Reasonable royalties have become the primary form of relief in patent infringement lawsuits. Once a patent is found valid and infringed, royalties are calculated based on a hypothetical license negotiation between the patent owner and infringer said to take place at the moment infringement began. The calculations seek to arrive at a royalty amount the parties would have agreed upon had an actual license been negotiated. But there is disagreement among courts as to what information should inform the royalty amount. Some take the hypothetical negotiation literally and disallow post-infringement information from entering the calculations because such information would have been unknown to parties in an actual negotiation. Yet other courts view the hypothetical negotiation figuratively and allow both pre- and post-infringement information to play roles in arriving at a royalty amount. This comment examines the contradictive reasoning used by courts and proposes a set of judicial rules that, if applied, would aid in keeping reasonable royalty awards aligned with the statutory requirements of reasonableness and adequate compensation, while also helping to make damage awards more predictable.
ARE ROYALTIES REASONABLE IN PATENT INFRINGEMENT SUITS? USING HINDSIGHT AT THE HYPOTHETICAL NEGOTIATING TABLE

MICHAEL J. CARROZZA

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ARE ROYALTIES REASONABLE IN PATENT INFRINGEMENT SUITS? USING HINDSIGHT AT THE HYPOTHETICAL NEGOTIATING TABLE

MICHAEL J. CARROZZA*

INTRODUCTION

Meet Karl. Karl is an avid fisherman who devoted the last twenty years of his spare time designing the first self-propelled fishing lure.1 After two hundred prototypes and more than a thousand weekends later, Karl’s relentless efforts paid off when he secured a patent on this revolutionary technology last year.2 Sadly though, Karl depleted his savings account securing the patent and so far, no investors have bit the hook.3

Enter Borderline Infringers, Inc. (“BI”). Last year, BI discovered Karl’s progeny among thousands of newly issued patents4 and took interest in selling self-propelled fishing lures. BI commenced manufacturing after its analyst forecasted profits ranging from $750,000 to $1,000,000 within the first year of production.5 In response, Karl filed an action against BI for patent infringement. If successful, he

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1 See PAUL QUINNETT, DARWIN’S BASS: THE EVOLUTIONARY PSYCHOLOGY OF FISHING MAN 170 (1996) (explaining that fishing lure designers strive to make a lure that “looks like, floats like, moves like, smells like and even tastes like the real thing” in order to fool fish).


will be awarded reasonable royalties, a measure of damages for a patentee who does not sell a product embodying his invention.6

Now, to what extent should Karl’s recovery depend on BI’s success or lack thereof? Consider three possible outcomes from BI’s endeavor: (1) the lures malfunctioned after only ten uses and led to dismal sales;7 (2) BI made quality lures and achieved its forecasted profits;8 or (3) a solar storm destroyed every electronic device on Earth and compelled millions to take up fishing, which led to windfall profits.9

Courts disagree about what information should be used to calculate reasonable royalties in similar but vastly more complex scenarios.10 Some would have Karl’s recovery based solely on BI’s sales projections, while others would allow consideration of all events that occurred.11 Such disagreement has led to a dangerous environment, one where contradictive binding precedent lurks12 and large damage awards have become commonplace.13 This comment proceeds by first explaining the background of reasonable royalties and evidence used in the calculations. In part II, Karl reappears and his infringement suit is analyzed under opposing Federal Circuit precedent. Part III proposes a set of rules to treat potentially relevant information that would lead to more uniform judgments and adequate damage awards.

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6 See infra Part I.B.
11 Compare Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1385 (Fed. Cir. 2001) (basing royalty award solely on pre-infringement sales projection), with Harris Corp. v. Ericsson, Inc., 417 F.3d 1241, 1257 (Fed. Cir. 2005) (affirming district court’s interpretation of precedent to consider events occurring after infringement began).
12 Honeywell Int’l, 378 F. Supp. 2d at 469 (“Therefore, the court is presented with two cases [from the Federal Circuit], both of which are binding, that dictate opposite results.”).
I. BACKGROUND

This section begins with an introduction to reasonable royalties and the role they play in patent infringement suits. Next, the intricacies of calculations are explained. Finally, several cases are examined that expose a disagreement within the Federal Circuit.

