

ARTICLES

CONTEMPORARY ISSUES IN PATENT DAMAGES

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INTRODUCTION

The U.S. Court of Appeals for the Federal Circuit turned ten years old in October 1992.¹ The decade saw the court refine the law of damages in patent cases to a degree never before known in patent jurisprudence.² The court greatly clarified the principles involved in such areas as entitlement to lost profits,³ handling of "established royalties,"⁴ methodologies for setting reasonable royalties under the patent damages statute,⁵ and the ascertainment and award of prejudgment interest.⁶ Within each of these categories, many problems and questions of law arose and were resolved. For example, the general topic of lost profits involved questions of recovery for forced erosion of a patentee's prices as a result of infringement,⁷ questions of entitlement to lost profits on related lost sales of unpat-

1. See Emmette F. Hale III, *The "Arising Under" Jurisdiction of the Federal Circuit: An Opportunity for Uniformity in Patent Law*, 14 FLA. ST. U. L. REV. 229, 229 (1986) (noting that Federal Circuit was established in October 1982 with exclusive appellate jurisdiction over patent cases, partly in attempt to bring uniformity to patent law).

2. See generally 5 DONALD S. CHISUM, PATENTS §§ 20.01-03 (1992) (providing historical development of patent infringement damages and modern perspectives on monetary damages); 3 PETER D. ROSENBERG, PATENT LAW FUNDAMENTALS § 17.08 (2d ed. 1992) (presenting overview of remedies for patent infringement, including damages and injunction); 3 ROBERT A. WHITE ET AL., PATENT LITIGATION: PROCEDURE & TACTICS §§ 9.01-04 (1991) (presenting synopsis of patent damages law); John M. Skenyon & Frank P. Porcelli, *Patent Damages*, 70 J. PAT. [& TRADEMARK] OFF. SOC'Y 762, 763-85 (1988) (presenting overview of trends in patent damages law with focus on lost profits and reasonable royalty).

For pre-Federal Circuit works on the topic of patent damages, see generally 8 ANTHONY W. DELLER, DELLER'S WALKER ON PATENTS §§ 739-806 (2d ed. 1973 & Supp. 1987) (focusing on early patent damages law); 8 ERNEST B. LIPSCOMB III, LIPSCOMB'S WALKER ON PATENTS §§ 27:1-:50 (3d ed. 1989 & Supp. 1991) (presenting broad overview of patent damages with focus on pre-1952 law); 3 WILLIAM C. ROBINSON, THE LAW OF PATENTS FOR USEFUL INVENTIONS §§ 1137-1153 (1890) (presenting early law on patent damages); Richard L. Stroup, *Patentee's Monetary Recovery from an Infringer*, 59 J. PAT. [& TRADEMARK] OFF. SOC'Y 362, 373-404 (1977) (providing overview of patent damages law shortly before advent of Federal Circuit); Note, *Recovery in Patent Infringement Suits*, 60 COLUM. L. REV. 840, 840-52 (1960) (summarizing briefly scope and basis for recovery of damages in patent infringement suits).

3. See *infra* notes 45-125 and accompanying text (explaining Federal Circuit's changes in law of proving lost profits damages).

4. See *infra* notes 126-40 and accompanying text (discussing transformation in proof of "established royalty" under Federal Circuit).

5. See *infra* notes 141-208 and accompanying text (relating Federal Circuit's changes in damages recovery based on reasonable royalty).

6. See *infra* notes 224-49 and accompanying text (illustrating solidification of prejudgment interest awards under Federal Circuit jurisprudence).

7. See *infra* notes 108-17 and accompanying text (examining courts' provision of damages to patentees where infringers' competition forces price cuts in patentees' patented product).

ented goods,⁸ and the seemingly unsolvable damages questions posed by the presence of competitive noninfringing products in the marketplace.⁹

The newly understood principles spawned almost as many new questions, so that when the first decade of life under the Federal Circuit drew to a close last fall, practitioners and judges still strongly debated many controversial points on patent damages.¹⁰ These debates are not fueled entirely by scholarly curiosity. Courts are awarding increasingly higher damages in patent cases, as illustrated by the Polaroid-Kodak litigation on instant photography that was settled in July 1991 for \$925 million only a few months after the District of Massachusetts had set Polaroid's recovery at \$873 million.¹¹ The *Hughes Tool Co. v. Smith International Inc.*¹² and *Hughes Tool Co. v. Dresser Industries, Inc.*¹³ litigations on oilfield drillbits resulted in judgments exceeding \$100 million in the late 1980s.¹⁴

8. See *infra* notes 121-25 and accompanying text (discussing cases that award damages on lost profits for unpatented items where related to patented product through collateral sale).

9. See *infra* notes 51-97 and accompanying text (discussing transformation in Federal Circuit's requirement of absence of acceptable noninfringing substitutes).

10. See *infra* note 97 and accompanying text (illustrating continuing disagreement about whether acceptable substitutes must have been commercially sold); *infra* note 125 and accompanying text (relating ambiguity in availability of damages for collateral sales); *infra* notes 207-08 and accompanying text (explaining lack of methodology for assessing reasonable royalty).

11. Kurt Eichenwald, *Kodak's Payment to Polaroid Reduced*, N.Y. TIMES, Jan. 12, 1991, at 33. The Polaroid case was first filed in 1976. Validity and infringement of several Polaroid patents were determined in 1985, and an injunction against further infringement issued. Polaroid Corp. v. Eastman Kodak Co., 641 F. Supp. 828, 878, 228 U.S.P.Q. (BNA) 305, 345 (D. Mass. 1985), stay denied, 833 F.2d 930, 5 U.S.P.Q.2d (BNA) 1080 (Fed. Cir.), *aff'd*, 789 F.2d 1556, 229 U.S.P.Q. (BNA) 561 (Fed. Cir.), *cert. denied*, 479 U.S. 850 (1986). On appeal, Kodak sought a stay of the injunction, but the stay was refused by the court of appeals. Polaroid Corp. v. Eastman Kodak Co., 833 F.2d 930, 931, 5 U.S.P.Q.2d (BNA) 1080, 1080 (Fed. Cir. 1986). The district court's decision was then affirmed on the merits of validity and infringement. Polaroid Corp. v. Eastman Kodak Co., 789 F.2d 1556, 1574, 229 U.S.P.Q. (BNA) 561, 574-75 (Fed. Cir.), *cert. denied*, 479 U.S. 850 (1986).

The case then returned to the District of Massachusetts for a trial on damages. This led to the initial award to Polaroid of \$454,205,801 in lost profits and reasonable royalty damages, and \$455,251,766 in prejudgment interest. Polaroid Corp. v. Eastman Kodak Co., 16 U.S.P.Q.2d (BNA) 1481, 1541 (D. Mass. 1990). Several months later, the district judge modified his decision to correct certain errors in calculation and reduced the total award by \$36 million. Eichenwald, *supra*, at 33. This modification resulted in a new damages award of some \$437 million and a new interest award of about \$436 million. *Id.* The case was settled in July 1991 for \$925 million, ending a 15-year battle over patent rights to instant cameras and film. *Kodak Settles with Polaroid*, N.Y. TIMES, July 16, 1991, at D8.

12. 229 U.S.P.Q. (BNA) 81 (C.D. Cal. 1986), *vacated*, 839 F.2d 663, 5 U.S.P.Q.2d (BNA) 1686 (Fed. Cir. 1988).

13. 816 F.2d 1549, 2 U.S.P.Q.2d (BNA) 1396 (Fed. Cir.), *cert. denied*, 484 U.S. 914 (1987).

14. *Hughes Tool Co. v. Smith International Inc.* and *Hughes Tool Co. v. Dresser Industries, Inc.* were parallel cases involving alleged infringement of the same Hughes oil drillbit patent. See *Hughes Tool Co. v. Dresser Indus., Inc.*, 816 F.2d 1549, 1552-53, 2 U.S.P.Q.2d (BNA) 1396, 1399 (Fed. Cir.) (noting that Hughes sued Smith and Dresser for infringement of same patents), *cert. denied*, 484 U.S. 914 (1987). On the strength of the initial decision of patent invalid-

And the cookie litigation involving Procter & Gamble, Nabisco, Keebler, and Frito-Lay settled in 1989 shortly before trial for \$125 million.¹⁵

The impact of large damage recoveries in patent cases has not been lost on businesspeople around the world. In September 1992, *The New York Times* reported that Japanese companies, relatively inactive in the past as patent plaintiffs in the United States, are now taking note of large infringement verdicts and settlements in the United States and are planning to seek similar remuneration on their U.S. patents.¹⁶ This topic plainly generates interest at the highest corporate management levels here and abroad, both from the points of view of enhancement of profits for plaintiff companies and of risk management for actual and would-be defendants.

ity by the Central District of California in the case against Smith, the Northern District of Texas summarily dismissed the case against Dresser. *Id.*

After the reversal of the invalidity holding by the Ninth Circuit, the case against Dresser was reinstated and went to trial. *Hughes Tool Co.*, 816 F.2d at 1550, 2 U.S.P.Q.2d (BNA) at 1397. This resulted in a total award of \$132,096,430.92, which included \$29,439,158.91 of prejudgment interest. *Id.* at 1555, 2 U.S.P.Q.2d (BNA) at 1401. Certain relatively minor aspects of the trial court's decision were held "arbitrary" by the Federal Circuit and were set aside. *Id.* at 1558, 2 U.S.P.Q.2d (BNA) at 1404. The case was remanded for redetermination of damages based on a reasonable royalty computed in accordance with the court's opinion, *id.*, and thereafter was settled. See James R. Norman, *Hot Potato*, FORBES, July 9, 1990, at 38 (noting that Dresser Industries reportedly paid Hughes \$23 million in cash and stock of undisclosed value).

Hughes was awarded \$205 million in damages in its suit against Smith by the U.S. District Court for the Central District of California in 1986. *Smith Int'l, Inc. v. Hughes Tool Co.*, 229 U.S.P.Q. (BNA) 81, 103 (C.D. Cal. 1986), *vacated*, 839 F.2d 663, 5 U.S.P.Q.2d (BNA) 1686 (Fed. Cir. 1988). This award was vacated after Smith's reorganization under bankruptcy laws was approved, and the parties settled. *Smith Int'l, Inc. v. Hughes Tool Co.*, 839 F.2d 663, 664, 5 U.S.P.Q.2d (BNA) 1686, 1687 (Fed. Cir. 1988). Smith reportedly settled with Hughes for \$95 million. John Holusha, *Kodak Told It Must Pay \$909 Million*, N.Y. TIMES, Oct. 13, 1990, at 33.

15. Holusha, *supra* note 14, at 33. The settlement terms are also reflected in the final judgment, entered by consent, in the case. See *Procter & Gamble Co. v. Nabisco Brands, Inc.*, Nos. 84-333-LON, 84-334-LON, 84-335-LON, 1989 U.S. Dist. LEXIS 11113, at *5 (D. Del. Sept. 12, 1989). The total payment was divided among the defendants with Nabisco paying \$52,936,507.90, Keebler paying \$52,936,507.95, and Frito-Lay paying \$19,126,984.15. *Id.*

This case, known as "The Great Cookie War," involved Procter & Gamble's patent for a dual-dough, dual-textured cookie recipe. Elsa C. Arnett, *However This Cookie Crumbles, Recipe's Now All Duncan Hines; 3 Competitors Agree To Pay \$125 Million Settlement*, WASH. POST, Sept. 13, 1989, at C1. Nabisco, Keebler, and Frito-Lay were defendants. *Id.* The suit, originally filed in June 1984, went through an involved history before being settled in 1989. *Id.*; see *Procter & Gamble Co. v. Nabisco Brands, Inc.*, 711 F. Supp. 759, 773, 776, 777, 11 U.S.P.Q.2d (BNA) 1243, 1251, 1256 (D. Del. 1989) (granting summary judgment on issue of invalidity of one product claim of patent, denying summary judgment on issue of invalidity of certain method claims of patent, and denying summary judgment on issue of inequitable conduct of Procter & Gamble before Patent and Trademark Office).

16. Andrew Pollack, *Japanese Fight Back as U.S. Companies Press Patent Claims*, N.Y. TIMES, Sept. 5, 1992, at 1, 34 (discussing ways in which Japanese companies are recognizing significance of and responding to large patent verdicts). Pollack suggests that the large royalties being recovered by American companies in the voluntary licensing of their patents, while impressive in terms of near-term dollars, may portend a slackening in product competitiveness on the part of the licensors. *Id.* at 34.

This Article will review the major developments of the past decade in patent damages law and will comment on some of the more important unresolved issues.¹⁷ Part I addresses the controlling statutory provision, 35 U.S.C. § 284. Part II discusses the changes brought about in the last decade regarding recovery of lost profits in patent-infringement cases, including recovery of (a) losses due to price erosion forced by the infringement and (b) losses due to inability of the patentee to consummate normal collateral sales of unpatented goods. Part III treats recovery of an established royalty. Part IV develops the modern law on "reasonable royalty" and points out the shortcomings resulting from the presence of the many artificial premises engrafted by case law onto the concept of hypothetical negotiation. Part V deals with the problem of deduction for income taxes that "would have" accrued on each year's damages had they been collected right away. Finally, Part VI describes the law regarding awards of prejudgment interest.

I. THE CONTROLLING STATUTE

Like most milestones in world history, the changes in patent damages law in the last decade have not involved any grand new ideas, but rather derive from an increased understanding of concepts inherent in a fairly old statute.¹⁸ The damages section of the patent statute, 35 U.S.C. § 284, has not been amended since its passage in 1952.¹⁹ The section still provides for an award adequate to compensate the patent owner for an infringement of his or her patent, but in no event will the award be less than a reasonable royalty.²⁰

Courts have long recognized that this statutory provision precludes recovery of an infringer's profits as such. In 1964, the

17. The following topics, while important components of possible monetary recovery in patent actions, are beyond the coverage of this Article: enhanced damages (*see* 35 U.S.C. § 284 (1988)); costs (*see* 35 U.S.C. § 284 (1988)); and attorney's fees (*see* 35 U.S.C. § 285 (1988)).

18. *See, e.g., infra* notes 79-88 and accompanying text (explaining shift of burden from plaintiff to defendant in proving absence of noninfringing substitutes); *infra* notes 108-17 and accompanying text (noting that last decade has established that damages are recoverable for forced reduction in price); *infra* notes 151-74 and accompanying text (discussing new perspective on reasonable royalty as means of doing justice).

19. 35 U.S.C. § 284 (1988) provides in pertinent part:

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.

When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.

Id.

20. *Id.*

Supreme Court, in *Aro Manufacturing Co. v. Convertible Top Replacement Co.*,²¹ stated, "[T]he present statutory rule is that only 'damages' may be recovered. These have been defined by this Court as 'compensation for the pecuniary loss [the patent holder] has suffered from the infringement, without regard to the question whether the defendant has gained or lost by his [or her] unlawful acts.'"²² *Aro* is important not only for its negation of recoverability of the defendant's profits, but also for its enunciation of the statutory focus on compensation for harm done to the patentee.²³ Today, this focus is as valid in the realm of reasonable royalty awards as it is in the recovery of lost profits, as will be developed below.

Section 284 sets a reasonable royalty as the floor for recovery in all cases.²⁴ No patentee can be relegated to only a reasonable royalty award except in cases where trial evidence admits of no higher mode of compensation.²⁵ The damages provided for by the statute are "adequate to compensate" a patentee for an infringement but are not limited by any structured formula.²⁶ Given the nearly infinite variety of commercial and industrial circumstances under which patent infringement occurs, it should not be surprising that courts refuse to constrain patentees to narrow rules of methodology in figuring damages for infringement. Rather, reasonableness of the compensation for the injury done to the patentee is the overall crite-

21. 377 U.S. 476, 141 U.S.P.Q. (BNA) 681 (1964).

22. *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 507, 141 U.S.P.Q. (BNA) 681, 694 (1964) (quoting *Coupe v. Royer*, 155 U.S. 565, 582 (1895)).

23. Cases since *Aro* confirm that the focus of a patent damages award is on a patentee's losses and the harm caused by infringement and not an infringer's profits. Thus, an infringer is liable for a patentee's loss of profits due to price cuts forced by the infringement. See *infra* notes 108-17 and accompanying text (discussing award of lost profits due to patentees' price cuts forced by infringers). Infringers could also be liable for patentees' lost profits for unpatented goods that would have been sold with the patented goods. See *infra* notes 121-25 and accompanying text (discussing award of lost profits for patentees' failure to sell related unpatented goods). Likewise, a reasonable royalty award is generally higher than what would have been theoretically negotiated so that a patentee is compensated for the injustice caused by infringement. See *infra* notes 151-56 and accompanying text (demonstrating that reasonable royalty award is generally higher than amount of damages that actually would have been negotiated).

24. 35 U.S.C. § 284 (1988); see also *Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc.*, 750 F.2d 1552, 1568, 224 U.S.P.Q. (BNA) 259, 270 (Fed. Cir. 1984) (finding that although reasonable royalty is not necessarily measure of damages, such level of recovery serves nonetheless as floor beneath which damages may not fall); *Deere & Co. v. International Harvester Co.*, 710 F.2d 1551, 1558 n.9, 218 U.S.P.Q. (BNA) 481, 487 n.9 (Fed. Cir. 1983) (stating that 35 U.S.C. § 284 prescribes reasonable royalty as minimum permissible measure of damages); *Bandag, Inc. v. Gerrard Tire Co.*, 704 F.2d 1578, 1583, 217 U.S.P.Q. (BNA) 977, 981 (Fed. Cir. 1983) (holding that reasonable royalty is "floor below which damages shall not fall").

25. See, e.g., *infra* notes 146-50 and accompanying text (illustrating that under some circumstances, reasonable royalty provides higher level of damages than lost profits).

