are measured based upon the lost profits of the patent proprietor.¹³¹

The contorted saga of lost profits damages in patent cases demonstrates once more that "a page of history is worth a volume of logic."¹³² The absence of apportionment in lost profits damages analyses appears to be more the result of an historical accident than the affirmative decision of Congress. In view of the contemporary legal and technological landscape, reform proposals would do well to recognize that apportionment should apply to reasonable royalties and lost profits alike.

¹²⁶*See, e.g.,* Nike, Inc. v. Wal-Mart Stores, Inc., 138 F.3d 1437, 1442 (Fed. Cir. 1998); Devex Corp. v. General Motors Corp., 667 F.2d 347 (3d Cir. 1981); Photo Elecs. Corp. v. England, 581 F.2d 772, 784 (9th Cir. 1978); Zegers v. Zegers, Inc., 458 F.2d 726, 727-28 (7th Cir. 1972).

¹²⁷*See, e.g.,* King Instruments, Inc. v. Perego, 65 F.3d 941, 948-49 (Fed. Cir. 1995); Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc. 976 F.2d 1559, 1577 (Fed. Cir. 1992); State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d 1573, 1577 (Fed. Cir. 1989).

¹²⁸*See, e.g.,* Grain Processing Corp. v. American Maize-Products Co., 185 F.3d 1341, 1349 (Fed. Cir. 1999); Uniroyal, Inc. v. Rudkin-Wiley Corp., 939 F.2d 1540, 1544 (Fed. Cir. 1991); Kauffman Co. v. Lantech, Inc., 926 F.2d 1136, 1140-41 (Fed. Cir. 1991).

¹²⁹*See supra* notes 89-90 and accompanying text.

¹³⁰*See supra* notes 93-94 and accompanying text.

¹³¹*See* Yale Lock Mfg. Co. v. Sargent, 117 U.S. 536, 553 (1886) (affirming special master's award of damages based upon the patent proprietor's lost profits, where the special master accounted for the defendant's use of other technologies and also "made proper allowances for all other causes which could have affected the plaintiff's prices . . .").

¹³²*New York Trust Co. v. Eisner*, 256 U.S. 345, 349 (1921).

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This step would be straightforward as a matter of legislative drafting: Current legislative proposals could be amended to refer to “damages” rather than exclusively to “reasonable royalties.” Alternatively, the bill could refer to both reasonable royalties and lost profits as suitable for apportionment in appropriate cases.

2. Account for Other Patents

Current codification efforts should also recognize Federal Circuit’s holding in *Integra v. Merck* that royalty obligations should account for other patents that may bear upon the adjudicated infringement.¹³³ Under this proposal, courts would be mindful that a particular product or process may be the subject of numerous patents—and corresponding royalty obligations—before assessing damages for infringement of any one of them. Incorporation of this change is straightforward as a matter of legislative drafting: The proposed reforms need merely include the phrase “the extent the adjudicated infringement is subject to other patents,” or a similar phrasing, within the list of factors for consideration.

Implementation of the ruling in *Integra v. Merck* presents at least one practical difficulty. Adjudicated infringers may understandably remain reluctant to identify other patents that may be relevant to a product or process they have commercialized. In so doing, they may consider themselves to be admitting to additional infringements. Still, under the patent-intensive circumstances of contemporary high-technology industry, it is not unlikely that the adjudicated infringer may be the licensee of additional patents pertaining to the infringing product or process. Other patents may be owned by the adjudicated infringer itself, or be subject to a non-royalty generating cross license.

Industrial standards provide another mechanism for assessing the extent of royalty obligations owed to patents other than the one in suit.¹³⁴ Standard bodies commonly invite participants in the standard-setting process to identify patents that pertain to a proposed standard. Although this effort by no means identifies all relevant patents in every circumstance, it may prove useful to courts that should have a sense of the extent of intellectual property that pertains to a particular product or process. Experience also demonstrates that patent proprietors have not uncommonly announced that

¹³³331 F.3d at 871-72. *See supra* notes 80-82 and accompanying text.

¹³⁴Discussion of the relationship between patents and industrial standards can be found at Robert A. Skitol, *Concerned Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727 (2005); Kraig A. Jakobsen, *Revisiting Standard-Setting Organizations’ Patent Policies*, 3 NW. J. TECH. & INTELL. PROP. 43 (2004); James C. DeVellis, *Patenting Industry Standards: Balancing the Rights of Patent Holders with the Need for Industry-Wide Standards*, 31 AIPLA Q.J. 301 (2003).

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their patents cover all product or processes that conform to a particular standard.¹³⁵ Judicial cognizance of this possibility, along with the resources necessary either to procure a license under these patents or prosecute a case of invalidity or noninfringement, would provide further evidence of the value of the patent-in-suit to an individual product or process.