A. Remedies for Patent Infringement

The patent laws of the United States provide that “[a] patentee shall have remedy by civil action for infringement of his patent.” 14 The laws also provide for both injunctive15 and monetary16 forms of relief. But, no matter how egregious an infringer’s actions, and no matter how willful the infringement, the patent laws “do not provide for criminal prosecution of infringement.”17

While the issuance of an injunction is efficacious to prevent further harm, monetary relief restores the patent owner to a financial position he would have enjoyed but for the infringement.18 Patent owners are made whole primarily through compensatory damages,19 which take the form of either (1) lost profits20 or (2) reasonable royalties.21 The form most appropriate is dependent on the particular circumstances of the case.22

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15 Id. § 283.
16 Id. § 284.
17 7 DONALD S. CHISUM, CHISUM ON PATENTS § 20.01 (2012); see also Dowling v. United States, 473 U.S. 207, 227 (1985) (“Despite its undoubted power to do so, . . . Congress has not provided criminal penalties for distribution of goods infringing valid patents.”).
19 7 CHISUM, supra note 17, § 20.03; see also 35 U.S.C. § 284 (2012). In addition to compensatory damages, the court may award enhanced damages, attorney fees, interest and costs. JOHN M. SKENYON, CHRISTOPHER S. MARCHESE & JOHN LAND, PATENT DAMAGES LAW AND PRACTICE § 4:1 (2011).
20 Siemens Med. Solutions USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc., 637 F.3d 1269, 1287 (Fed. Cir. 2011). Lost profits are a form of damages available to patent owners who manufacture or sell something embodying their invention and would have made additional sales, charged higher prices for their product, or would have incurred less expenses but for the defendant’s infringement. Id.; see also 7 CHISUM, supra note 17, § 20.05; Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1548 (Fed. Cir. 1995) (“If the patentee is not selling a product, by definition there can be no lost profits.”).
21 See Michael H. King & Steven M. Evans, Selecting an Appropriate Damages Expert in a Patent Case: An Examination of the Current Status of Daubert, 38 AKRON L. REV. 357, 357 (2005). Some commentators view compensatory damages as having three distinct forms: (1) lost profits, (2) an established royalty or (3) a reasonable royalty. See, e.g., 7 CHISUM, supra note 17, § 20.03. Strictly speaking, though, an established royalty is a one form of reasonable royalties based on the first Georgia-Pacific factor. See Georgia-Pacific Corp. v. U.S. Plywood Corp., 318 F. Supp. 1116 (S.D.N.Y. 1970) (“The royalties received by the patent owner for the licensing of the patent-in-suit, proving or tending to prove an established royalty.”).
22 7 CHISUM, supra note 17, § 20.03; see also Minco Inc. v. Combustion Eng’g, 95 F.3d 1109, 1121 (Fed. Cir. 1996) (affirming district court award of lost profits for one segment of infringing sales and reasonable royalties for another segment of sales).
B. Awarding Reasonable Royalties

When a patent is found valid and infringed and the owner is unable to prove lost profits, the law provides that he is entitled to no “less than a reasonable royalty for the use made of the invention by the infringer . . . .”23 The patent statutes are devoid of any specific methodology to calculate reasonable royalties and trial courts are free to exercise their discretion in adopting a method.24 But, freedom notwithstanding, one of two methods is used in nearly every reasonable royalty calculation—the “analytical” approach or the “willing-licensor, willing-licensee” approach.25

1. An “Analytical” Approach

The analytical approach is the least used,26 but arguably the most straightforward method to calculate reasonable royalties.27 It is best illustrated in TWM Manufacturing v. Dura Corp.28 There, the infringer had memorialized, in a memorandum, a projection of 52.7% gross profits from the proposed infringing sales.29 The special master, deciding the issue of damages, subtracted the infringer’s overhead expenses from the projected profits to arrive at a projected net profit between 37% and 42%.30 Leaving the infringer an industry standard net profit, the patentee was awarded the remainder, about 30%, in reasonable royalties.31

23 35 U.S.C. § 284. An unfortunate and often overlooked nuance of section 284 is that reasonable royalties can define two different types of recovery. SKENYON ET AL., supra note 19, § 3:2. The first defines a statutory minimum that the Federal Circuit has described as “merely the floor below which damages shall not fall.” Bandag, Inc. v. Gerrard Tire Co., 704 F.2d 1578, 1583 (Fed. Cir. 1983). This is an amount corresponding to what the infringer and patent owner would have negotiated had there been an actual licensing agreement. See Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1158 (6th Cir. 1978) (finding that “the infringer would have nothing to lose, and everything to gain if he could count on paying only the normal, routine royalty non-infringers might have paid.”). The second definition refers to any portion of actual damages that cannot be proven as lost profits. See Info. Res., Inc. v. Test Mktg. Grp., Inc., Nos. 93-1227, 93-1228, 1993 U.S. App. LEXIS 34021, at *2 (Fed. Cir. Dec. 27, 1993). By virtue of this second meaning, royalties are often awarded in amounts much greater than the statutory minimum. See King Instruments Corp. v. Perego, 65 F.3d 941, 951 n.6 (Fed. Cir. 1995).

25 Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1324 (Fed. Cir. 2010).
26 See id.
27 See SKENYON ET AL., supra note 19, § 3:8.
29 Id. at 899.
30 Id.
31 Id. The simplicity of this method derives from its mechanical nature, but implicit is the requirement of evidence reflecting the infringer’s projected profits before infringement began. See Lucent, 580 F.3d at 1324. The analytical approach is reminiscent of a watered-down version of profit disgorgement, which was the primary means of patent compensation prior to 1946. See 35 U.S.C. §§ 67, 70 (1946) (current version at 35 U.S.C. §§ 281, 284 (2012)) (“Upon a decree being rendered in any such case for an infringement, the complainant shall be entitled to recover, in addition to profits to be accounted for by the defendant, the damages the complainant has sustained thereby.”) (emphasis added).
2. “Would you Like a License for that Infringement?”