26. Compare *infra* notes 31-125 and accompanying text (explaining patent damages award based on lost profits) with *infra* notes 128-208 and accompanying text (explaining patent damages award based on established or reasonable royalty).

tion, and within this concept trial courts have been accorded wide latitude to choose a compensation mode that appears to them to fit the evidence presented.²⁷ The analysis used by courts in patent cases has thus moved closer to that used by courts in other types of tort cases.²⁸ The concept is to compensate patentees fully for their loss of exclusivity by whatever rationale seems best to fit the evidence on that point at trial. Patent damage cases fall into two broad categories, which may be labeled lost profits recovery²⁹ and reasonable royalty recovery.³⁰

II. LOST PROFITS RECOVERY

A patentee can lose profits due to infringement in any or all of a host of different ways.³¹ Assuming the patented subject matter is a product, these ways include:

- patentee's potential sales of the invention lost due to the infringement;³²

27. For example, in *Sun Studs, Inc. v. ATA Equip. Leasing, Inc.*, 872 F.2d 978, 994, 10 U.S.P.Q.2d (BNA) 1338, 1352 (Fed. Cir.), *reh'g granted*, 882 F.2d 1583 (Fed. Cir.) (in banc), *reh'g denied and opinion reinstated*, 892 F.2d 73 (Fed. Cir. 1989) (in banc), the Federal Circuit noted, "Jury damage awards, unless clearly unreasonable or based on error in law, are not readily modified or retried." *Id.* A similar deference applies where the district court, sitting without a jury, finds the facts. See *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1482, 16 U.S.P.Q.2d (BNA) 1093, 1100 (Fed. Cir. 1990) (noting that "the methodology of assessing and computing damages is committed to the sound discretion of the district courts"); see also *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1576-77, 12 U.S.P.Q.2d (BNA) 1026, 1028 (Fed. Cir. 1989) (stating that computation of damages is committed to sound discretion of district court), *cert. denied*, 493 U.S. 1022 (1990); *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 898-99, 229 U.S.P.Q. (BNA) 525, 526-27 (Fed. Cir.) (concluding that district court has discretion to determine proper approach to calculation of damages), *cert. denied*, 479 U.S. 852 (1986).

28. See 8 LIPSCOMB, *supra* note 2, § 27:8, at 26 (noting that infringer is tortfeasor and that patentee is entitled, like any other owner, to be compensated for property tortiously taken).

29. See *infra* notes 31-125 and accompanying text (discussing criteria for patent infringement award based on lost profits).

30. See *infra* notes 128-208 and accompanying text (discussing criteria for patent infringement award based on established or reasonable royalty).

31. The general law on recovery of lost profits is not limited to recovery for sales diverted by the defendant-infringer. In *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 141 U.S.P.Q. (BNA) 681 (1964), the Supreme Court stated the patent damages rule broadly: "The question to be asked in determining damages is 'how much had the Patent Holder . . . suffered by the infringement. And that question [is] primarily: had the Infringer not infringed, what would [the] Patent Holder . . . have made?'" *Id.* at 507, 141 U.S.P.Q. (BNA) at 694 (quoting *Livesay Window Co. v. Livesay Indus., Inc.*, 251 F.2d 469, 471, 116 U.S.P.Q. (BNA) 167, 168 (5th Cir. 1958)).

32. See, e.g., *Atlantic Thermoplastics Co. v. Faytex Corp.*, 970 F.2d 834, 847, 23 U.S.P.Q.2d (BNA) 1481, 1491-92 (Fed. Cir. 1992) (finding that test of entitlement to lost profits is whether patentee would have made defendant's sales of infringing product); *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545-46, 19 U.S.P.Q.2d (BNA) 1432, 1437 (Fed. Cir. 1991) (holding that where no acceptable noninfringing substitutes were in market, plaintiff should recover lost profit on all of defendant's infringing sales); *Marsh-McBirney, Inc. v. Montedoro-Whitney Corp.*, 882 F.2d 498, 505, 11 U.S.P.Q.2d (BNA) 1794, 1798 (Fed. Cir. 1989), *cert. granted and vacated on procedural grounds*, 111 S. Ct. 775 (1991) (ruling that

- patentee's sales of the invention made at prices eroded because of the infringement;³³
- patentee's sales of the invention not made at new, higher prices that the market would have sustained absent the infringement;³⁴
- lost tag-along sales of unpatented products, which the evidence could show would have flowed with the patentee's patented sales;³⁵
- patentee company's corporate growth restricted as a result of the infringement and the ensuing litigation.³⁶

In a given case, any or all of the above factors may stand proved by the evidence at the end of trial. If so, each factor is established by law to be a ground for recovery. This development came about by way of a change in the burden of proof required to recover lost profits³⁷ and a relaxation of the specific elements that need to be proven.³⁸

A. *Change in Required Quantum of Proof for Lost Profits Recovery*

The quantum of proof required to show a right to recover lost profits has undergone a distinct metamorphosis in the last decade.

patentee is entitled to recover lost profits if reasonable probability is shown that, but for infringement, patentee would have made infringer's sales) (citing *Del Mar Avionics, Inc. v. Quinton Instrument Co.*, 836 F.2d 1320, 1326, 5 U.S.P.Q.2d (BNA) 1255, 1260 (Fed. Cir. 1987)).

33. The fairly commonly encountered fact pattern is one wherein the infringer undercuts the patentee's price and the patentee is obliged to match the lower price in order to prevent market share erosion. *See, e.g.*, *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 863, 226 U.S.P.Q. (BNA) 402, 409 (Fed. Cir. 1985) (defining reduction in profit margin as proper measure of lost profits), *cert. denied*, 475 U.S. 1016 (1986).

34. *See, e.g.*, *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1485, 16 U.S.P.Q.2d (BNA) 1093, 1102 (Fed. Cir. 1990) (affirming district court finding that infringer's activity kept patentee's company from raising its prices); *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 902, 229 U.S.P.Q. (BNA) 525, 529 (Fed. Cir.) (approving \$100 per unit award to patent owner as compensation for having to keep prices down due to infringement), *cert. denied*, 479 U.S. 852 (1986).

35. *See, e.g.*, *Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1144, 17 U.S.P.Q.2d (BNA) 1828, 1834 (Fed. Cir. 1991) (stating usual rule that, for profits on unpatented accessory items to be recoverable, "[t]here must be a reasonable probability that the patentee would have made the sale of the [accessory] had the defendant not made the infringing sale") (citing *Gyromat Corp. v. Champion Spark Plug Co.*, 735 F.2d 549, 554, 222 U.S.P.Q. (BNA) 4, 7 (Fed. Cir. 1984)); *see also infra* notes 121-25 and accompanying text (discussing damages for loss of related sales of unpatented goods).

36. *See Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 1067-68, 219 U.S.P.Q. (BNA) 670, 677-78 (Fed. Cir. 1983) (affirming damages award to patent owner corporation based on slowed corporate growth resulting from infringement as well as from financial and human resource drains attendant to lawsuit that followed).

37. *See infra* notes 39-44 and accompanying text (exploring ways in which Federal Circuit has relaxed burden of proof required to demonstrate right to lost profits).

38. *See infra* notes 45-107 and accompanying text (discussing Federal Circuit's relaxation of specific elements necessary to demonstrate right to lost profits).

Before the advent of the Federal Circuit, defendants and courts were quick to enumerate all the possible outcomes that could have ensued had no infringement occurred, other than the possibility that the patent owners would have made the infringing sales themselves.³⁹ The burden of proof on a patentee was severe, as illustrated by the following 1977 language of the Court of Claims in *Tektronix, Inc. v. United States*:⁴⁰ "If lost profits are ever to be awarded . . . it should be only after the strictest proof that the patentee would actually have earned and retained those sums in its sales" ⁴¹

By contrast, the Federal Circuit has made clear that a "reasonable probability" that a patentee would have made an infringer's sales will support a recovery of lost profits.⁴² In terms of the quantum of proof required, the burden of proving the existence of lost profits is no more severe than the patentee's burden of proving any other aspect of damages, which is by a preponderance of the evidence standard.⁴³ Patent owners need show by such a preponderance only that it is more likely than not that, absent the infringement, they would have made the sales in question or that some other form of lost profits has in fact occurred.⁴⁴

39. See, e.g., *Dowagiac Mfg. Co. v. Minnesota Moline Plow Co.*, 235 U.S. 641, 646-48 (1914) (noting that patentee failed to show that defendant's infringement resulted in lost profits by patentee and that infringer's sales might have gone to others); *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 483 (1853) (stating that only actual damages are to be awarded and that patentee failed to show capacity to meet demand for patented product); *Bendix Corp. v. United States*, 676 F.2d 606, 614 (Ct. Cl. 1982) (finding that lost profits are looked upon unfavorably and are only awarded upon compelling showing that patentee would have met demand and retained profit claimed).

40. 552 F.2d 343, 193 U.S.P.Q. (BNA) 385 (Ct. Cl. 1977), *cert. denied*, 439 U.S. 1048, 200 U.S.P.Q. (BNA) 704 (1978).

41. *Tektronix, Inc. v. United States*, 552 F.2d 343, 349, 193 U.S.P.Q. (BNA) 385, 391 (Ct. Cl. 1977), *cert. denied*, 439 U.S. 1048, 200 U.S.P.Q. (BNA) 704 (1978). A pre-Federal Circuit commentator described the plaintiff's burden of proof as "extremely heavy." Stroup, *supra* note 2, at 376. The writer further stated, "The courts that have awarded lost profits have required that a strong showing be made through the use of detailed market information." *Id.*

42. See, e.g., *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 864, 226 U.S.P.Q. (BNA) 402, 409 (Fed. Cir. 1985) (stating that reasonable probability is sufficient showing to prove existence of damages and that trial court must have reasonable flexibility in awarding lost profits), *cert. denied*, 475 U.S. 1016 (1986); *Gyromat Corp. v. Champion Spark Plug Co.*, 735 F.2d 549, 555, 222 U.S.P.Q. (BNA) 4, 8 (Fed. Cir. 1984) (finding that burden is one of reasonable probability, with doubts resolved against infringer).

43. See *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 926 F.2d 1161, 1164, 17 U.S.P.Q.2d (BNA) 1922, 1924-25 (Fed. Cir. 1991) (holding that amount of patentee's damages is finding of fact requiring proof by preponderance of evidence); *Yarway Corp. v. Eur-Control USA, Inc.*, 775 F.2d 268, 275, 227 U.S.P.Q. (BNA) 352, 357 (Fed. Cir. 1985) (stating that patentee must prove by preponderance of evidence that infringer caused patentee's lost profits).

44. See *supra* notes 42-43 (providing examples of Federal Circuit decisions that establish requisite burden for proving lost profits).

B. *Relaxation of Panduit Four-Prong Test for Lost Profits Recovery*

Relaxation of the standard of proof merely marks the beginning of the changes in the law on lost profits. Prevailing thinking held for many years that the causation aspect of lost profits, which views infringement as the factor causing the patentee to lose profits, had to be proven by a four-prong test set forth by the Sixth Circuit in *Panduit v. Stahlin Brothers Fibre Works, Inc.*⁴⁵ The test required a plaintiff to prove causation by establishing (1) the existence of demand for the patent owner's product in the marketplace; (2) the absence of acceptable noninfringing substitutes; (3) the patent owner's ability to meet the demand; and (4) the amount of profit that the patent owner would have earned if he or she had made the sales that the infringer actually made.⁴⁶ The Federal Circuit mentioned these four factors with approval in 1983 in *Central Soya Co. v. George A. Hormel & Co.*⁴⁷ At that time, courts viewed these factors as the *sine qua non* for awarding lost profits recoveries.⁴⁸

The first *Panduit* prong, demand for the patented product, has seldom proven difficult for plaintiffs to satisfy. Plaintiffs could readily meet the prong by providing proof of sales by patentees and their licensees, as well as by the infringers.⁴⁹ The parties' combined sales of goods covered by the patent are generally substantial enough in the typical patent infringement case to prove the presence of demand for the patented product.⁵⁰ If no demand existed, the lawsuit would probably not exist either.

45. 575 F.2d 1152, 197 U.S.P.Q. (BNA) 726 (6th Cir. 1978) (Chief Judge Markey, from Court of Customs and Patent Appeals (CCPA), sitting by designation).

46. *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156, 197 U.S.P.Q. (BNA) 726, 730 (6th Cir. 1978) (CCPA Chief Judge Markey sitting by designation).

47. 723 F.2d 1573, 220 U.S.P.Q. (BNA) 490 (Fed. Cir. 1983).

48. See, e.g., *Radio Steel & Mfg. Co. v. MTD Prods., Inc.*, 788 F.2d 1554, 1555, 229 U.S.P.Q. (BNA) 431, 432 (Fed. Cir. 1986) (requiring proof of *Panduit* elements to determine whether to award lost profits); *Gyromat Corp. v. Champion Spark Plug Co.*, 735 F.2d 549, 552, 222 U.S.P.Q. (BNA) 4, 7 (Fed. Cir. 1984) (relying on four-part *Panduit* test as basis for determining existence of lost profits); *Central Soya Co. v. George A. Hormel & Co.*, 723 F.2d 1573, 1578, 220 U.S.P.Q. (BNA) 490, 494 (Fed. Cir. 1983) (requiring that patentee present affirmative proof of each of four *Panduit* elements to recover lost profits).

49. See, e.g., *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1578, 12 U.S.P.Q.2d (BNA) 1026, 1029 (Fed. Cir. 1989) (finding that requirement of demand for product is met by noting sales by infringer and patentee), *cert. denied*, 493 U.S. 1022 (1990).

50. See, e.g., *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 926 F.2d 1161, 1165 n.3, 17 U.S.P.Q.2d (BNA) 1922, 1926 n.3 (Fed. Cir. 1991) (finding that plaintiff met first prong by simply noting defendant's infringing sales); *State Indus.*, 883 F.2d at 1578, 12 U.S.P.Q.2d (BNA) at 1029 (finding requirement of demand for product satisfied by high sales volume of patentee and infringer); *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 616, 222 U.S.P.Q. (BNA) 654, 663 (Fed. Cir.) (concluding that infringer's sales of patented invention and licenses for production and use of invention by two other corporations proved existence of demand), *cert. denied*, 469 U.S. 1038 (1984); *Gyromat*, 735 F.2d at 552, 222 U.S.P.Q. (BNA) at 6 (stating that sales by patentee and infringer during period in question satisfy first *Panduit* prong).

The second prong of *Panduit*, the absence of acceptable noninfringing substitutes, has proven the most troublesome prong by far for plaintiffs to prove. This prong, previously believed to be a strict requirement for recovery of lost profits, accounts for more appellate litigation and more attempted rationalization by the Federal Circuit than any other aspect of patent damages law.⁵¹

Early on, the Federal Circuit constricted the scope of products that could be considered acceptable noninfringing substitutes. In *Radio Steel & Manufacturing Co. v. MTD Products, Inc.*,⁵² a Federal Circuit panel held that substitute wheelbarrows incorporating some but not all of the elements of a patent claim did not constitute an acceptable substitute.⁵³ The court asserted that because the totality of the wheelbarrow elements and their interaction were the items that were patented, some lesser assembly and functionality could not be regarded as an "acceptable noninfringing substitute."⁵⁴ In *TWM Manufacturing Co. v. Dura Corp.*,⁵⁵ the court followed a similar philosophy on acceptable substitutes by holding that "[a] product lacking the advantages of that patented can hardly be termed a substitute 'acceptable' to the consumer who wants those advantages."⁵⁶

The import of these holdings was difficult to measure, because unpatented substitutes virtually never have all the attributes or desirable qualities that validly patented inventions do. Hence, courts prior to 1991 almost always held that the patentee satisfied the second prong of *Panduit*.⁵⁷ Clarification of the problem and enunciation of its partial resolution took another five years.

By 1991, the Federal Circuit began to see the problems posed by the literal wording of *Panduit*'s second prong. In that year, the court decided *Slimfold Manufacturing Co. v. Kinhead Industries, Inc.*,⁵⁸ which involved a patent on spring-loaded rod assemblies attached to fold-

51. See Skenyon & Porcelli, *supra* note 2, at 779 (stating that second prong is most heavily litigated question in lost profits cases).

52. 788 F.2d 1554, 229 U.S.P.Q. (BNA) 431 (Fed. Cir. 1986).

53. *Radio Steel & Mfg. Co. v. MTD Prods., Inc.*, 788 F.2d 1554, 1556, 229 U.S.P.Q. (BNA) 431, 432-33 (Fed. Cir. 1986).

54. *Id.*

55. 789 F.2d 895, 229 U.S.P.Q. (BNA) 525 (Fed. Cir.), *cert. denied*, 479 U.S. 852 (1986).

56. *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 901, 229 U.S.P.Q. (BNA) 525, 529 (Fed. Cir.) (quoting *Panduit*, 575 F.2d at 1162, 197 U.S.P.Q. (BNA) at 734), *cert. denied*, 479 U.S. 852 (1986).

57. See, e.g., *TWM*, 795 F.2d at 901, 229 U.S.P.Q. (BNA) at 525 (finding that mere existence of competing noninfringing substitute does not make substitute acceptable where alleged substitute does not have all benefits of patented device); *Radio Steel*, 788 F.2d at 1556, 229 U.S.P.Q. (BNA) at 432-33 (finding that substitute that did not incorporate all advantages of patented product is not acceptable substitute); *Panduit*, 575 F.2d at 1162 n.9, 197 U.S.P.Q. (BNA) at 734 n.9 (stating that knowing infringement suggests absence of acceptable noninfringing substitutes).

58. 932 F.2d 1453, 18 U.S.P.Q.2d (BNA) 1842 (Fed. Cir. 1991).

ing metal closet doors.⁵⁹ Both parties sold the complete doors, with the patented assemblies attached.⁶⁰ Following a victory on the validity and infringement issues at the district court level,⁶¹ the successful patentee wanted his damages to be based upon lost profits on the full door assemblies, measured by the relative market shares of the two parties.⁶² The Federal Circuit affirmed the district court's refusal to award lost profits,⁶³ however, noting that the old way of fixing rods to the doors was still an available and viable alternative to which the defendant could have returned, or stayed, had there been no infringement.⁶⁴ The court found no evidence that customers, in making their purchase decisions, cared at all about the presence of the patented hardware on the doors; instead, the invention's value resided primarily in a modest cost savings in manufacturing.⁶⁵ The case thus demonstrated that the Federal Circuit viewed "acceptability" in *Panduit's* second prong in terms of customer mindset rather than in terms of the technical superiority of a patented invention.

Standard Havens Products, Inc. v. Gencor Industries, Inc.,⁶⁶ also decided in 1991, clarified the situation further. The case involved environmentally enhanced production plants for making asphalt.⁶⁷ In attempting to tread the *Panduit* route to lost profits, the patentee argued that competing plants that lacked features of his invention were "unacceptable" infringers.⁶⁸ The jury returned a verdict based on lost profits, and the district court entered judgment on the

59. *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 932 F.2d 1453, 1455, 18 U.S.P.Q.2d (BNA) 1842, 1844 (Fed. Cir. 1991).

60. *See id.* at 1456, 18 U.S.P.Q.2d (BNA) at 1844-45 (noting that soon after patentee's doors went on market, defendant began selling nearly identical doors, with only minor improvements).

61. *See Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 626 F. Supp. 493, 499, 229 U.S.P.Q. (BNA) 298, 302 (N.D. Ga. 1985) (dismissing defendant's claim of noninfringement), *aff'd*, 810 F.2d 1113, 1 U.S.P.Q.2d (BNA) 1563 (Fed. Cir. 1987); *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 600 F. Supp. 1015, 1023, 225 U.S.P.Q. (BNA) 505, 512 (N.D. Ga. 1984) (dismissing defendant's claim that plaintiff's patent was invalid).