3. Promote the Use of Jepson Claim Format

Another possible reform, directed more towards the courts rather than Congress, is to employ the well-established Jepson claim format when making damages determinations. A Jepson claim defines an invention in two parts: a preamble, which recites the admitted prior art, followed by an “improvement” clause reciting what the applicant regards as his invention.¹³⁶ The dominant claim format in many patent-granting states overseas, Jepson format is disfavored in the United States.¹³⁷ The hypothetical construct of a Jepson claim could provide a considerable advantage for courts making damages determinations, as this format discretely identifies the inventor’s contribution within the body of the claim. This identification may allow more accurate identification of cases where the Entire Market Value Rule is appropriate, and other cases where apportionment is the correct judicial response.

Suppose, for example, that the patent claims a stereo speaker system. One of the elements of the claim consists of a new and nonobvious woofer that better projects low frequency sounds. The remaining elements within the claimed combination are well-known features of stereo speaker systems, such as an enclosure and binding posts. For purposes of the damages determination, this “environmental” claim could be hypothetically redrafted in Jepson format with the “improvement” clause consisting of the woofer. Performing this redrafting exercise following a finding of infringement would assist a court in focusing upon the woofer as the inventor’s contribution under

¹³⁵See, e.g., Eric Chabrow, *Patent Threatens Rich-Media Apps with License Fees*, INFORMATION WEEK 34 (Feb. 27, 2006); Matt Slagle, *Settlement Ends JPEG Lawsuits*, HOUSTON CHRONICLE 4 (Nov. 5, 2006).

¹³⁶The following claim, at issue in *Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 312 (Fed. Cir. 1985), was drafted in Jepson format:

In an instrument marker pen body including an ink reservoir and means for receiving a writing tip, the improvement comprising a pen arm holding means consisting of an integrally molded hinged member adapted to fold against a surface of the pen body and to be locked against said surface by engageable locking means and to receive and secure in place against said surface a pen arm when said hinged member is in its folded and locked position.

¹³⁷See John R. Thomas, *The Responsibility of the Rulemaker: Comparative Approaches to Patent Administration Reform*, 17 BERKELEY TECH. L.J. 727, 755-56 (2002) (discussing Jepson claims).

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the facts of the case. If the woofer served as the basis for customer demand for the entire stereo speaker system, then the Entire Market Value Rule should apply. Otherwise the court should apportion damages based upon the value of the woofer itself, without awarding damages based upon the entire value of the stereo system in which the woofer has been incorporated.

Some claims are not easily converted to Jepson format, a circumstance that suggests that apportionment may be inappropriate. Suppose, for example, that the claimed invention consists of the novel and nonobvious combination of two medications. The combination therapy promotes patient compliance, reduces side effects, and allows smaller doses of each medication to be administered. Under this hypothetical, the inventor's contribution consists of the combination itself, rather than a component of that combination. Just as use of Jepson claim format would be unsuitable for this invention, so too would the Entire Market Value Rule seem the most appropriate damages rule to apply for infringement of this claimed invention.

The use of Jepson claims may seem incongruous in a patent system where "the name of the game is the claim."¹³⁸ Still, the very existence of the Entire Market Value Rule indicates that courts will, in appropriate cases, disregard claim scope in making damages determinations. Federal Circuit case law also provides for the use of "hypothetical claims" in order to measure the impact of the prior art upon the scope of claim coverage.¹³⁹ Refashioning claims in Jepson format in order to measure the inventor's contribution more precisely may assist more accurate patent damages determinations.

IV. CONCLUSION

The rule of apportionment stands among the more venerable damages doctrines in all of patent jurisprudence.¹⁴⁰ In an era where apportionment concerns are more cogent than ever, courts have treated this doctrine with surprising neglect. The resulting trend towards overly generous damages awards may allow patentees to obtain proprietary interests in products they have not invented, encourage litigation, promote patent speculation, place unreasonable royalty burdens upon

¹³⁸See Giles Sutherland Rich, *Extent of Protection and Interpretation of Claims -- American Perspectives*, 21 INT'L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990).

¹³⁹See *Wilson Sporting Goods Co. v. David Geoffrey & Assocs.*, 904 F.2d 677, 684-85 (Fed. Cir. 1990); see also *Steamfeeder, LLC v. Sure-Feed Sys., Inc.*, 175 F.3d 974, 984 (Fed. Cir. 1999); *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1584 (Fed. Cir. 1995).

¹⁴⁰See, e.g., *Sheldon v. Metro-Goldwyn Pictures Corp.*, 309 U.S. 390, 396 (1940) (finding "many cases" addressing the issue of apportionment); 3 WILLIAM C. ROBINSON, *THE LAW OF PATENTS FOR USEFUL INVENTIONS* § 1062, at 344 n.7 (1890) (describing apportionment as an "indisputable" damages principle).

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producers of high technology products, and ultimately impede the process of technological innovation and dissemination that the patent system is meant to foster. By better aligning the patent system's aspirations with its practical workings, reinvigoration of apportionment principles may stand among the more significant contributions by current patent reformers.