62. *See Slimfold*, 932 F.2d at 1458, 18 U.S.P.Q.2d (BNA) at 1846 (presenting patentee's argument that district court erroneously failed to award lost profits based on market share).

63. *Id.*

64. *See id.* (noting that parties' market shares were not affected after introduction of new product using patented assembly).

65. *Id.* at 1458-59, 18 U.S.P.Q.2d (BNA) at 1847.

66. 953 F.2d 1360, 21 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1991), *cert. denied*, No. 91-1808, 1992 LEXIS 5595 (U.S. Oct. 5, 1992).

67. *See Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1364, 21 U.S.P.Q.2d (BNA) 1321, 1323 (Fed. Cir. 1991) (stating that patentee's invention reduced pollution and product degradation normally associated with asphalt production), *cert. denied*, 113 S. Ct. 60 (1992).

68. *Id.* at 1373, 21 U.S.P.Q.2d (BNA) at 1331 (crediting patentee's argument that competing product lacking advantages of patented product is not acceptable substitute where buyer wants those advantages).

verdict.⁶⁹ The Federal Circuit in turn affirmed this aspect of the judgment.⁷⁰ The court held that the patent owner could prove the absence of “acceptable” substitutes in the *Panduit* sense by showing either: “(1) the purchasers in the marketplace generally were willing to buy the patented product for its advantages, or (2) the specific purchasers of the infringing product purchased on that basis.”⁷¹ The court found that, based on the evidence presented to the district court, reasonable jurors could have concluded that the second of these alternatives was present and that the defendant’s customers bought the products at issue because of the products’ environmental advantages.⁷²

Slimfold and *Standard Havens* reflect the Federal Circuit’s significant clarification of the meaning of “acceptable” in *Panduit*’s second prong. Prior to these decisions, it might have been thought that to be “acceptable” in the *Panduit* sense meant that the noninfringing product had to have all the features and advantages of the patented invention. One wondered how it could be “noninfringing” in that circumstance. *Slimfold* and *Standard Havens* signified that a distinction needs to be drawn between two broad categories of situations: first, where customers in fact purchase the patented product *because of* its advantages over the prior art; and second, where customers in fact purchase, or accept as a free go-along item, the patented product without regard to its actual or supposed advantages. The new cases clarify that in the first situation, the emergence of an “acceptable” noninfringing substitute will be rare-to-never because customers buy for the advantages of the invention. In the second situation, many noninfringing devices could be factually “acceptable” because consumers either do not know or do not care about benefits of the patented arrangement.

A considerable problem with acceptable substitutes remains, however. The wording of the second *Panduit* prong suggests that the mere presence of any “acceptable” (as now evolved in the case law) substitute in the market would cause a forfeiture of the patentee’s right to recover any lost profits by the *Panduit* route.⁷³ Perhaps the

69. *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, No. 88-1209-CV-W-3, 1989 U.S. Dist. LEXIS 9389, at *1, *9 (W.D. Mo. Aug. 8, 1989).

70. *Standard Havens*, 953 F.2d at 1373, 21 U.S.P.Q.2d (BNA) at 1331. The judgment was reversed with respect to the quantity of infringing plants involved. *Id.* at 1374, 21 U.S.P.Q.2d (BNA) at 1332.

71. *Id.* at 1373, 21 U.S.P.Q.2d (BNA) at 1331.

72. *Id.*

73. Courts have gotten around the literal wording of *Panduit*’s second prong, which requires the plaintiff to prove “absence of acceptable noninfringing substitutes,” *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156, 197 U.S.P.Q. (BNA) 726, 730 (6th Cir. 1978), in a number of ways. *See, e.g., supra* notes 52-72 and accompanying text (discussing

court in *Panduit* did not intend this result. The fact that some acceptable substitutes are present in the market should not preclude recovery for the portion of the defendant's infringing sales that would not have gone to those substitutes. Indeed, the case law is evolving in such a direction.

For example, in *State Industries, Inc. v. Mor-Flo Industries, Inc.*,⁷⁴ a patent owner sought to obtain a proportion of an infringer's sales income based on market share as a lost profits recovery and a reasonable royalty for the rest of the defendant's sales.⁷⁵ Both the district court and the Federal Circuit sanctioned this approach.⁷⁶ In *Atlantic Thermoplastics Co. v. Faytex Corp.*,⁷⁷ the Federal Circuit commented approvingly on *State Industries'* "market share approach" for use in cases where the approach is factually appropriate.⁷⁸ The market share method is thus one way of addressing the awkward wording of *Panduit's* second prong. After *State Industries*, that prong can be read as absence of noninfringing substitutes that would have totally absorbed all the infringer's sales, or as absence of noninfringing substitutes that were so desirable that the patentee cannot prove he or she would have made any sales against them. In this way, the second prong precludes recovery only where noninfringing substitutes completely account for the infringer's sales.

In 1991, a panel of the Federal Circuit in *Kaufman Co. v. Lantech, Inc.*⁷⁹ reversed a district court decision restricting lost profits to eight of forty-four infringing sales because the patentee was unable to prove that the remaining thirty-six sales would have gone to him and not to noninfringing substitutes.⁸⁰ In reversing, the appellate panel extended the rule resolving doubts as to amount of damages

cases clarifying what constitutes "acceptable" substitute); *infra* notes 74-78 and accompanying text (noting that courts permit award based on market share even where acceptable substitutes are present); *infra* notes 79-82 and accompanying text (illustrating ways in which courts shift onus to infringer to prove that infringing sales would have gone to noninfringing substitutes).

74. 883 F.2d 1573, 12 U.S.P.Q.2d (BNA) 1026 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990).

75. *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1577-78, 12 U.S.P.Q.2d (BNA) 1026, 1029 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990).

76. *See State Indus., Inc. v. Mor-Flo Indus., Inc.*, 8 U.S.P.Q.2d (BNA) 1971, 1980 (E.D. Tenn. 1988) (approving market share approach), *aff'd in part and vacated in part*, 883 F.2d 1573, 1577-78, 12 U.S.P.Q.2d (BNA) 1026, 1029 (Fed. Cir. 1989) (affirming district court's use of market share approach), *cert. denied*, 493 U.S. 1022 (1990).

77. 970 F.2d 834, 23 U.S.P.Q.2d (BNA) 1481 (Fed. Cir. 1992).

78. *See Atlantic Thermoplastics Co. v. Faytex Corp.*, 970 F.2d 834, 847, 23 U.S.P.Q.2d (BNA) 1481, 1492 (Fed. Cir. 1992) (urging use of market share approach to determine what proportion of infringer's sales would have gone to patentee). The court remanded the case for a determination of that question by the district court. *Id.*

79. 926 F.2d 1136, 17 U.S.P.Q.2d (BNA) 1828 (Fed. Cir. 1991).

80. *Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1141, 17 U.S.P.Q.2d (BNA) 1828, 1831 (Fed. Cir. 1991).

against the infringer⁸¹ and held that a showing by the patentee that some of the infringer's sales would have gone to the patentee but for the infringement is sufficient to shift the onus onto the infringer as to the remainder of the infringer's sales.⁸²

The Federal Circuit has suggested other ways to help patentees get past the seemingly all-or-nothing result of *Panduit's* second prong. Most notably, the court in *Uniroyal, Inc. v. Rudkin-Wiley Corp.*⁸³ announced a new inference on the subject. The district court, after finding an absence of acceptable noninfringing substitutes, awarded lost profits to the patent owner on eighty percent of the defendant's infringing sales and a reasonable royalty on the remainder of the sales based on the parties' relative market shares.⁸⁴ In effect the court was saying that twenty percent of the sales would have gone to unacceptable substitutes.⁸⁵ The Federal Circuit va-

81. *Id.* at 1141-42, 17 U.S.P.Q.2d (BNA) at 1831-32. This rule dates back at least to *Story Parchment Paper Co. v. Paterson Parchment Co.*, 282 U.S. 555 (1931), which held that exactitude with respect to the amount of a patent infringer's illegally earned profits was not required and that doubts as to the amount would be resolved against the infringer. *Story Parchment*, 282 U.S. at 563. The rule seems to have been extended to patent damages now that the remedy of an accounting for the infringer's profits is no longer available. See *supra* notes 21-22 and accompanying text (examining *Aro Manufacturing Co. v. Convertible Top Replacement Co.*, Supreme Court case requiring that proof of damages due to infringement focus on patentee's loss, not on infringer's gain); see also *Kori Corp. v. Wilco Marsh Buggies & Draglines, Inc.*, 761 F.2d 649, 655, 225 U.S.P.Q. (BNA) 985, 989 (Fed. Cir.) (citing *Story Parchment*, 282 U.S. at 563, as support for holding that risk of uncertainty in amount of patent damages is thrown upon wrongdoer/infringer), *cert. denied*, 474 U.S. 902 (1985). Still more recently, the Federal Circuit has applied *Story Parchment* in an even broader way, not only to the damages calculation, but also to the fundamental factual bases for recovery, for example under the *Panduit* four-prong test. See *Datascope Corp. v. SMEC, Inc.*, 879 F.2d 820, 826 n.6, 11 U.S.P.Q.2d (BNA) 1321, 1325 n.6 (Fed. Cir. 1989) (ruling that if in doubt on entitlement to lost profits under *Panduit*, court would resolve doubt against defendant under *Story Parchment*), *cert. denied*, 493 U.S. 1024 (1990).

82. *Kaufman*, 926 F.2d at 1141-42, 17 U.S.P.Q.2d (BNA) at 1831-32. The court cited *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 1065, 219 U.S.P.Q. (BNA) 670, 675 (Fed. Cir. 1983), and *Gyromat Corp. v. Champion Spark Plug Co.*, 735 F.2d 549, 554, 222 U.S.P.Q. (BNA) 4, 7 (Fed. Cir. 1984), as illustrations of "the pervading principle that doubt in ascertaining appropriate damages comes down against the infringer." *Kaufman*, 926 F.2d at 1141, 17 U.S.P.Q.2d (BNA) at 1832. The origins of this "principle" lie in equitable accountings for infringers' profits, a remedy abolished by the 1946 Patent Act. See *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 506-07, 141 U.S.P.Q. (BNA) 681, 694 (1964) (stating that 1946 Patent Act allows patentee to collect damages, not infringer's profits). The extension of the principle is readily apparent in modern cases. See, e.g., *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545, 19 U.S.P.Q.2d (BNA) 1432, 1437-38 (Fed. Cir. 1991) (shifting onus to defendant to prove award should be limited to market share); *Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1141, 17 U.S.P.Q.2d (BNA) 1828, 1831-32 (Fed. Cir. 1991) (holding that showing by patentee that some of infringer's sales would have gone to patentee but for infringement shifts burden to infringer that remainder of infringer's sales would not have gone to patentee). The principle has the effect, perhaps improperly, of shifting a substantial portion of the burden of proving damages to the defendant.

83. 939 F.2d 1540, 19 U.S.P.Q.2d (BNA) 1432 (Fed. Cir. 1991).

84. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 13 U.S.P.Q.2d (BNA) 1192, 1200 (D. Conn. 1989), *aff'd in part and vacated in part*, 939 F.2d 1540, 19 U.S.P.Q.2d (BNA) 1432 (Fed. Cir. 1991).

85. See *id.* (awarding lost profits on 80% of infringing sales based on patentee's market

cated, holding that satisfaction of *Panduit's* second prong as to some sales gave rise to a rebuttable presumption that all of the infringer's sales would have gone to the patentee.⁸⁶ The court thus cast the burden upon the infringer to prove how many of its sales would have gone to noninfringing substitutes had there been no infringement in the first place.⁸⁷ This aspect of *Uniroyal* represents a major alleviation of the plaintiff's burden of proof in lost profits cases.⁸⁸

The third prong of *Panduit's* four-prong proof pattern for lost profits recovery, the patentee's ability to meet the demand for his or her patented product, is and remains a requirement for lost profits to be recovered.⁸⁹ The patentee's "ability to meet demand" is understood, however, not as requiring the patent owner to have immediate plant capacity. Rather, patentees may satisfy this prong by showing that they could have subcontracted the production work⁹⁰ or that their facilities were adequate or could have been made adequate to meet demand for the patented product.⁹¹ Courts have held evidence to be sufficient where the patentee showed that he or she bought the product from an outside source, developed the market for it, aggressively protected that market, and intended to meet de-

share, notwithstanding absence of acceptable noninfringing substitutes). The case highlights the problem of *Panduit's* black-and-white characterization of the second prong, which often does not comport with commercial reality and is now contrary to established case law. See *infra* note 164 and accompanying text (illustrating propriety of dividing recovery between lost profits and reasonable royalty by providing multiple Federal Circuit decisions that sanction such result).

86. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545, 19 U.S.P.Q.2d (BNA) 1432, 1437-38 (Fed. Cir. 1991). The court noted that the defendant, Uniroyal, had not presented evidence rebutting this presumption. *Id.* at 1545, 19 U.S.P.Q.2d (BNA) at 1438.

87. *Id.* at 1545, 19 U.S.P.Q.2d (BNA) at 1437-38 (finding that burden shifts to defendant to prove award should be restricted to market share once patentee establishes absence of acceptable substitutes).

88. Compare *id.* at 1545, 19 U.S.P.Q.2d (BNA) at 1437-38 (requiring defendant to prove that patentee's award of lost profits should be restricted to market share) with *Uniroyal*, 13 U.S.P.Q.2d (BNA) at 1200 (requiring in district court that patentee prove that award should not be restricted to market share).

89. See, e.g., *Datascope Corp.*, 879 F.2d at 826-27, 11 U.S.P.Q.2d (BNA) at 1325-26 (denying damages for infringer's foreign sales where patentee lacked business structure to exploit overseas demand for product); *Kori Corp.*, 761 F.2d at 653-55, 225 U.S.P.Q. (BNA) at 987-89 (stating that in two-supplier market, patentees are entitled to recover lost profits upon showing that they would have made sales but for infringement, thus requiring ability to meet demand for product); *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 616, 222 U.S.P.Q. (BNA) 654, 663 (Fed. Cir.) (adopting trial court's requirement that patentee possess "at least potential manufacturing and marketing capabilities to obtain the infringing sales"), *cert. denied*, 469 U.S. 1038 (1984); *Gyromat*, 735 F.2d at 553-54, 222 U.S.P.Q. (BNA) at 7-8 (holding that proof that patentee was reasonably likely to have made infringer's sales requires showing that patentee could have met demand for product).

90. See, e.g., *Gyromat*, 735 F.2d at 554, 222 U.S.P.Q. (BNA) at 8 (reasoning that demand could be met by subcontracting production of patented product, which would result in no "serious adverse effect" on overall profit margin).

91. See, e.g., *Bio-Rad*, 739 F.2d at 616, 222 U.S.P.Q. (BNA) at 663 (agreeing with trial court that patentee need only possess potential marketing and manufacturing capabilities to meet demand).

mand even if the supplier failed to meet its contractual supply obligations.⁹² The Federal Circuit has justified these loose approaches to the *Panduit* standard by noting several times that the *Panduit* recitations are not the sole means by which courts can analyze whether a patentee may recover lost profits.⁹³

There is a certain interplay between a finding on *Panduit's* second prong, the absence of noninfringing substitutes, and *Panduit's* third prong, the patentee's marketing and manufacturing capability to meet increased demand. In *Uniroyal*, the Federal Circuit held that the district court's finding of absence of acceptable noninfringing substitutes was inconsistent with the court's restriction of the plaintiff's lost profits recovery to its market share level of eighty percent.⁹⁴ On the other hand, in *Datascope Corp. v. SMEC, Inc.*,⁹⁵ the Federal Circuit ruled that the lost profits on the foreign portion of an infringer's sales were properly denied, even though no acceptable noninfringing alternatives existed, because the plaintiff did not show that it had a business structure in the countries in question to handle the sales.⁹⁶ Accordingly, the "no acceptable substitutes" finding is made on the premise that the plaintiff is capable of supplying customers' needs; if not, the class of things labeled "acceptable" may enlarge as to the nonsupplied customers. Plaintiffs must continue to satisfy the independent requirement of ability to meet demand for a patented product, notwithstanding a showing of the general absence of acceptable noninfringing substitutes.⁹⁷

92. See, e.g., *Yarway Corp. v. Eur-Control USA, Inc.*, 775 F.2d 268, 276-77, 227 U.S.P.Q. (BNA) 352, 358 (Fed. Cir. 1985) (holding that ability to meet demand was demonstrated in cases where company had developed market that it aggressively protected, even though company was obliged to rely on contractual supplier for company to continue producing patented product).

93. See *infra* note 102 (listing several cases in which Federal Circuit has indicated that *Panduit* is merely one means of proving lost profits).

94. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545, 19 U.S.P.Q.2d (BNA) 1432, 1437-38 (Fed. Cir. 1991). Recall that in *State Industries*, where market share was successfully applied, the plaintiff stipulated that it was not seeking lost profits beyond its market share of 40%. *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1576, 12 U.S.P.Q.2d (BNA) 1026, 1028 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990).

95. 879 F.2d 820, 11 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1989).

96. *Datascope Corp. v. SMEC, Inc.*, 879 F.2d 820, 826-27, 11 U.S.P.Q.2d (BNA) 1321, 1325-26 (Fed. Cir. 1989).

97. An open question remains whether to be "acceptable," the substitute actually has to have been commercially sold. Defendants' lawyers complain that if this is required, common sources of noninfringing substitutes such as expired patents, textbook publications, and the like will wrongly be eliminated from the store of knowledge to which a defendant could turn. For example, in the context of a reasonable royalty determination in *Panduit*, the infringer-defendant argued and the master found that acceptable substitutes were present in the market but not sold by *Stahlin Brothers Fibre Works* during the relevant time period. *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1159, 197 U.S.P.Q. (BNA) 726, 732 (6th Cir. 1978). The district court agreed. *Id.* The Sixth Circuit reversed on this point, pointing out that *Stahlin Brothers' "post-hoc"* adoption of the substitute only when forced to do so by

Moving to the fourth prong of *Panduit*, the amount of the patentee's lost profits, the Federal Circuit has once again aided the patentee. In 1984, the court held in *Paper Converting Machine Co. v. Magna-Graphics Corp.*⁹⁸ that the profits to which a patentee is entitled are incremental profits, or profits that exclude fixed costs.⁹⁹ The court concisely characterized this approach as follows:

[This] approach recognizes that it does not cost as much to produce unit N+1 if the first N (or fewer) units produced already have paid the fixed costs. Thus fixed costs—those costs which do not vary with increases in production, such as management salaries, property taxes, advertising, and insurance—are excluded when determining profits.¹⁰⁰

Depending on the industry, recoverable profit margins can easily be doubled by exclusion of fixed costs. All that is needed for such a result to obtain under the foregoing authority is to have fixed costs equalling or exceeding variable costs. In high overhead industries this might be possible.¹⁰¹ A defendant's liability for a particular sale under these circumstances can easily exceed any net profit he or she will earn on that sale. Consider the following example: Fixed costs, principally advertising campaigns and marketing overhead, may run

the district court's injunction militates against the argued acceptability. *Id.* at 1162, 197 U.S.P.Q. (BNA) at 734-35. Patentees' attorneys argue, on the other hand, that these so-called substitutes are nothing but artificial hindsight havens for guilty infringers, are nearly always unproven in practical experience, and are fraught with imperfections that only the harsh reality of marketplace existence could bring out. *See, e.g., Central Soya Co. v. George A. Hormel & Co.*, 723 F.2d 1573, 1579, 220 U.S.P.Q. (BNA) 490, 494 (Fed. Cir. 1983) (stating that defendant has burden of proving availability of acceptable noninfringing substitutes on market). Both sides' arguments have merit. The question should be resolved by the trier of fact in each case, possibly with some shifting of the burden of proof to defendants who assert that a particular untried noninfringing substitute would in fact have been viable technologically and attractive to their customers.

98. 745 F.2d 11, 223 U.S.P.Q. (BNA) 591 (Fed. Cir. 1984).

99. *See Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 22, 223 U.S.P.Q. (BNA) 591, 599 (Fed. Cir. 1984) (affirming trial court's decision to apply incremental income approach and stating that fixed costs are excluded under this approach).

100. *Id.*

101. For other cases upholding the award of incremental profits, see *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1485, 16 U.S.P.Q.2d (BNA) 1093, 1102 (Fed. Cir. 1990) (holding that where district court based lost profits award on calculation that made no deduction for direct labor costs, such award is not clearly erroneous in view of testimony that patentee could have produced additional items without increase in work force or working hours); *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 617, 222 U.S.P.Q. (BNA) 654, 664 (Fed. Cir.) (approving incremental profits approach that excludes all of patentee's costs except direct selling expenses, labor, and materials), *cert. denied*, 469 U.S. 1038 (1984). This methodology cannot, however, be stretched so far as to lose its logical core. In *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1522 (D. Mass. 1990), the court refused to award any lost profits as to certain film sales. The court awarded lost profits based on higher fixed costs as to other film sales. *Id.* at 1528; *see also State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1580, 12 U.S.P.Q.2d (BNA) 1026, 1031 (Fed. Cir. 1989) (affirming incremental profits calculation, but only after noting that likelihood of rise in fixed costs was "minimal"), *cert. denied*, 493 U.S. 1022 (1990). Those advising clients about patent infringement risks should pay particular attention to this factor in the new equation of patent liability.

90% of revenue for an item like a patented household soap formulation. Suppose the soap sells at wholesale for \$0.60 per bar. Fixed costs would then be \$0.54. Variable costs, e.g., labor, materials, and shipping, are so called because they vary rather directly with volume. Suppose in our soap example they run 5% of revenue, or \$0.03, leaving a 5% net profit, also \$0.03.

If an infringer diverts sales of this soap from the patentee, the infringer will be liable for \$0.60 (lost revenue) minus \$0.03 (variable costs), or \$0.57 per bar. The defendant infringer, if he had similar costs to the patentee's, has quite likely thought of himself as "making" only \$0.03 per bar on his infringing activities, and may have wrongly assumed that his liability will be merely some fraction of three cents per bar. The large discrepancy between the actual liability (if the patentee proves his entitlement to lost profits as a preliminary matter) and what the defendant may have anticipated, is due to the fact that virtually all of the patentee's advertisements, marketing expenses, and other fixed costs have typically already been paid by him. At the time of the infringement the patentee was likely in the profitability mode, with these big expenses behind him, at least for a period of time to come. In our example the patentee was "making" \$0.57 per bar when the infringer's activities intervened and took these profits away. Viewed in this light, it is easy to see how the extent of liability may be much greater than upon superficial review.

C. Emergence of Non-Panduit Analyses for Lost Profits Recovery

While *Panduit* is undoubtedly the most cited analysis for determining a patentee's right to recover lost profits in an infringement suit, it is now well established that *Panduit* is not the only proper route to that end.¹⁰² As the case law has emerged, the overall test for entitlement to lost profits has become a more generic statement. A patentee must now show, on a more-than-speculative evidentiary basis, that there is a reasonable probability that, but for the infringement, the patentee would have made the infringer's sales.¹⁰³

102. See, e.g., *Standard Havens Prods. Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1372-73, 21 U.S.P.Q.2d (BNA) 1321, 1331 (Fed. Cir. 1991) (stating that *Panduit* four-part test is "one way to establish causation" for lost profits), *cert. denied*, 113 S. Ct. 60 (1992); *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 926 F.2d 1161, 1165, 17 U.S.P.Q.2d (BNA) 1922, 1925 (Fed. Cir. 1991) (noting that *Panduit* is merely one permissible method of proving lost profits damages, thereby implying that *Panduit* is not exclusive method); *Carella v. Starlight Archery & Pro Line Co.*, 804 F.2d 135, 141, 231 U.S.P.Q. (BNA) 644, 648 (Fed. Cir. 1986) (finding that *Panduit* guidelines are not exclusive standard for determining entitlement to lost profits).

103. See, e.g., *State Indus.*, 883 F.2d at 1577, 12 U.S.P.Q.2d (BNA) at 1028 (requiring showing that there is reasonable probability that but for infringement, patentee would have made infringer's sales); *Water Technologies Corp. v. Calco Ltd.*, 850 F.2d 660, 671, 7 U.S.P.Q.2d (BNA) 1097, 1106 (Fed. Cir. 1988) (holding that showing of reasonable probability suffices

In making this generic showing, a patentee need not negate all possibilities that a purchaser might have bought a different product or might have forgone the purchase altogether.¹⁰⁴ *Panduit* is now understood as setting forth merely one of several fact patterns that meet this generic test and thus entitle a patent owner to recover lost profits.¹⁰⁵ At least one other fact pattern also meets this "overall" or "general causality" test. This fact pattern is exemplified by cases in which two-supplier product markets exist.¹⁰⁶ The pattern includes situations wherein two litigants occupy an economically identifiable niche in a market.¹⁰⁷ In addition, other non-*Panduit* fact patterns satisfying the generic lost profits entitlement test may emerge in the future. The likelihood is that reinterpretation of *Panduit* will continue to occur as these patterns arise in an effort to provide increasingly rational decisions in this area.

D. Infringer's Liability for Patentee's Price Cuts

It is now fairly clear that infringers are liable for any price reductions their activities may force on patentees. A price reduction remedy is a form of lost profits recovery for patent owners, although neither the four-prong *Panduit* test nor the generic rationale for lost profits stated in the preceding section seems to be applicable for determining the scope of such liability.¹⁰⁸ In fact, price-reduction

and that causation need not be demonstrated to certainty), *cert. denied*, 488 U.S. 968 (1988); *Del Mar Avionics, Inc. v. Quinton Instrument Co.*, 836 F.2d 1320, 1326, 5 U.S.P.Q.2d (BNA) 1255, 1260 (Fed. Cir. 1987) (mandating that patentee show reasonable probability that if defendant had not infringed patented product, patentee would have made defendant's sales).

104. *See, e.g., Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1141, 17 U.S.P.Q.2d (BNA) 1828, 1832 (Fed. Cir. 1991) (stating that patentee need not negate every possibility that purchaser might have bought another product other than patentee's absent infringement); *State Indus.*, 883 F.2d at 1577, 12 U.S.P.Q.2d (BNA) at 1028 (providing that lost profits recovery does not require patentee to negate every possibility that purchaser might have bought other product or forgone purchase altogether had there been no infringement); *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 21, 223 U.S.P.Q. (BNA) 591, 598 (Fed. Cir. 1984) (requiring patentee to prove that reasonable probability of sale existed but for infringement and not that patentee negate every possibility that purchaser might have bought another product or forgone purchase altogether if not for infringement).

105. *See supra* note 102 and accompanying text (noting that *Panduit* is not sole means of establishing lost profits).

106. *See, e.g., Kaufman Co.*, 926 F.2d at 1141, 17 U.S.P.Q.2d (BNA) at 1833 (holding that where patentee and infringer are suppliers rather than manufacturers, it is reasonable to infer that infringer caused loss of patentee's profit); *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 1065, 219 U.S.P.Q. (BNA) 670, 675 (Fed. Cir. 1983) (holding that in two-supplier market, patentee's loss is proper ground for relief).

107. *See, e.g., Marsh-McBirney, Inc. v. Montedoro-Whitney Corp.*, 882 F.2d 498, 505, 11 U.S.P.Q.2d (BNA) 1794, 1798-99 (Fed. Cir. 1989) (holding that patentee and infringer occupied separate niche within larger market, thus operating as equivalent of two-supplier market), *cert. granted and judgment vacated on procedural grounds*, 111 S. Ct. 775 (1991).

108. Such liability is supported, however, by another part of *Panduit* itself and by venerable authority that pre-dates *Panduit*. In considering the price-reduction aspect of the damages in *Panduit*, Chief Judge Markey remarked that the right to damages caused by price

liability appears to exist independently of whether a patentee can show the diversion of any sales due to a patent infringement.¹⁰⁹

For example, in both *Lam, Inc. v. Johns-Manville Corp.*¹¹⁰ and *King Instrument Corp. v. Otari Corp.*,¹¹¹ the Federal Circuit required defendants to reimburse patentees for cuts the patentees made in the prices of their patented products to meet the defendant-infringers' competition.¹¹² In *Lam*, the patentee proved the early growth rate of its patented product's sales and projected this growth rate through the period of infringement.¹¹³ The patentee then subtracted its actual sales volume during the period of infringement from its projected sales volume for that period, thereby deriving the total dollar amount of sales lost due to the infringer's activities.¹¹⁴ The Federal Circuit sustained an award based on the difference, i.e., including both losses due to diversion of sales to the defendant and lower profits on the patentee's own sales due to price cuts made to meet competition created by the infringement.¹¹⁵ In like fashion the Federal Circuit in *King Instrument* affirmed an award of lost profits based on a patentee's preexisting profit margin at the time infringement began.¹¹⁶ The patentee showed a depression in sales and unit profits by reason of the infringement and was awarded damages accordingly.¹¹⁷

reductions "stands on the same ground" as damages caused by lost sales. *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1157, 197 U.S.P.Q. (BNA) 726, 731 (6th Cir. 1978) (citing *McSherry Mfg. Co. v. Dowagiac Mfg. Co.*, 163 F. 34, 35 (6th Cir. 1908), *cert. denied*, 214 U.S. 512 (1909)). In *Panduit*, the master had denied recovery for price cut damages because the profits lost by the cut were "more than compensated by the gain in profits due to the increase in plaintiff's sales volume because of the price reduction." *Panduit*, 575 F.2d at 1157, 197 U.S.P.Q. (BNA) at 730. On appeal, the Sixth Circuit held that this ruling was not clearly erroneous. *Id.*; see also *Yale Lock Mfg. Co. v. Sargent*, 117 U.S. 536, 551-52 (1886) (providing in dictum that price cut losses are recoverable if caused by infringers); *Coleman Co. v. Holly Mfg. Co.*, 269 F.2d 660, 663, 122 U.S.P.Q. 559, 560-61 (9th Cir. 1959) (ordering increase in damages, based in part on losses caused by infringer's competition).

109. See *Lam*, 718 F.2d at 1067, 219 U.S.P.Q. (BNA) at 676 (awarding lost profits due to forced price reductions separately from lost profits due to lost sales); *supra* note 108 (noting language in *Panduit* opinion stating that lost profits due to price cuts stand on same ground as lost profits caused by lost sales).

110. 718 F.2d 1056, 219 U.S.P.Q. (BNA) 670 (Fed. Cir. 1983).

111. 767 F.2d 853, 226 U.S.P.Q. (BNA) 402 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1016 (1986).

112. *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1057, 1057, 219 U.S.P.Q. (BNA) 670, 676 (Fed. Cir. 1983); *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 864, 226 U.S.P.Q. (BNA) 402, 410 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1016 (1986).

113. *Lam*, 718 F.2d at 1059-62, 219 U.S.P.Q. (BNA) at 671-73.

114. *Id.*

115. *Id.* at 1067, 219 U.S.P.Q. (BNA) at 676.

116. *King Instrument*, 767 F.2d at 864, 226 U.S.P.Q. (BNA) at 410.

117. *Id.*; see also *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1485, 16 U.S.P.Q.2d (BNA) 1093, 1102 (Fed. Cir. 1990) (affirming damage award for patentee's having to maintain low prices where patent owner testified that he could not charge higher prices with defendant-infringer in same market).

The court's holdings on this point do not seem to have been recognized for the magnitude of potential liability they portend. In a lawsuit where a patent owner is the dominant figure in the marketplace, even a small price cut caused by the presence of infringing goods in the market can easily exceed by many times the profits—or even the gross receipts—on the infringer's sales. Thus, although the infringer's profits *per se* cannot be recovered under 35 U.S.C. § 284,¹¹⁸ amounts equal to or even substantially greater than the infringer's profits may well be awarded in litigation between active competitors in the same market.

E. Recovery for Loss of Profits on Collateral Sales of Unpatented Goods

The courts have now made clear that in the proper circumstances “tag-along” or “convoyed” sales, while not directly protected by a patent, are nevertheless fair game for damage calculations when infringement is found.¹¹⁹ The circumstances must involve a situation in which the causality of these collateral losses can be connected to the infringing activities.¹²⁰

Consider an example involving industrial emergency lighting fixtures. These are fixtures that might typically appear as every tenth fixture in the ceiling of a factory. Their outward appearance is similar to that of the regular fixtures in the ceiling. The emergency fixtures, however, in addition to providing normal lighting under normal conditions, have an emergency feature that provides some minimal lighting level in the event of a power outage. The nine-out-of-ten regular fixtures look identical to the fixtures with the emergency feature, are sold by the same manufacturer, and have many common parts. Assume that in this industry, fixture manufacturers who receive orders for emergency fixtures always receive orders for normal fixtures as well, not because of any tying scheme, but because it is much more convenient and aesthetic for customers to buy all look-alike fixtures from a single source in a single order. Assume further that the fixture with the emergency standby feature is patented.

118. See *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 507, 141 U.S.P.Q. (BNA) 681, 694 (1964) (holding that under 35 U.S.C. § 284, patentee is entitled to recover compensation for his or her loss suffered as result of infringement without regard to whether infringer gained or lost by infringement).

119. See *infra* notes 121-25 and accompanying text (providing cases that illustrate circumstances under which such sales are recoverable as lost profits).

120. See, e.g., *King Instrument Corp. v. Otari Corp.*, 726 F.2d 853, 866, 226 U.S.P.Q. (BNA) 402, 411 (Fed. Cir. 1985) (noting that collateral losses are recoverable only where patentee would have made collateral sale but for infringement), *cert. denied*, 475 U.S. 1016 (1986).

In this example, a competitor offers an infringing version of the emergency standby fixture, perhaps at a price ten percent less than the patentee's price for such fixtures. The competitor also offers matching regular fixtures. If the infringer obtains an order for the emergency lighting fixtures, he or she will also receive an order for the regular fixtures. The total order lost by the patentee will therefore be some nine or ten times the dollar volume of lost sales of the infringing goods alone.

It now seems established that under circumstances such as these, the patentee is entitled to recover lost profits on the entire order because the facts show convincingly that sales of the infringing emergency fixtures would have carried the normal fixture sales with them.¹²¹ Courts style this recovery as being under the "entire market value rule."¹²² This somewhat awkward expression arose from cases where a single machine or device was being sold, containing what was referred to as a patented "feature," along with other features.¹²³ More broadly, under this rule today, patent holders may recover lost profits as to any collateral sales that they could normally anticipate making in combination with a patented invention, whether the collateral sales are parts of a single product or separate items that accompany the patented product.¹²⁴

It is presently unclear just how far the causality factor for collateral sales can reach under Federal Circuit jurisprudence. For exam-

121. See, e.g., *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 23, 223 U.S.P.Q. (BNA) 591, 599 (Fed. Cir. 1984) ("The deciding factor . . . is whether '[n]ormally the patentee (or its licensee) can anticipate sale of such unpatented components as well as of the patented' ones.") (quoting *Tektronix, Inc. v. United States*, 552 F.2d 343, 351, 193 U.S.P.Q. (BNA) 385, 393 (Ct. Cl. 1977)); see also *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1485, 16 U.S.P.Q.2d (BNA) 1093, 1102 (Fed. Cir. 1990) (permitting damages for unpatented accessory usually sold with patented product); *Beatrice Foods Co. v. New England Printing & Lithographing Co.*, 899 F.2d 1171, 1175, 14 U.S.P.Q.2d (BNA) 1020, 1024 (Fed. Cir. 1990) (holding that law permits damages for "convoyed" sales, meaning related sales, including those for which no proof of infringing structure is provided); *Kori Corp. v. Wilco Marsh Buggies & Draglines, Inc.*, 761 F.2d 649, 656, 225 U.S.P.Q. (BNA) 985, 989 (Fed. Cir.) (affirming recovery of lost profits from sales of infringing amphibious vehicle on ground that vehicle incorporated patented pontoon, in cases where financial and marketing dependence on patented item provided causal link for lost profits on complete product), *cert. denied*, 474 U.S. 902 (1985).

122. See *Leesona Corp. v. United States*, 599 F.2d 958, 974, 202 U.S.P.Q. (BNA) 424, 439 (Ct. Cl.) (mentioning that under "entire market value" rule, it is financial and marketing dependence of contested item that is significant to determination of lost profits damages), *cert. denied*, 444 U.S. 991 (1979).

123. See *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1580, 12 U.S.P.Q.2d (BNA) 1026, 1031 (Fed. Cir. 1989) (stating that market value rule allows recovery for entire apparatus containing several features when feature patented constitutes basis for customer demand), *cert. denied*, 493 U.S. 1022 (1990).

124. See, e.g., *State Indus.*, 883 F.2d at 1580, 12 U.S.P.Q.2d (BNA) at 1031 (permitting recovery for loss of sale of entire apparatus containing patented item); *King Instrument*, 767 F.2d at 866, 226 U.S.P.Q. (BNA) at 411 (holding that profits for spare parts normally sold with patented item are recoverable); *Kori*, 761 F.2d at 656, 225 U.S.P.Q. (BNA) at 989 (permitting recovery for lost profits on amphibious vehicles incorporating patented pontoon).

ple, in *King Instrument*, the Federal Circuit held that lost profits on spare parts normally sold as part of a package with the patented product could be recovered, but not lost profits on spare parts sold after the original sale where the seller could not necessarily anticipate the later sale.¹²⁵ No apparent reason exists for such a limitation in cases such as the above example concerning lighting fixtures. If evidence shows that an infringing sale has cost the patentee not only the sales of noninfringing normal lighting fixtures but also of replacement fixtures sold after the initial sale, the causality chain would appear to be unbroken. Therefore, the recovery of lost profits in an after-market such as this one should be allowed.

III. RECOVERY OF AN ESTABLISHED ROYALTY

Whether viewed as a category unto itself or as one of the *Georgia-Pacific Corp. v. United States Plywood Corp.*¹²⁶ species of reasonable royalty, the concept of an "established royalty" has undergone nearly as much change in recent years as the law on recovery of lost profits. Once again, the changes have favored the patent owner.¹²⁷ Typically, royalty rates stated in other licenses and other offers of licenses continue to be proffered as one indicium of what a reasonable royalty should be,¹²⁸ even though these royalties are often very low. It is now settled law that a finding of "established royalty" in a suit against a particular defendant requires evidence of a significant number of prior licenses, each freely made, and each granted to a licensee whose acts were commensurate in scope with the infringing acts of the defendant.

In *Bio-Rad Laboratories, Inc. v. Nicolet Instrument Corp.*,¹²⁹ the Federal Circuit explained that while royalty rates offered or charged to others are commonly applicable in setting a reasonable royalty, they do not necessarily constitute an established royalty.¹³⁰ In *Deere & Co. v. International Harvester Co.*,¹³¹ the Federal Circuit held that a single prelitigation license to a minor competitor at 1% royalty and

125. *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 866, 226 U.S.P.Q. (BNA) 402, 411 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1016 (1986).

126. 318 F. Supp. 1116, 166 U.S.P.Q. (BNA) 235 (S.D.N.Y. 1970), *modified*, 446 F.2d 295, 170 U.S.P.Q. (BNA) 369 (2d Cir.), *cert. denied*, 404 U.S. 870 (1971).

127. See *infra* notes 130-34 and accompanying text (indicating cases where Federal Circuit assigned patent owners damages awards that exceeded actual industry royalty figures).

128. See *infra* note 182 and accompanying text (documenting calculation of damages awards based on prospective license agreements).

129. 739 F.2d 604, 222 U.S.P.Q. (BNA) 654 (Fed. Cir.), *cert. denied*, 469 U.S. 1038 (1984).

130. See *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 617, 222 U.S.P.Q. (BNA) 654, 664 (Fed. Cir.) (noting that actual damage awards may exceed established royalty), *cert. denied*, 469 U.S. 1038 (1984).

131. 710 F.2d 1551, 218 U.S.P.Q. (BNA) 481 (Fed. Cir. 1983).

two prelitigation offers to the defendant itself that were also at 1% royalty did not preclude an award of 15% as a reasonable royalty.¹³² In *Hanson v. Alpine Valley Ski Area, Inc.*,¹³³ evidence showing offers of licenses to manufacturers of snow-making machines at 2.5% of sales price did not prevent the court from affirming a reasonable royalty charge to a user-defendant in the amount of one-third of the savings realized by that defendant in using the patented snow-making process.¹³⁴ The foregoing cases seemingly clarify that an established royalty is now predominantly regarded as one possible species of reasonable royalty.¹³⁵ However, a truly established royalty is found to exist only in conditions much more stringent than formerly required, excluding mere offers or mere licenses to nonanalogous entities.¹³⁶

In connection with attempted proof of an established royalty, an interesting issue arises under rule 408 of the Federal Rules of Evidence, which excludes compromises and offers of compromise as

132. *Deere & Co. v. International Harvester Co.*, 710 F.2d 1551, 1557-58, 218 U.S.P.Q. (BNA) 481, 486 (Fed. Cir. 1983) (indicating approval of district court finding that license and offers were irrelevant to determination of established royalty).

133. 718 F.2d 1075, 219 U.S.P.Q. (BNA) 679 (Fed. Cir. 1983).

134. *Hanson v. Alpine Valley Ski Area, Inc.*, 718 F.2d 1075, 1078, 219 U.S.P.Q. (BNA) 679, 682 (Fed. Cir. 1983) (finding mere offers to license at particular rate insufficient to determine existence of established royalty).

135. In *Bio-Rad*, the Federal Circuit affirmed a 33% royalty as reasonable, despite an industry standard of only 3-10%. 739 F.2d at 617, 222 U.S.P.Q. (BNA) at 664. In *Allen Archery, Inc. v. Browning Manufacturing Co.*, the Federal Circuit found reversible error when the district court applied the plaintiff's industry-wide license royalty to the wrong base. 898 F.2d 787, 789-90, 14 U.S.P.Q.2d (BNA) 1156, 1158-59 (Fed. Cir. 1990). The plaintiff's usual terms were a certain percentage of "arms-length" selling price; the district court used the defendant's intercorporate selling price within the corporate family as the basis for calculating the appropriate royalty. *Allen Archery*, 898 F.2d at 790, 14 U.S.P.Q.2d (BNA) at 1158-59. In *Sun Studs, Inc. v. ATA Equipment Leasing, Inc.*, the court criticized a jury instruction regarding "established royalty" as being inapt for the facts of the case. 872 F.2d 978, 993-94, 10 U.S.P.Q.2d (BNA) 1338, 1351-52 (Fed. Cir. 1989). The instruction, which the court found "unobjectionable in the abstract," characterized an established royalty as one that (a) "was agreed to prior to the infringement;" (b) "was paid by such a number of persons as to indicate a general acquiescence in its reasonableness," or, if paid by one person or entity, indicates a large-volume exclusive licensee; (c) "was not negotiated under threat of a lawsuit or in settlement of a lawsuit;" and (d) "paid for comparable rights of activity under the patent." *Id.* If these four requirements become established law in future cases, the dimensions of "established royalty" will be greatly clarified.

136. *Compare Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 617, 222 U.S.P.Q. (BNA) 654, 664 (Fed. Cir.) (explaining that actual royalty rates charged within industry may be applicable in determining reasonable royalty but do not necessarily constitute established royalty), *cert. denied*, 469 U.S. 1038 (1984) and *Deere*, 710 F.2d at 1557-58, 218 U.S.P.Q. (BNA) at 486 (finding existing licenses and offers to license irrelevant to determination of established royalty) with *Pitcairn v. United States*, 547 F.2d 1106, 1116-19, 192 U.S.P.Q. (BNA) 612, 618 (Ct. Cl. 1977) (using plaintiff's widespread offer of two percent royalty to other manufacturers as basis for established royalty rate), *cert. denied*, 434 U.S. 1051 (1978) and *Calhoun v. United States*, 453 F.2d 1385, 1393-94, 172 U.S.P.Q. (BNA) 438, 445 (Ct. Cl. 1972) (deriving established royalty from patentee's numerous offers and actual grants to license invention at uniform royalty rate).

evidence of the true value of disputed claims.¹³⁷ The issue concerns whether prior licenses or offers of licenses under the patent in suit should be excluded under the rule when offered as evidence of a reasonable royalty. Licenses are often entered into in compromise of a claim, either threatened or actually brought in court, of patent infringement.¹³⁸ The Federal Circuit has held that rule 408 excludes license offers under the patent in suit where they are made in the context of an existing infringement controversy.¹³⁹ Even where there is no such ongoing controversy, and rule 408 does not require exclusion, courts have held such offers to be of little probative value in some circumstances.¹⁴⁰

IV. REASONABLE ROYALTY RECOVERY

A. *The Tension Within § 284*

The damages section of the patent statute, 35 U.S.C. § 284,¹⁴¹ contains two different focal points. First, courts must award patent

137. See FED. R. EVID. 408. The rule provides:

Evidence of (1) furnishing or offering or promising to furnish, or (2) accepting or offering or promising to accept, a valuable consideration in compromising or attempting to compromise a claim which was disputed as to either validity or amount, is not admissible to prove liability for or invalidity of the claim or its amount. . . . This rule . . . does not require exclusion when the evidence is offered for another purpose, such as proving bias or prejudice of a witness, negating a contention of undue delay, or proving an effort to obstruct a criminal investigation or prosecution.

Id.

138. See, e.g., *Deere & Co. v. International Harvester Co.*, 710 F.2d 1551, 1554, 218 U.S.P.Q. (BNA) 481, 483 (Fed. Cir. 1983) (noting that parties negotiated license agreement while litigation was imminent); *Devex Corp. v. General Motors Corp.*, 667 F.2d 347, 362, 212 U.S.P.Q. (BNA) 643, 656 (3d Cir. 1981) (noting that licensing offer was motivated in part by desire to avoid further extensive litigation); *Pitcairn*, 547 F.2d at 1116-19, 192 U.S.P.Q. (BNA) at 618 (rejecting plaintiff's objection that established royalty rate was based on licensing agreement that was compromise to avoid litigation).

139. See *Deere*, 710 F.2d at 1556-57, 218 U.S.P.Q. (BNA) at 485-86 (asserting that rule 408 does not apply to offers to license uncontested patents, but rather is limited to actual disputes over existing claims).

140. See *id.* at 1557, 218 U.S.P.Q. (BNA) at 486 (affirming district court holding that license secured by single, minor competitor did not necessarily establish amount of damages award). The Federal Circuit held in *Deere* that where the district court had excluded from evidence a license under the patent in suit negotiated in the absence of controversy and an offer, made before the controversy erupted, to license the patent in suit to the infringer, such exclusions were erroneous. *Id.* The court found the error to be harmless, however, noting that in the first instance, the license was negotiated against a backdrop of continuing litigation against others, and in the second instance, the offer had been made when the patent was untested and of uncertain validity. *Id.*; see also *Dynamics Corp. of Am. v. United States*, 5 Cl. Ct. 591, 606, 223 U.S.P.Q. (BNA) 1308, 1317 (1984) (giving no evidentiary weight to license offers and settlements made during actual dispute between parties); *Hanson v. Alpine Valley Ski Area, Inc.*, 718 F.2d 1075, 1078-79, 219 U.S.P.Q. (BNA) 679, 682 (Fed. Cir. 1983) (finding that offers to license were insufficient to determine established royalty because offers were made subsequent to infringement and ensuing litigation) (quoting *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1164 n.11, 197 U.S.P.Q. (BNA) 726, 736 n.11 (6th Cir. 1978)).

141. See *supra* note 19 (quoting 35 U.S.C. § 284 in pertinent part).

claimants "damages adequate to compensate for the infringement" of their patents.¹⁴² Second, such awards must be "in no event less than a reasonable royalty for the use made of the invention by the infringer."¹⁴³ The first focus is clearly on the harm done to patent owners; they are the ones who are entitled to be compensated. When applying the minimum damages standard of reasonable royalty, however, the statute indicates that such reasonable royalty is for the use made of the invention by the infringer.¹⁴⁴ The statute's second focus thus bears on value to the infringer and is seemingly unrelated to the need to compensate the patent owner stressed in the first focus. In the realm of reasonable royalty, trial evidence commonly centers around the value of the patented invention in the hands of the defendant.¹⁴⁵ However, when the case is being tried on a damage basis other than reasonable royalty, the evidentiary focus is instead on the harm to the plaintiff and on what will be required to compensate for that harm.¹⁴⁶

Practitioners accustomed to thinking of a reasonable royalty as being substantially less than any arguable lost profits of the patentee may find that such a supposition is no longer true. It is altogether possible in certain cases that a reasonable royalty based on the value of the invention to the defendant actually exceeds any demonstrable pecuniary harm to the patent owner.¹⁴⁷ For example, suppose the patent owner is an upstart company with no significant customer base. Its expenses are apt to be high, and its prices may have to be low for market entry purposes. The company's profit is accordingly relatively small. Suppose the infringement is by a large, well-known company and that the infringing activities are ongoing on the date the patent issues. If a profit sharing approach is taken to the setting

142. 35 U.S.C. § 284 (1988).

143. *Id.*

144. *Id.*

145. *See, e.g.,* *Serpentix Conveyor Corp. v. Roth*, 726 F. Supp. 282, 285-86, 15 U.S.P.Q.2d (BNA) 1074, 1076 (D. Colo. 1989) (recognizing substantial value of patent to infringer but awarding nominal reasonable royalty of only one dollar because infringer had not actually manufactured or sold infringing product); *Fromson v. Western Litho Plate & Supply Co.*, 670 F. Supp. 861, 869, 5 U.S.P.Q.2d (BNA) 1327, 1334 (E.D. Mo. 1987) (basing damage award on finding that one-third of profits realized by infringer were likely attributable to patent owner's invention); *Bandag Inc. v. Gerrard Tire Co.*, 217 U.S.P.Q. (BNA) 769, 770 (W.D.N.C. 1982) (commencing analysis with detailed examination of infringer's extensive commercial use of patent owner's tire-retreading method).

146. *See* *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 507 (1964) (basing damage award on harm done to patent holder due to infringement); *Skenyon & Porcelli*, *supra* note 2, at 763 ("[I]t is always best to think of the 'reasonable royalty' as . . . damages adequate to compensate for the infringement.").

147. *See infra* note 150 and accompanying text (indicating that reasonable royalty award may actually exceed patent owner's claim for lost profits).

of a reasonable royalty,¹⁴⁸ the patentee's royalty will typically be one-fourth to one-third of the profit earned by the infringer.¹⁴⁹ This may well exceed the patentee's expected contemporaneous profits as a vendor of the patented goods. As between the two measures, the statute commands that the reasonable royalty be awarded, as it is the minimum level permitted.¹⁵⁰

B. New Perspective on Reasonable Royalty as a Device To Do Justice

Beginning with Chief Judge Markey's *Panduit* decision in 1978 and threading through to the Federal Circuit's decision in *TWM Manufacturing Co. v. Dura Corp.*¹⁵¹ in 1986, the concept of reasonable royalty and its sometimes underlying notion of "hypothetical negotiation"¹⁵² have been understood not as constituting attempted reconstructions of actual-life negotiations in industrial settings. Rather, these concepts have been regarded primarily as devices to achieve justice in compensating patentees under 35 U.S.C. § 284.¹⁵³

148. See *infra* notes 159-67 and accompanying text (explaining that profit sharing approach is now fully permissible under established case law).

149. See R.B. Young, *An Industry Perspective of Licensing*, in *THE LAW AND BUSINESS OF LICENSING: LICENSING IN THE 1990's* 323, 332 (Paul Bell & Jay Simon eds., 1991) (suggesting that when royalty is based on anticipated profit of licensee, 25-35% of such profit is typical agreed royalty); see also *Syntex (U.S.A.) Inc. v. Paragon Optical, Inc.*, 7 U.S.P.Q.2d (BNA) 1001, 1027 (D. Ariz. 1987) (reporting testimony of Dudley Smith, royalty and patent licensing expert). Smith took the view that as a starting point, with nothing else known about a particular patent other than its existence and the amount of profit expected to be earned by sale or use of the invention covered thereby, one-quarter to one-third of the anticipated profit would be agreed to be a reasonable royalty. *Syntex*, 7 U.S.P.Q.2d (BNA) at 1027. Smith further stated that to proceed forward from that starting point, one should analyze the pertinent *Georgia-Pacific* factors. *Id.*; see *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1123-32, 166 U.S.P.Q. (BNA) 235, 240-47 (S.D.N.Y. 1970) (indicating that *Georgia-Pacific* factors for setting reasonable royalty include: (1) patent owner's policy to maintain and actual maintenance of monopoly in absence of infringement; (2) profitability of patented product; (3) potential for increased profitability of patented product; (4) patent owner's profits from collateral or conveyed sales; (5) substantial profits that infringer could reasonably expect to earn from production of infringed product; and (6) profits that infringer could reasonably expect to earn on collateral or conveyed sales), *modified*, 446 F.2d 295, 170 U.S.P.Q. (BNA) 369 (2d Cir.), *cert. denied*, 404 U.S. 870 (1971).

150. 35 U.S.C. § 284; see also *Fromson v. Western Litho Plate & Supply Co.*, 853 F.2d 1568, 1578 n.18, 7 U.S.P.Q.2d (BNA) 1606, 1616 n.18 (Fed. Cir. 1988) (noting that reasonable royalty can exceed infringer's profit when district court determines that royalty is reasonable under 35 U.S.C. § 284); *Smith Int'l v. Hughes Tool Co.*, 229 U.S.P.Q. (BNA) 81, 93-100 (C.D. Cal. 1986) (awarding reasonable royalty that exceeded lost profits based on precedent of *Panduit* and authority of 35 U.S.C. § 284); *Bandag, Inc. v. Gerrard Tire Co.*, 704 F.2d 1578, 1583, 217 U.S.P.Q. (BNA) 977, 981 (Fed. Cir. 1983) ("[A] reasonable royalty . . . is merely the floor below which damages shall not fall.")

151. 789 F.2d 895, 229 U.S.P.Q. (BNA) 525 (Fed. Cir.), *cert. denied*, 479 U.S. 852 (1986).

152. See *infra* note 153 and accompanying text (explaining hypothetical negotiation methodology, which determines damage award based on presumed theoretical royalty agreement between patent owner and infringer prior to actual infringement).

153. See *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1159, 197 U.S.P.Q. (BNA) 726, 731-32 (6th Cir. 1978). As stated by Chief Judge Markey (sitting by designation):

Determination of a "reasonable royalty" after infringement, like many devices in the

In *Panduit*, Chief Judge Markey clearly indicated that justice requires an infringer to pay more than whatever level of royalty would actually have been negotiated within the industry at the time infringement began.¹⁵⁴ How much more is, of course, difficult to quantify. Unfortunately, district court judges are called on to determine the appropriate royalty in each case, but they have virtually no legal principles on which to base their decisions.¹⁵⁵ With the help of the *Panduit* test, however, courts began to recognize that industry-accepted license terms were generally inadequate to provide just compensation to a patentee after litigation.¹⁵⁶

Other cases have stated the theme that "hypothetical negotiation" is really just a device to do justice.¹⁵⁷ In line with this theme, the

law, rests on a legal fiction. Created in an effort to "compensate" when profits are not provable, the "reasonable royalty" device conjures a "willing" licensor and licensee, who like the Ghosts of Christmas Past, are dimly seen as "negotiating" a "license." There is, of course, no actual willingness on either side, and no license to do anything, the infringer being normally enjoined . . . from further manufacture, use, or sale of the patented product.

Id. at 1159, 197 U.S.P.Q. (BNA) at 732. Judge Markey also pointed out in *Panduit* the injustice of treating a reasonable royalty as equal to what would have actually been negotiated in the pertinent industry:

The setting of a reasonable royalty after infringement cannot be treated, as it was here, as the equivalent of ordinary royalty negotiations among truly "willing" patent owners and licensees. That view would constitute a pretense that the infringement never happened. It would also make an election to infringe a handy means for competitors to impose a "compulsory license" upon every patent owner.

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 [or she] 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.

Id. at 1158, 197 U.S.P.Q. (BNA) at 731 (citations omitted).

154. See *Panduit*, 575 F.2d at 1158, 197 U.S.P.Q. (BNA) at 731 (stating that failure to assign reasonable royalty greater than "negotiated" royalty would create pretense that infringement did not occur).

155. See, e.g., *Serpentix Conveyor Corp. v. Roth*, 726 F. Supp. 282, 284, 15 U.S.P.Q.2d (BNA) 1074, 1075 (D. Colo. 1989) (stating that determination of damage award is based on particular facts of each case); *McDermott v. Omid Int'l*, 723 F. Supp. 1228, 1235, 13 U.S.P.Q.2d (BNA) 1147, 1152 (S.D. Ohio 1988) (asserting that increase in amount of damages and weighing of factors used to determine increase is left to court's discretion); see also *Stickle v. Heublein, Inc.*, 716 F.2d 1550, 1563, 219 U.S.P.Q. (BNA) 377, 387 (Fed. Cir. 1983) (leaving determination as to amount of increase over industry norm to "sound discretion" of trial court).

156. See, e.g., *Radio Steel & Mfg. Co. v. MTD Prods., Inc.*, 788 F.2d 1554, 1557, 229 U.S.P.Q. (BNA) 431, 433 (Fed. Cir. 1986) (affirming reasonable royalty award of 10%, despite projected industry standard of 6%); *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 615-17, 222 U.S.P.Q. (BNA) 654, 664 (Fed. Cir.) (affirming 33% royalty in case where industry standard ranged from 3% to 10%), cert. denied, 469 U.S. 1038 (1984); *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1535 (D. Mass. 1990) (setting reasonable royalty award that exceeded industry standard by more than 50%).

157. See *infra* notes 159-71 and accompanying text (documenting cases where hypothetical negotiation has been used to calculate damage awards that substantially exceed typical royalty agreements negotiated prior to infringement).

Federal Circuit has frequently taken the opportunity to reaffirm *Panduit's* holding that an adjudicated infringer must pay more than the industry norm in patent damages.¹⁵⁸ The court has given great force to its concept of using hypothetical negotiation not as a mirror of industry standards, but as a device to aid the cause of justice. In what is now a long line of cases, the Federal Circuit has affirmed awards substantially higher than would have been negotiated under industry norms. For example, in *Radio Steel & Manufacturing Co. v. MTD Products, Inc.*,¹⁵⁹ the court affirmed an award of a 10% reasonable royalty despite evidence establishing that the infringer in fact expected a net profit of only 6%.¹⁶⁰ And in *Bio-Rad Laboratories, Inc. v. Nicolet Instrument Corp.*,¹⁶¹ the court affirmed a 33% royalty despite an industry standard royalty of only 3-10%.¹⁶²

In terms of raw dollars involved, *Polaroid Corp. v. Eastman Kodak Co.*¹⁶³ is perhaps the most important decision on this point. In setting a reasonable royalty for those Kodak sales for which Polaroid was unable to prove a lost profits causal link, the court correctly awarded a reasonable royalty.¹⁶⁴ That royalty was set at 10%,¹⁶⁵ which amounted to "slightly more than sixty percent of Kodak's an-

158. See, e.g., *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 899-900, 229 U.S.P.Q. (BNA) 525, 527-28 (Fed. Cir.) (affirming special master's royalty award of 30% where industry standard net profit ranged from 6.56% to 12.5%), cert. denied, 479 U.S. 852 (1986). In this important decision, the court reasserted *Panduit's* language:

That [the patentee] might have agreed to a lesser royalty is of little relevance, for to look only at that question would be to pretend that the infringement never happened. "It would also make an election to infringe a handy means for competitors to impose a 'compulsory license' policy upon every patent owner." The willing licensee/licensor approach must be flexibly applied as "a device in the aid of justice."

Id. at 900, 229 U.S.P.Q. (BNA) at 528 (quoting *Panduit*, 575 F.2d at 1158, 197 U.S.P.Q. (BNA) at 731).

159. 788 F.2d 1554, 229 U.S.P.Q. (BNA) 431 (Fed. Cir. 1986).

160. *Radio Steel & Mfg. Co. v. MTD Prods., Inc.*, 788 F.2d 1554, 1557, 229 U.S.P.Q. (BNA) 431, 433 (Fed. Cir. 1986).

161. 739 F.2d 604, 222 U.S.P.Q. (BNA) at 654 (Fed. Cir.), cert. denied, 469 U.S. 1038 (1984).

162. *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 615-17, 222 U.S.P.Q. (BNA) 654, 664 (Fed. Cir.), cert. denied, 469 U.S. 1038 (1984).

163. 16 U.S.P.Q.2d (BNA) 1481 (D. Mass. 1990).

164. See *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1525-41 (D. Mass. 1990). It is now well settled that such splitting of the damages into lost profits, where proved, and reasonable royalty as to the remainder, is entirely proper. See, e.g., *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1577, 12 U.S.P.Q.2d (BNA) 1026, 1028 (Fed. Cir. 1989) ("[T]he award may be split between lost profits as actual damages to the extent they are proven and a reasonable royalty for the remainder."), cert. denied, 493 U.S. 1022 (1990); *Datascope Corp. v. SMEC, Inc.*, 879 F.2d 820, 826-27, 11 U.S.P.Q.2d (BNA) 1321, 1326 (Fed. Cir. 1989) (approving damage award calculation based on lost profits on domestic sales and reasonable royalty on foreign sales); *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 898, 229 U.S.P.Q. (BNA) 525, 527 (Fed. Cir.) (noting special master's calculation based on fixed royalty and proven lost profits), cert. denied, 479 U.S. 852 (1986).

165. *Polaroid*, 16 U.S.P.Q.2d (BNA) at 1535.

anticipated profits.”¹⁶⁶ This figure was selected even though prior licenses between the parties bore royalties no higher than 2.5%, with the average being 1.7%, and Polaroid’s average license rate to others was only 4.9%.¹⁶⁷

Judge Mazzone loosely explained the more-than-doubling approach undertaken in *Polaroid* as a fair composite based on the analytical approach¹⁶⁸ and the hypothetical negotiation approach to reasonable royalty.¹⁶⁹ Viewed in this way, the outcome seems hardly more than a seat-of-the-pants determination, resulting in “reasonable” royalties for Kodak of some \$207 million *before* interest.¹⁷⁰ Interest payments more than doubled the award figure.¹⁷¹ This “reasonable royalty” award is perhaps more rationally viewed as a largely discretionary decision that was based on the so-called “extra” royalty imposed by the *Panduit* decision on infringers after trial.¹⁷² Unfortunately, this quasi-punitive aspect of *Panduit* has not been further developed in the law, thus leaving district judges with essentially no guidance on the critical problem posed by *Panduit*: how much more should infringers be made to pay after judgment, as compared to a supposed royalty agreement made in the absence of an actual infringement?

These developments caused Professor Donald Chisum to remark:

Courts give weight to the licensing customs in the industry and actual licenses on comparable patents in determining both the royalty rate and the base for the reasonable royalty *However, this factor is rarely given decisive or even substantial effect due to the generally unique character of patented inventions and of the circumstances under which they are developed and exploited.*¹⁷³

The real reason for the low significance given to industry custom is probably not the unique-circumstances rationale advanced by Professor Chisum.¹⁷⁴ Rather, the cases reveal a practical concept of

166. *Id.*

167. *Id.* at 1534-35.

168. See *infra* notes 200-206 and accompanying text (explaining theory and application of analytical approach).

169. *Polaroid*, 16 U.S.P.Q.2d (BNA) at 1535 (discussing both analytical and hypothetical negotiation approaches and concluding that such heterogeneous analysis will result in fair compensation of patent owners).

170. *Id.*

171. *Id.* at 1541.

172. See *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1158, 197 U.S.P.Q. (BNA) 726, 731 (6th Cir. 1978) (explaining that setting of reasonable royalty after infringement cannot be treated as equivalent of ordinary royalty negotiations, lest compulsory license ensue).

173. 5 CHISUM, *supra* note 2, § 20.03[3] (emphasis added).

174. 5 CHISUM, *supra* note 2, § 20.03[3] (noting unique character of patented inventions and their development).

compensation for wrongdoing and a sensed need to discourage infringement, as opposed to the limited or even nonexistent public policy value of tracking industry licensing practices that emerged in an environment of significant uncertainty about validity and infringement.

C. Driven by the Desire To Achieve Just Compensation, the "Hypothetical Negotiation" Is Overlaid with Artificial Premises

The list of justice-oriented premises that courts have now artificially encrusted upon the concept of hypothetical negotiation causes one to wonder whether the concept has outlived its usefulness. Consider the following artificial suppositions that are now imposed, for policy reasons, on what used to be viewed as an actual industry license negotiation:

- The patent is irrebuttably known to be valid at the time infringement commences.¹⁷⁵ In reality, there is always substantial doubt about patent validity, particularly at a prelitigation licensing juncture, because not all of the prior art is known.¹⁷⁶ Even if the prior art is known, the courts' thinking about the art is not known.
- Infringement is irrebuttably known.¹⁷⁷ In real life, this supposition is rarely true. With the vagaries of claim interpretation,

175. See, e.g., *Studiengesellschaft Kohle m.b.H. v. Dart Indus., Inc.*, 862 F.2d 1564, 1570, 9 U.S.P.Q.2d (BNA) 1273, 1279-80 (Fed. Cir. 1988) (citing trial court's recognition that in hypothetical negotiations, unquestionably valid patent is presumed); *Trio Process Corp. v. L. Goldstein's Sons, Inc.*, 533 F.2d 126, 129, 189 U.S.P.Q. (BNA) 561, 564 (3d Cir. 1976) (declaring that in hypothetical negotiation, both parties are assumed to agree that patent is valid and would be respected by hypothetical licensee); *General Motors Corp. v. Blackmore*, 53 F.2d 725, 729 (6th Cir. 1931) (stating that reasonable royalty is premised on hypothetical assumption that patent was valid and would be respected).

176. See *Kimberly-Clark Co. v. Johnson & Johnson & Personal Prods. Co.*, 745 F.2d 1437, 1453, 223 U.S.P.Q. (BNA) 603, 614 (Fed. Cir. 1984) ("[T]he real meaning of 'prior art' in legal theory . . . is knowledge that is available, including what would be obvious from it, at a given time, to a person of ordinary skill in an art."); see also 2 CHISUM, *supra* note 2, § 5.04[1] (noting that in most cases, "perfect knowledge" of prior art is unattainable).

177. See, e.g., *Wallace Business Forms, Inc. v. Uarco Inc.*, No. 80-C-3397, 1988 U.S. Dist. LEXIS 11191, at *18 (N.D. Ill. Sept. 29, 1988) (noting that hypothetical negotiations must acknowledge that infringement has occurred); *Dynamics Corp. of Am. v. United States*, 5 Cl. Ct. 591, 607, 223 U.S.P.Q. (BNA) 1308, 1317 (1984) (indicating that attempted settlements and negotiations between parties concerning infringement could not have occurred during hypothetical negotiations). The reasoning of these cases appears to follow closely the court's thinking in *Panduit*, wherein Chief Judge Markey remarked: "The setting of a reasonable royalty after infringement cannot be treated, as it was here, as the equivalent of ordinary royalty negotiations among truly 'willing' patent owners and licensees. *That view would constitute a pretense that the infringement never happened.*" *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1158, 197 U.S.P.Q. (BNA) 726, 731 (6th Cir. 1978) (emphasis added). The court thus was setting forth the philosophy that in hypothetical negotiations for setting a reasonable royalty, the trial court must take account of the now-known fact of infringement, and attribute that mentality to the supposed "negotiating" parties. *Id.*

prosecution history estoppel, and so on, infringement is seldom "known" short of trial and appeal, except in cases in which it is stipulated.

- The patentee is willing to issue a license.¹⁷⁸ Again, in real life, the patentee is frequently not willing to do this. In fact, *Georgia-Pacific Corp. v. United States Plywood Corp.*,¹⁷⁹ the leading case explicating the willing-licensor/willing-licensee rule, indicates that one of the factors to be considered in setting a reasonable royalty is whether or not the patentee had an established policy of refusing to license his or her patent.¹⁸⁰ A patentee's documented unwillingness leads to a higher reasonable royalty than would have been awarded had the patentee been freely willing to license the patent, presumably by an amount sufficient to render him or her willing to grant the license.¹⁸¹
- The licensee is irrebuttably presumed to be willing to take a li-

178. See, e.g., *Horvath v. McCord Radiator & Mfg. Co.*, 100 F.2d 326, 335, 40 U.S.P.Q. (BNA) 394, 403 (6th Cir. 1938) ("In fixing damages . . . against an infringer, the sum allowed should be reasonable and that which would be accepted by a prudent licensee who wished to obtain a license but was not so compelled and a prudent patentee, who wished to grant a license but was not so compelled."), cert. denied, 308 U.S. 581 (1939). Several pre-*Panduit* cases have followed the *Horvath* rule. See *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1121-22, 166 U.S.P.Q. (BNA) 235, 239 (S.D.N.Y. 1970) (finding willing buyer/willing seller rule set forth in *Horvath* applicable to case at bar), modified, 446 F.2d 295, 170 U.S.P.Q. (BNA) 369 (2d Cir.), cert. denied, 404 U.S. 870 (1971); *Union Carbide Corp. v. Graver Tank & Mfg. Co.*, 282 F.2d 653, 669, 127 U.S.P.Q. (BNA) 3, 17 (7th Cir. 1960) (citing *Horvath's* willing buyer/willing seller rule with approval), cert. denied, 365 U.S. 812 (1961).

179. 318 F. Supp. 1116, 166 U.S.P.Q. (BNA) 235 (S.D.N.Y. 1970), modified, 446 F.2d 295, 170 U.S.P.Q. (BNA) 369 (2d Cir.), cert. denied, 404 U.S. 870 (1971).

180. See *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120, 166 U.S.P.Q. (BNA) 235, 245-46 (S.D.N.Y. 1970) (recognizing that licensor's effort to preserve patent monopoly by refusing to grant licenses or by granting licenses under special conditions is relevant to determination of reasonable royalty), modified, 446 F.2d 295, 170 U.S.P.Q. (BNA) 369 (2d Cir.), cert. denied, 404 U.S. 870 (1971).

181. Some cases can be read to suggest that real-life willingness or unwillingness on the part of either party should have no role in reasonable royalty determinations pursuant to the hypothetical negotiation approach. In *Hanson v. Alpine Valley Ski Area, Inc.*, 718 F.2d 1075, 1081, 219 U.S.P.Q. (BNA) 679, 684 (Fed. Cir. 1983), the court, responding to an argument by the defendant that he would not have agreed to a royalty so high as that imposed by the district court, pointed out that the actual unwillingness of a prospective real-life licensee is not controlling. *Id.* In *Tektronix, Inc. v. United States*, 552 F.2d 343, 349, 193 U.S.P.Q. (BNA) 385, 391-92 (Ct. Cl. 1977), cert. denied, 439 U.S. 1048 (1978), the court noted that the willing buyer/willing seller concept "does not depend on the actual willingness of the parties to the lawsuit to engage in such negotiations." *Id.* The court in *Panduit*, 575 F.2d at 1159, 197 U.S.P.Q. (BNA) at 732, pointedly remarked that "[t]here is, of course, no actual willingness on either side." *Id.*

A better interpretation of these cases is that the unwillingness of one party or the other to agree to certain terms in actual negotiations does not prevent those same terms from being held as a "reasonable royalty" for infringement damages purposes. See *Panduit*, 575 F.2d at 1158-59, 197 U.S.P.Q. (BNA) at 731-32 (ruling that infringer simply has to pay more than ordinarily negotiated rate).

cense.¹⁸² As all litigating lawyers know, many defendants are unwilling to take a license at any price other than nuisance value or some fraction of probable litigation costs.

- All relevant business facts are deemed known to both parties.¹⁸³ As people experienced in patent licensing are aware, this supposition is virtually never the case. Prospective licensees tend to carefully guard against revealing their concept of the actual value of a license, lest they suffer in the negotiations because of making such a revelation.

One of the most interesting extensions of this last artificial aspect of hypothetical negotiation is the continuing trend of courts to allow hypothetical negotiators to see into the future. The permissibility of having a crystal ball at the bargaining table dates back to the Supreme Court's 1933 decision in *Sinclair Refining Co. v. Jenkins Petroleum Process Co.*¹⁸⁴ Justice Cardozo's elegantly written opinion, while

182. See, e.g., *Datascope Corp. v. SMEC, Inc.*, 879 F.2d 820, 828, 11 U.S.P.Q.2d (BNA) 1321, 1326 (Fed. Cir. 1989) (calculating damage award based on hypothesized negotiation between willing licensee and licensor); *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1576, 12 U.S.P.Q.2d (BNA) 1026, 1028 (Fed. Cir. 1989) (assuming licensee would have paid for license, despite licensee's failure to offer evidence of what it would have paid in actual negotiated agreement), *cert. denied*, 493 U.S. 1022 (1990); *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 898, 229 U.S.P.Q. (BNA) 525, 526 (Fed. Cir.) (noting that both licensor and licensee agreed to calculation of damage award based on hypothetical negotiation), *cert. denied*, 479 U.S. 852 (1986); *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1534 (D. Mass. 1990) (finding that history of cooperation and sharing of resources between licensor and licensee indicates willingness to enter into agreement).

183. See *Georgia-Pacific*, 318 F. Supp. at 1122, 166 U.S.P.Q. (BNA) at 240 (quoting infringer's counsel's statement that hypothetical negotiation contemplates "marshaling of all of the pertinent facts which, like cards dealt face up, are for all to see"); see also *Datascope Corp. v. SMEC, Inc.*, 678 F. Supp. 457, 463, 5 U.S.P.Q.2d (BNA) 1963, 1968 (D.N.J. 1988) (noting that court must assume both parties were privy to all pertinent information), *aff'd in relevant part*, 879 F.2d 820, 11 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1989); *State Indus. Inc. v. Mor-Flo Indus., Inc.*, 8 U.S.P.Q.2d 1971, 1980 (E.D. Tenn. 1988) (quoting *Datascope* policy of party privy), *aff'd in relevant part*, 883 F.2d 1573, 12 U.S.P.Q.2d (BNA) 1026 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990); *Smith Int'l, Inc. v. Hughes Tool Co.*, 229 U.S.P.Q. (BNA) 81, 99 (C.D. Cal. 1986) (asserting that court must assume parties are mutually informed of all relevant facts).

184. 289 U.S. 689 (1933). Justice Cardozo wrote:

An imaginary bid by an imaginary buyer, acting upon the information available at the moment of the breach, is not the limit of recovery where the subject of the bargain is an undeveloped patent. Information at such a time might be so scanty and imperfect that the offer would be nominal. The promisee of the patent has less than fair compensation if the criterion of value is the price that he would have received if he had disposed of it at once, irrespective of the value that would have been uncovered if he had kept it as his own But a different situation is presented if years have gone by before the evidence is offered. Experience is then available to correct uncertain prophecy. Here is a book of wisdom that courts may not neglect. We find no rule of law that sets a clasp upon its pages, and forbids us to look within To correct uncertain prophecies in such circumstances is not to charge the offender with elements of value non-existent at the time of his offense. It is to bring out and expose to light the elements of value that were there from the beginning.

Sinclair Ref. Co. v. Jenkins Petroleum Process Co., 289 U.S. 689, 698-99 (1933).

highlighting the need for justice to be done, serves as a reminder of just how far the hypothetical negotiation analysis was removed from the reality of patent licensing, even at that early date. In the most cited of all hypothetical negotiation cases, *Georgia-Pacific*, the district court, while not alluding to the crystal ball thesis of *Sinclair*,¹⁸⁵ nevertheless used the infringer's actual profits as a sort of check, to make sure that the hypothetically negotiated royalty rate was in the correct range.¹⁸⁶ On appeal, the Second Circuit did likewise, taking the actual profits as the base from which to modify the district court's award slightly.¹⁸⁷

The Federal Circuit enunciated its accord with *Sinclair*'s crystal ball methodology in its 1984 decision in *Trans-World Manufacturing Corp. v. Al Nyman & Sons, Inc.*,¹⁸⁸ where the court found error in excluding evidence of a patent infringer's actual profits.¹⁸⁹ And the court expanded on the value of looking into the future in setting a reasonable royalty after infringement in *Fromson v. Western Litho Plate & Supply Co.*¹⁹⁰ In *Fromson*, the court explained the methodology of hypothetical negotiation analysis.¹⁹¹ The court then remanded the damages issue to the district court, noting that within its discretion,

185. See *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1123-43, 166 U.S.P.Q. (BNA) 235, 240-55 (S.D.N.Y. 1970) (failing to mention *Sinclair*'s forward-looking approach to patent damages), *modified*, 446 F.2d 295, 170 U.S.P.Q. (BNA) 369 (2d Cir.), *cert. denied*, 404 U.S. 870 (1971).

186. *Id.* at 1123, 166 U.S.P.Q. (BNA) at 240. *Georgia-Pacific* was, however, not the first famous case on either reasonable royalty or the hypothetical negotiation methodology for setting such a royalty. The general concept of reasonable-royalty recovery dates back at least to *United States Frumentum Co. v. Lauhoff*, 216 F. 610 (6th Cir. 1914). The court in that case determined that a patentee who was unable to prove lost profits should not be relegated to injunctive relief alone, but that damages should be awarded based on "what plaintiff's patent property was, to what extent defendant has taken it, its usefulness and commercial value as shown by its advantages over other things and by the extent of its use." *Id.* at 617; see also *Dowagiac Mfg. Co. v. Minnesota Moline Plow Co.*, 235 U.S. 641, 648 (1915) (permitting patentee who was unable to show lost profits or established royalty to "show the value by proving what would have been a reasonable royalty, considering the nature of the invention, its utility and advantages, and the extent of the use involved").

187. *Georgia-Pacific*, 446 F.2d at 299-300, 170 U.S.P.Q. (BNA) at 371-74.

188. 750 F.2d 1552, 224 U.S.P.Q. (BNA) 259 (Fed. Cir. 1984).

189. *Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc.*, 750 F.2d 1552, 1556-58, 224 U.S.P.Q. (BNA) 259, 268-70 (Fed. Cir. 1984) (disagreeing with district court's exclusion as evidence of infringer's profits from sale of eyeglasses for use in determining reasonable royalty).

190. 853 F.2d 1568, 7 U.S.P.Q.2d (BNA) 1606 (Fed. Cir. 1988).

191. See *Fromson v. Western Litho Plate & Supply Co.*, 853 F.2d 1568, 1575, 7 U.S.P.Q.2d (BNA) 1606, 1613 (Fed. Cir. 1988). According to the court:

[The hypothetical negotiation analysis] encompasses fantasy and flexibility; fantasy because it requires a court to imagine what warring parties would have agreed to as willing negotiators; flexibility because it speaks of negotiations as of the time infringement began, yet permits and often requires a court to look to events and facts that occurred thereafter and that could not have been known to or predicted by the hypothesized negotiators.

the district court might set the reasonable royalty as a percentage of the infringer's actual profits.¹⁹²

Unfortunately, the Federal Circuit has steadfastly refused to allow defendants the same privilege of the crystal ball in order to reduce their liability for reasonable royalties. In *Radio Steel & Manufacturing Co. v. MTD Products, Inc.*,¹⁹³ *Weinar v. Rollform, Inc.*,¹⁹⁴ and *Hanson v. Alpine Valley Ski Area, Inc.*,¹⁹⁵ the defendant-infringers urged the court to weigh their actual profits more heavily than previous jurisprudence allowed.¹⁹⁶ They complained that the reasonable royalties assessed against them should be reduced because their actual profits were less than anticipated.¹⁹⁷ In all three cases, however, the Federal Circuit rejected that argument.¹⁹⁸

In view of the increasing number of assumptions engrafted onto the underlying fiction of hypothetical negotiation, the Federal Circuit should consider whether the time has come to abolish the fiction altogether and to relegate it, as *Georgia-Pacific* did, to being just one of the factors considered by a court in calculating a reasonable royalty.¹⁹⁹ The engrafted "assumptions" of validity, infringement,

192. See *id.* at 1578, 7 U.S.P.Q.2d (BNA) at 1615-16 (holding that district court has wide discretion to determine fair royalty, including liberty to consider infringer's actual profits, as it deems appropriate).

193. 788 F.2d 1554, 229 U.S.P.Q. (BNA) 431 (Fed. Cir. 1986).

194. 744 F.2d 797, 223 U.S.P.Q. (BNA) 369 (Fed. Cir. 1984), *cert. denied*, 470 U.S. 1084 (1985).

195. 718 F.2d 1075, 219 U.S.P.Q. (BNA) 679 (Fed. Cir. 1983).

196. *Radio Steel & Mfg. Co. v. MTD Prods., Inc.*, 788 F.2d 1554, 1557, 229 U.S.P.Q. (BNA) 431, 433 (Fed. Cir. 1986); *Weinar v. Rollform, Inc.*, 744 F.2d 797, 807, 223 U.S.P.Q. (BNA) 369, 375 (Fed. Cir. 1984), *cert. denied*, 470 U.S. 1084 (1985); *Hanson v. Alpine Valley Ski Area, Inc.*, 718 F.2d 1075, 1081, 219 U.S.P.Q. (BNA) 679, 684 (Fed. Cir. 1983).

197. *Radio Steel*, 788 F.2d at 1557, 229 U.S.P.Q. (BNA) at 433; *Weinar*, 744 F.2d at 807, 223 U.S.P.Q. (BNA) at 375; *Hanson*, 718 F.2d at 1081, 219 U.S.P.Q. (BNA) at 684.

198. See *Radio Steel*, 788 F.2d at 1557, 229 U.S.P.Q. (BNA) at 433 (noting that reasonable royalty is not based on infringer's actual profit); *Weinar*, 744 F.2d at 807, 223 U.S.P.Q. (BNA) at 375 (concluding that infringer's failure to realize profit is irrelevant to reasonable royalty calculation); *Hanson*, 718 F.2d at 1081, 219 U.S.P.Q. (BNA) at 684 (clarifying that infringer's profit factor is not calculated based on hindsight evaluation of what actually occurred). But see *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 895 F.2d 1403, 1407-08, 13 U.S.P.Q.2d (BNA) 1871, 1874-75 (Fed. Cir. 1990) (rejecting patentee's damages appeal and criticizing plaintiff's expert witness for, *inter alia*, being ignorant of actual profit levels involved after date of hypothetical negotiation). The Federal Circuit rejected the witness' statement that courts do not consider actual later profits in hypothetical negotiations as being contrary to *Trans-World Manufacturing, id.* at 1407-08, 13 U.S.P.Q.2d (BNA) at 1874-75, in which the court stated that the infringer's actual profits are considered in calculating the reasonable royalty. *Trans-World Mfg. Co. v. Al Nyman & Sons, Inc.*, 750 F.2d 1552, 1568, 224 U.S.P.Q. (BNA) 259, 269 (Fed. Cir. 1984). This result may suggest the court's willingness to allow glimpses into the future on a two-way basis.

199. See *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1123-43, 166 U.S.P.Q. (BNA) 235, 240-55 (S.D.N.Y. 1970) (basing reasonable royalty calculation on consideration of numerous factors including actual and expected profits, profits generated by collateral sales, existing licenses comparable to infringement dispute, and unique nature and facts of infringement), *modified*, 446 F.2d 295, 170 U.S.P.Q. (BNA) 369 (2d Cir.), *cert. denied*, 404 U.S. 870 (1971).

and business information would be better viewed as reminders to the decisionmaker on reasonable royalty to help him or her reach a just result, rather than as facts artificially deemed "known" at an artificial negotiation. Accordingly, the court should examine the business realities at the time infringement began and subsequently, independent of any theory that a hypothetical negotiation has occurred. Validity and infringement having been truly determined in the trial, and the legal doctrine having been noted that the defendant has to pay more than the usually negotiated rate, these factors need not be considered "irrebuttable assumptions" in an unreal license negotiation. They stand on their own as factors affecting the real decision on a just royalty.

Finally, the fictitious assumptions of willingness to grant and take a license should no longer be indulged. Rather, the degree of willingness or unwillingness of a patentee should be weighed in determining what royalty rate is fair and just. In other words, if a patentee had a policy of not licensing his or her patent, that factor would tend to increase an award. This increase would not occur because of any fictional assumptions, but because the patentee had actually been harmed to a greater degree than some other patentee who, for other reasons, was in fact willing to license his or her patent.

D. Rise of the Analytical Approach

Cases applying the so-called "analytical approach" provide examples of how things might work if the hypothetical negotiation doctrine were jettisoned from Federal Circuit jurisprudence. A vestige of hypothetical negotiation remains under the analytical approach where an infringer's anticipated net profit margin is adopted as the starting point for the measurement of patent damages. From this figure, some "standard" or "acceptable" level of profit is subtracted and left to the infringer; the remaining portion of the anticipated profit is awarded to the patentee as a reasonable royalty.²⁰⁰ The methodology thus shifts from the fiction of hypothesizing what would have been negotiated in an imaginary licensing environment to the reality of determining what should be paid as fair compensa-

²⁰⁰ See, e.g., *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 898-902, 229 U.S.P.Q. (BNA) 525, 526-29 (Fed. Cir.) (explaining special master's application of analytical approach), *cert. denied*, 479 U.S. 852 (1986); *Tektronix, Inc. v. United States*, 552 F.2d 343, 349-53, 193 U.S.P.Q. (BNA) 385, 391-94 (Ct. Cl. 1977) (applying *Georgia-Pacific* formula and allocating normal profit to infringer and remainder of gross profit to patent owner); *Georgia-Pacific*, 446 F.2d at 296-300, 170 U.S.P.Q. (BNA) at 370-73 (explaining application of analytical approach).

tion for patent infringement. Thus far, three appellate cases have applied this approach: *Georgia-Pacific*,²⁰¹ *Tektronix, Inc. v. United States*,²⁰² and *TWM Manufacturing Co. v. Dura Corp.*²⁰³

One problem with the analytical approach is that it is presently unclear just when the method can be applied. The Federal Circuit has consistently stated that there is no one correct way to arrive at a reasonable royalty in a given case and has noted that district courts have wide discretion to choose any methodology they wish.²⁰⁴ The problem is that different methodologies can lead to widely varying results²⁰⁵ and district courts are given little guidance on which methodology to select. They are apparently to rely on the "feel" of a given case as it is tried before them.

One of the fears defendants have of the analytical approach is that it usually leads to a much higher royalty than other approaches would yield.²⁰⁶ A possible cure for that problem, in accordance with the above proposal to abolish the fiction of hypothetical negotiation, would be to eliminate the need to set the royalty as of the time infringement began. This timing concept seems to arise out of a supposed need to conduct a hypothetical negotiation. With the recommended abolition of the hypothetical negotiation, there will no longer be any need to fix a royalty at the time infringement be-

201. 446 F.2d 295, 296-300, 170 U.S.P.Q. (BNA) 369, 370-73 (2d Cir.) (deriving infringer's anticipated profit from sales of similar products, subtracting net-profit level of defendant corporation in recent years, and awarding differences as reasonable royalty), *cert. denied*, 404 U.S. 870 (1971).

202. 552 F.2d 343, 349-53, 193 U.S.P.Q. (BNA) 385, 391-94 (Ct. Cl. 1977) (calculating damage award by determining infringer's net profit and assigning net profit to patentee as imaginary royalty).

203. 789 F.2d 895, 898-902, 229 U.S.P.Q. (BNA) 525, 526-29 (Fed. Cir.) (affirming special master's award of 30% royalty based on analytical approach subtracting infringer's usual net profit from its anticipated net profit), *cert. denied*, 479 U.S. 852 (1986).

204. *See infra* note 208 and accompanying text (citing Federal Circuit cases that recognize wide discretion of district court to determine damage awards).

205. For example, consider a hypothetical fact pattern: manufacturing cost savings achieved by defendant through use of the invention are \$1 per unit. Profits earned by that defendant by use of the invention, versus whatever she used before, are \$11 per unit. A reasonable royalty based on the cost savings would be some fraction of \$1 per unit, or else the licensee would have no reason to enter the license agreement. By contrast, a reasonable royalty based on sharing the added profit would typically be around \$3 per unit. *See supra* note 149 (noting views of R.B. Young and Dudley Smith that reasonable royalty based on profit is normally centered near 30% of profits).

206. *See TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 899, 229 U.S.P.Q. (BNA) 525, 527 (Fed. Cir.) (dismissing infringer's argument that inappropriate application of analytical approach yielded "exorbitant" royalty, where infringer failed to demonstrate that application of analytical approach was unreasonable), *cert. denied*, 479 U.S. 852 (1986); *Tektronix, Inc. v. United States*, 552 F.2d 343, 348, 193 U.S.P.Q. (BNA) 385, 390-91 (Ct. Cl. 1977) (rejecting infringer's sliding scale approach to calculating reasonable royalty that would have imposed lesser penalty upon infringer). *But see Georgia-Pacific Corp. v. U.S. Plywood-Champion Papers Inc.*, 446 F.2d 295, 302, 170 U.S.P.Q. (BNA) 369, 373-74 (2d Cir.) (reducing trial court's damage award that precluded infringer from realizing reasonable profit), *cert. denied*, 404 U.S. 870 (1971).

gan. Realistically, there is no reason to do so. Defendants ought to enjoy the benefits of future events when their profit margins turn sour, rather than only allowing consideration of future profits at the behest of patentees, as in present law. The analytical approach, as thus modified, would be a far better determinant of just compensation than is provided by the present hyperfiction of the hypothetical negotiation.

E. Some Unresolved Issues Concerning Reasonable Royalty

Notwithstanding the extensive development of patent damages by the Federal Circuit over the last eight years, several very important questions have yet to be addressed. Foremost among these is the selection of a reasonable royalty approach in a jury trial. The Federal Circuit has pointed out that there is no single or mandatory way to assess a reasonable royalty²⁰⁷ and has consistently left the choice of approach to the sound discretion of the district courts.²⁰⁸ In each of these cases, however, the district court was sitting as trier of fact as well as enunciator of law.²⁰⁹

Presently, the allocation of decisional responsibilities between judge and jury in patent cases is extremely awkward. It seems likely that in order to preserve the right to a trial by jury on damages, the selection of an approach to reasonable royalty calculation must be left to the jury. But how should a judge instruct a jury regarding that calculation? At present, the best that judges can do is read ju-

207. See, e.g., *TWM*, 789 F.2d at 899, 229 U.S.P.Q. (BNA) at 527 (observing that 35 U.S.C. § 284 does not mandate how district court must compute reasonable royalty, only that figure must compensate for infringement).

208. See, e.g., *TWM*, 789 F.2d at 898, 229 U.S.P.Q. (BNA) at 526 (noting that methodology of assessing and computing damages is within discretion of district court); *Yarway Corp. v. Eur-Control USA, Inc.*, 775 F.2d 268, 275, 227 U.S.P.Q. (BNA) 352, 357 (Fed. Cir. 1985) (indicating that district court has considerable discretion in determining damage awards); *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 863, 226 U.S.P.Q. (BNA) 402, 409 (Fed. Cir. 1985) (limiting district court's discretion to award damages that adequately compensate for infringement and are at least equivalent in magnitude to reasonable royalty), *cert. denied*, 475 U.S. 1016 (1986). On this point, the standard of review on appeal is abuse of discretion. See, e.g., *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 756 F.2d 1574, 1581, 225 U.S.P.Q. (BNA) 357, 363 (Fed. Cir. 1985) (stating that infringer bears burden of proving that district court abused its discretion in determining damages); *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 21, 223 U.S.P.Q. (BNA) 591, 598 (Fed. Cir. 1984) (limiting appellate review of damage award to circumstances where trial court abused discretion in selecting method of calculating award).

209. See *TWM*, 789 F.2d at 898, 229 U.S.P.Q. (BNA) at 526 (pointing out that damages were tried to special master reporting to district court); *Yarway*, 775 F.2d at 272, 227 U.S.P.Q. (BNA) at 353 (issuing judgment on findings of fact by district court); *King Instrument*, 767 F.2d at 855, 226 U.S.P.Q. (BNA) at 402 (rendering judgment "following a bench trial"); *Seattle Box*, 756 F.2d at 1578, 1581, 225 U.S.P.Q. (BNA) at 358-59 (noting that decision on remand was by district court findings); *Paper Converting*, 745 F.2d at 14, 223 U.S.P.Q. (BNA) at 593 (reviewing accounting for damages held by district court).

rors the list of *Georgia-Pacific* factors,²¹⁰ tell them to consider whichever ones they deem appropriate in light of the credible evidence, and inform them that they can also consider any other factors that they feel should justifiably go into the determination of a reasonable royalty. There are no current guidelines that indicate how to assess the *Georgia-Pacific* factors, whether or not to apply the analytical approach, or how much future events should influence the so-called hypothetical negotiation. In addition, lawyers are perplexed regarding the extent to which their expert witnesses on damages should be allowed to cite prior reported court cases as bases for their opinions. In the writer's experience, district judges are reluctant to allow testimony on what they regard as either law or results reached in other cases. To indulge that reluctance, however, would exclude the entire history of prior *reasonable* royalty determinations while continuing to admit evidence of prior *actual* licenses, which, under *Panduit*, are an insufficient measure of reasonable royalty.²¹¹ Jurors undoubtedly find these restrictions highly perplexing.

V. THE PROBLEM OF DEDUCTION TAXES FOR WOULD-HAVE-BEEN INCOME TAXES

One of the least understood and most recurrent problems in patent damages involves the question of how, if at all, to account for income taxes that would have accrued against the plaintiff on the lost profits now awarded to him or her as damages for past years of infringement. The fact that a damages award is taxable in the year paid does not really address the problem, for two reasons. First, interest is normally awarded for a period running from each of the infringing years to the date of judgment and will lead to a higher award if tax calculation is deferred to the year of judgment than if an estimated tax is subtracted each year in the damage calculation before accrual of interest.²¹² Second, income tax rates are lower now than in most prior years.²¹³

In cases where the infringement began many years back—ten to

210. See *supra* note 149 and accompanying text (discussing *Georgia-Pacific* factors).

211. See *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1158, 197 U.S.P.Q. (BNA) 726, 731 (6th Cir. 1978) (finding that failure to award reasonable royalty greater than "negotiated" royalty would create pretense that infringement did not occur).

212. See *infra* notes 214-15 and accompanying text (discussing calculation of taxes on lost profits, taking note of lengthy periods of infringement and subsequent effect of greatly increasing damages awards).

213. Compare I.R.C. §§ 1, 11 (1976 & Supp. IV 1981) (listing maximum personal income tax rate of 70% on excess over \$108,300 and maximum corporate rate of 46% on excess over \$100,000) with I.R.C. §§ 1, 11 (1988) (listing maximum personal rate of 38.5% on excess over \$54,000 and maximum corporate rate of 34% on excess over \$75,000).

fifteen years is not uncommon in complex patent cases²¹⁴—the effect of tax-deferred compounding can easily double the size of the judgment.²¹⁵ If the judgment is then to be taxed at today's relatively low rates, a substantial extra benefit accrues to the patentee. This result is not grounded in logic or reason. Courts nevertheless generally refuse to allow any deduction for taxes in damage calculations.²¹⁶ The reasons for this refusal are misplaced.

Courts' reluctance is stated to be based on the Supreme Court's 1968 decision in *Hanover Shoe, Inc. v. United Shoe Machinery Corp.*²¹⁷ In *Hanover Shoe*, the Supreme Court reviewed a court of appeals decision to remand an antitrust case to the district court for the deduction of taxes from a damages award to a corporate plaintiff.²¹⁸ Noting the policy of the Internal Revenue Service to tax damage awards of this type in the year received, the Court upheld the district court's computation, thereby shielding the plaintiff from the supposed dilemma of double taxation.²¹⁹ Courts have generally followed the *Hanover Shoe* rule in patent cases²²⁰ and have even extended the rule to apply to "would-have-been" foreign income

214. See, e.g., *Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1140, 17 U.S.P.Q.2d (BNA) 1828, 1830 (Fed. Cir. 1991) (noting passage of 10 years); *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1476, 16 U.S.P.Q.2d (BNA) 1093, 1094-95 (Fed. Cir. 1990) (noting passage of 14 years between first infringing year and court's damages ruling); *Beatrice Foods Co. v. New England Printing & Lithographing Co.*, 899 F.2d 1171, 1173, 14 U.S.P.Q.2d (BNA) 1020, 1022 (Fed. Cir. 1990) (noting that 16 years passed from first recoverable year to Federal Circuit ruling on damages).

215. See *Hanover Shoe, Inc. v. United Shoe Mach. Corp.*, 392 U.S. 481, 503 (1968) (determining that decreasing plaintiff's damage award by amount of taxes it would have paid during period of infringement would cause double deduction of taxes and leave plaintiff with less income than if infringement had not occurred); see also *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1541 (D. Mass. 1990) (indicating that damage award, subject to both state and federal taxation, should not be based on after-tax royalty figures in order to avoid double taxation).

216. See *infra* notes 220-21 and accompanying text (citing instances where courts have refused to adjust damage awards to accommodate shifting tax rates).

217. 392 U.S. 481 (1968).

218. See *Hanover Shoe*, 392 U.S. at 502-03 (reviewing court of appeals finding that damages suffered by plaintiff were limited to after-tax profits that it had failed to receive).

219. *Id.* at 503. The Court stated that:

[T]o diminish the actual damages by the amount of the taxes that it would have paid had it received greater profits in the years it was damaged would be to apply a double deduction for taxation, leaving [the plaintiff] with less income than it would have had if [the defendant] had not injured it.

Id.

220. See, e.g., *TP Orthodontics, Inc. v. Professional Positioners, Inc.*, 20 U.S.P.Q.2d (BNA) 1017, 1020, 1025-26 (E.D. Wis. 1991) (following precedent of *Hanover Shoe* by refusing to reduce damages award); *Micro Motion, Inc. v. Exac Corp.*, 761 F. Supp. 1420, 1435-36, 19 U.S.P.Q.2d (BNA) 1001, 1014-15 (N.D. Cal. 1991) (refusing to reduce award despite fall in corporate tax rate from 46% in 1985 to 34% in 1989-1990, and noting complication of further reducing state income taxes that would otherwise be assessed); *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1541 (D. Mass. 1990) (noting that award based on post-tax profits could leave patent owner subject to double taxation). No reported case to the contrary has been identified.

taxes.²²¹

The so-called double taxation problem is illusory. The effect of current taxation can be readily adjusted in the award by a procedure known as "grossing up."²²² Under this procedure, a damages award is calculated with appropriate reductions for would-have-been federal and state corporate income taxes in the years in question, including taxes on prejudgment interest accruing in those years. An amount is then added to the award so that when current income taxes are paid, the calculated award will remain intact, and no double taxes will be imposed. This procedure corrects for the effects of lower current tax rates, and also for the taxability of accrued prejudgment interest, on a year-by-year basis. The procedure may have weaknesses in detail if extended too far, such as the difficulty of judging whether the plaintiff would have been able to shelter some of the income. Nevertheless, this point seems minor in comparison to the overall fairness achievable by grossing up. As for the mechanics of recalculating past years' taxes, today's age of computerized tax returns usually makes the calculations quick and straightforward. Unfortunately, courts have not yet accepted the rationality of grossing up, despite the advantages of the procedure.²²³

VI. PREJUDGMENT INTEREST ISSUES

Recent years have seen the solid establishment of the proposition that successful patent-owner litigants are normally entitled to prejudgment interest as part of their damages awards. These years have also borne witness to the problems encountered by district courts in determining the exceptions to that general rule and in deciding on a discretionary basis to select appropriate rates and compounding terms.²²⁴

The basic proposition that prejudgment interest should be

221. See *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1482-83, 16 U.S.P.Q.2d (BNA) 1093, 1100 (Fed. Cir. 1990) (concluding that deduction of British corporate taxes from damages award was improper).

222. This term was coined by counsel for Eastman Kodak Co. in the *Polaroid* damages litigation to characterize the calculation described here.

223. See *TP Orthodontics*, 20 U.S.P.Q.2d (BNA) at 1025-26 (refusing to reduce damage award because tax laws changed between time of injury and time of recovery); *Micro Motion*, 761 F. Supp. at 1435-36, 19 U.S.P.Q.2d (BNA) at 1014-15 (refusing to adjust damage award to compensate for decrease in federal taxation rate during period of infringement); *Polaroid*, 16 U.S.P.Q.2d (BNA) at 1541 (refusing to reduce year-by-year damage accruals for income taxes and then gross-up damage award, because of uncertainty and possibility of under or overcompensation, and determining interest rate after consideration of relevant factors, including infringer's windfall argument).

224. See *infra* notes 228-49 and accompanying text (documenting instances of appellate court review of district court methodologies in assessing prejudgment interest adjustments to damage awards).

awarded to successful patent litigants as a matter of course stems directly from the Supreme Court's ruling in *General Motors Corp. v. Devex Corp.*²²⁵ The Court held that "prejudgment interest should ordinarily be awarded absent some justification for withholding such an award."²²⁶ The Federal Circuit has issued a line of decisions following this general rule, and it is now well settled law.²²⁷ The problem areas that have emerged within the general rule may be grouped into two categories: (1) identifying the exceptions to the *Devex* rule, that is, the cases in which no prejudgment interest will be allowed; and (2) determining the applicable interest rates and compounding terms. A review of appellate decisions over the last three years shows the current state of the law on this subject.

In *Richardson v. Suzuki Motor Co.*,²²⁸ the Federal Circuit reversed the district court's unexplained denial of prejudgment interest on both patent infringement and trade secret misappropriation awards.²²⁹ The court treated the issue in short order, saying only that it saw no "exceptional" circumstances under *Devex* to deny prejudgment interest on the patent claim, and that it could not see any reason why prejudgment interest should be handled differently for the trade secret claim.²³⁰

*Allen Archery, Inc. v. Browning Manufacturing Co.*²³¹ involved a defendant's argument and district court's ruling that interest should be denied because the plaintiff was a mere licensor of the patent, not

225. 461 U.S. 648 (1983).

226. *General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 657 (1983). The Court explained that this would compensate for "the foregone use of the money between the time of infringement and the date of judgment." *Id.* at 656.

227. See, e.g., *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545, 19 U.S.P.Q.2d (BNA) 1432, 1437 (Fed. Cir. 1991) (asserting district judge's discretion to determine prejudgment interest rate); *Allen Archery, Inc. v. Browning Mfg. Co.*, 898 F.2d 787, 791-92, 14 U.S.P.Q.2d (BNA) 1156, 1159-60 (Fed. Cir. 1990) (following *Devex* as general rule and finding abuse of discretion by district court in failing to award prejudgment interest); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1250, 9 U.S.P.Q.2d (BNA) 1913, 1931 (Fed. Cir.) (concluding that "[p]rejudgment interest is the rule governing [patent infringement] award[s]"), *cert. denied*, 493 U.S. 853 (1989); cf. *Lummas Indus., Inc. v. D.M. & E. Corp.*, 862 F.2d 267, 274, 8 U.S.P.Q.2d (BNA) 1983, 1988-89 (Fed. Cir. 1988) (finding reason for withholding prejudgment interest to be exception to rule); *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 807 F.2d 964, 967-70, 1 U.S.P.Q.2d (BNA) 1191, 1194-95 (Fed. Cir. 1986) (determining proper scope of prejudgment interest award), *cert. denied*, 482 U.S. 915 (1987).

228. 868 F.2d 1226, 9 U.S.P.Q.2d (BNA) 1913 (Fed. Cir.), *cert. denied*, 493 U.S. 853 (1989).

229. See *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1250, 9 U.S.P.Q.2d (BNA) 1913, 1931 (Fed. Cir.) (finding no factual basis for withholding prejudgment interest award based on distinction between misappropriated trade secret and patent infringement cases), *cert. denied*, 493 U.S. 853 (1989). For the Federal Circuit's discussion of trade secret issues, see *id.* at 1242-46, 9 U.S.P.Q.2d at 1925-27 (describing trade secret as information used in business that provides opportunity to gain advantage over competitors).

230. *Id.* at 1250, 9 U.S.P.Q.2d (BNA) at 1931.

231. 898 F.2d 787, 14 U.S.P.Q.2d (BNA) 1156 (Fed. Cir. 1990).

a manufacturing entity, and because the plaintiff had agreed to a three-year stay sought by the defendant.²³² In reversing the district court's holding, the Federal Circuit relied on *Devex's* rationale of placing successful plaintiffs in the position they would have occupied absent the patent infringement.²³³ *Allen Archery* was a reasonable royalty case and not a lost profits case, as was *Devex*, but the court perceived no reason to treat royalty plaintiffs differently than lost profits plaintiffs in the context of their being made whole for the lost use of patent royalties.²³⁴ The court therefore excused the three-year stay on the ground that the stay had been mainly sought by the defendant.²³⁵

In *Kalman v. Berlyn Corp.*,²³⁶ an infringer argued that a six-year delay by the plaintiff in bringing suit gave rise to an exception to *Devex*.²³⁷ During the six-year period, however, the plaintiff was engaged in litigation with another defendant, Kimberly-Clark, who was a reseller of the infringer's product.²³⁸ In refusing to find a *Devex* exception, the Federal Circuit relied on the infringer's knowledge, control, and financing of the Kimberly-Clark litigation.²³⁹

Finally, the Federal Circuit found a partial *Devex* exception in *Uniroyal, Inc. v. Rudkin-Wiley Corp.*²⁴⁰ The district court denied prejudgment interest for a four-year period during which the litigation had been stayed upon the original request of the plaintiff and the agreement of the defendant.²⁴¹ The Federal Circuit affirmed the district court's holding without mentioning or attempting to distinguish its *Allen Archery* ruling.²⁴² The cases are perhaps distinguishable, in that

232. *Allen Archery, Inc. v. Browning Mfg. Co.*, 898 F.2d 787, 791, 14 U.S.P.Q.2d (BNA) 1156, 1160 (Fed. Cir. 1990).

233. *See id.* (holding patentee eligible for prejudgment interest despite fact that patentee's business was limited to licensing its patent).

234. *See id.* ("It would be inconsistent with [the *Devex*] rationale to require . . . the district court . . . to consider and determine what use the patentee would have made of the royalty payments it should have received.")

235. *Id.* at 792, 14 U.S.P.Q.2d (BNA) at 1160.

236. 914 F.2d 1473, 16 U.S.P.Q.2d (BNA) 1093 (Fed. Cir. 1990).

237. *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1485-86, 16 U.S.P.Q.2d (BNA) 1093, 1102-03 (Fed. Cir. 1990).

238. *Id.*

239. *See id.* (rejecting infringer's argument that patent owner caused undue delay in prosecution of lawsuit because infringer was fully aware of Kimberly-Clark litigation, and affirming district court's award of prejudgment interest to patent owner, Dr. Kalman).

240. 939 F.2d 1540, 19 U.S.P.Q.2d (BNA) 1432 (Fed. Cir. 1991).

241. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 721 F. Supp. 28, 28 n.1, 13 U.S.P.Q.2d (BNA) 1192, 1202 n.1 (D. Conn. 1989), *aff'd in part and vacated in part*, 939 F.2d 1540, 19 U.S.P.Q.2d (BNA) 1432 (Fed. Cir. 1991).

242. *See Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1546, 19 U.S.P.Q.2d (BNA) 1432, 1438 (Fed. Cir. 1991) (upholding district court decision to deny prejudgment interest where patent owner caused delay in proceeding and noting that other unforeseen circumstances might warrant withholding such award).

the stay in *Allen Archery* was originally sought by the defendant, whereas in *Uniroyal* it was sought by the plaintiff.

Turning now to interest rates and terms of compounding, the recent cases indicate appellate approval of an almost unfettered discretion in the district courts. No reported cases have reversed district judges in their decisions on these points. In *Uniroyal*, the Federal Circuit approved the district court's selection of the prime rate as the appropriate rate of interest on the ground that the plaintiff had at least once borrowed at that rate, although the court noted that such a borrowing history is not necessary to support a lower court's choice of the prime rate.²⁴³ In *Kaufman Co. v. Lantech, Inc.*,²⁴⁴ the court approved an interest rate of 8.94% without detailed discussion, against a patentee's argument that the court should have set a higher rate.²⁴⁵ In *Allen Archery*, the Federal Circuit found no abuse of discretion in the district court's compounding of prejudgment interest on a quarterly basis, against an argument that it should not be compounded at all.²⁴⁶ Furthermore, in *Datascope Corp. v. SMEC, Inc.*,²⁴⁷ the court held that annual compounding of prejudgment interest by the district court did not constitute an abuse of discretion.²⁴⁸ There was evidence that the defendant in *Datascope* would, in a hypothetical negotiation, have attempted to set the royalty payment period to be no more frequent than annually.²⁴⁹ The dearth of discussion on these points in the Federal Circuit opinions probably indicates a judicial dissatisfaction with attempts by appellants to upset district courts' exercise of their wide discretion in this area.

243. *Uniroyal*, 939 F.2d at 1545, 19 U.S.P.Q.2d (BNA) at 1437. The court noted the wide latitude enjoyed by district courts in selecting interest rates, citing as an example *Gyromat Corp. v. Champion Spark Plugs Co.*, 735 F.2d 549, 556-57, 222 U.S.P.Q. (BNA) 4, 8-10 (Fed. Cir. 1984), and stated that the district court "may award interest at or above the prime rate." *Uniroyal*, 939 F.2d at 1545, 19 U.S.P.Q.2d (BNA) at 1437 (citing *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 1066, 219 U.S.P.Q. (BNA) 670, 676 (Fed. Cir. 1983) and *Studiengesellschaft Kohle, m.b.H. v. Dart Indus., Inc.*, 862 F.2d 1564, 1579-80, 9 U.S.P.Q.2d 1273, 1287 (Fed. Cir. 1988), as support for proposition).

244. 926 F.2d 1136, 17 U.S.P.Q.2d (BNA) 1828 (Fed. Cir. 1991).

245. *Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1144-45, 17 U.S.P.Q.2d (BNA) 1828, 1834 (Fed. Cir. 1991).

246. See *Allen Archery, Inc. v. Browning Mfg. Co.*, 898 F.2d 787, 791, 14 U.S.P.Q.2d (BNA) 1156, 1159-60 (Fed. Cir. 1990) (citing *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 807 F.2d 964, 969, 1 U.S.P.Q.2d (BNA) 1191, 1194 (Fed. Cir. 1986)) ("The rate of prejudgment interest and whether it should be compounded or un-compounded are matters left largely to the discretion of the district court."), *cert. denied*, 482 U.S. 915 (1987).

247. 879 F.2d 820, 11 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1024 (1990).

248. *Datascope Corp. v. SMEC, Inc.*, 879 F.2d 820, 829, 11 U.S.P.Q.2d (BNA) 1321, 1327-28 (Fed. Cir. 1989) (affirming district court's decision to base prejudgment interest on annual compounding method), *cert. denied*, 493 U.S. 1024 (1990).

249. *Id.*

CONCLUSION

The law governing recovery of damages for patent infringement has undergone considerable development in the last decade. The development has occurred notwithstanding the fact that the applicable statutory provisions have not changed. The development has proceeded along lines of increased rationality, although with results usually favoring patent owners.

Major issues remain to be addressed and decided. Foremost among these are: (1) how much "more" must an infringer pay for a reasonable royalty than the amount that could have been negotiated in real-life licensing, and how is this to be determined without turning the analysis into a punitive one? (2) as between judge and jury, who chooses the "methodology" of reasonable royalty, especially as between the analytical approach and the hypothetical negotiation approach? (3) has the "hypothetical negotiation" approach become so laden with artificial premises that its usefulness as a device to do justice has been outlived? and (4) what other alternatives to the *Panduit* analysis for lost profits recovery can be designed, beyond those presently recognized in the case law? These and other damages issues await resolution in this rapidly unfolding area of intellectual property law.