A far less mechanical but more frequently used method to calculate reasonable royalties is the “willing-licensor, willing-licensee” approach.32

a. Who, What, and When?

Using this approach, the patentee and infringer are presumed to be prudent parties who engage in a hypothetical license negotiation and reach an agreement in lieu of the actual infringement.33 Because the infringer is liable for all use made of the invention,34 the first step is to ascertain the date infringement began and to designate it the time when the hypothetical negotiation took place.35

Next, the type of license the hypothetical negotiators would have agreed upon must be determined.36 Although license agreements can be structured many different ways, two common forms are the lump-sum license and running royalty license.37 Under a lump-sum agreement, the licensee (infringer) pays the licensor (patent owner) an upfront amount for full use of the patent during a specified term.38 In contrast, a running royalty license consists of a royalty base and a royalty rate.39 The base reflects the amount of infringing units embodying the subject matter of the patent and is usually expressed in dollars.40 The royalty rate is the percentage of the base that the licensee pays the licensor for using the patent.41

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32 See Lucent, 580 F.3d at 1324. The complexity of this method derives from its many variables. See Fromson v. W. Litho Plate & Supply Co., 853 F.2d 1568, 1574 (Fed. Cir. 1988). The inherent difficulty in the approach has been described as “seeming often to involve more the talents of a conjurer than those of a judge.” Id.

33 Lucent, 580 F.3d at 1324. Some have criticized this approach as imposing a compulsory license “against the will and interest of the person wronged, in favor of the wrongdoer.” Monsanto Co. v. Ralph, 382 F.3d 1374, 1384 (Fed. Cir. 2004).


35 Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1384 (Fed. Cir. 2001).

36 SKENYON ET AL., supra note 19, § 3:13; see also Lucent, 580 F.3d at 1325 (stating the hypothetical negotiation tries to describe the resulting licensing agreement).

37 See SKENYON ET AL., supra note 19, § 3:13; see also Lucent, 580 F.3d at 1326 (explaining the significant differences between running royalties and lump sum agreements).

38 Lucent, 580 F.3d at 1326.


40 Id. Note, however, that if the infringer does not sell a product embodying the patented invention, the royalty base will be expressed in different terms. Id. For example, if infringing products are manufactured but not sold, the number of products will form the base. Id. If the claimed invention is a process, the amount of use will become the royalty base. Lucent, 580 F.3d at 1326.

41 SKENYON ET AL., supra note 19, § 3:13.
b. The Georgia-Pacific Factors

Reasonable royalties are difficult to calculate in part because of myriad factors parties contemplate during real negotiations.\(^{42}\) At trial, most energy will be spent by the judge or jury to decide a royalty rate the parties would have agreed to.\(^{43}\) But this is not all guesswork. Triers of fact are guided by \textit{Georgia-Pacific Corp. v. U.S. Plywood Corp.},\(^{44}\) which outlined a non-exclusive list of fifteen factors that represent relevant evidence of royalty rates and royalty bases.\(^{45}\)

C. Hindsight at the Hypothetical Negotiating Table

Most reasonable royalty calculations involve only a few, and often the same, \textit{Georgia-Pacific} factors.\(^{46}\) Of particular importance to this comment is the eleventh factor, which considers “The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.”\(^{47}\)

A careful reading of this factor reveals an inherent discrepancy with the overall premise of the willing-licensor, willing-licensee approach.\(^{48}\) The approach is predicated on a hypothetical license negotiation said to take place just before the moment of infringement.\(^{49}\) Yet this factor introduces evidence based on events subsequent to infringement, events “that could not have been known to or predicted


\(^{43}\) See, \textit{SKENYON ET AL.}, \textit{supra} note 19, § 3:13 (pointing out that the fifteen \textit{Georgia-Pacific} factors are more relevant in determining a rate than a base).


\(^{47}\) \textit{Georgia-Pacific}, 318 F. Supp. at 1120.

\(^{48}\) Id.

\(^{49}\) Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1384 (Fed. Cir. 2001).
by the hypothesized negotiators. This seeming paradox was addressed in *Sinclair Refining Co. v Jenkins Petroleum Process Co.*

1. “Book of Wisdom”

In *Sinclair Refining*, the plaintiff, Jenkins Petroleum, filed a breach of contract claim for Sinclair’s failure to assign Jenkins a patent application. Jenkins thereafter filed a motion to compel discovery, seeking information to assess damages that related to the extent the patent was used, the number of devices manufactured under the patent, and the amount of products the devices yielded. The district court found the information irrelevant because damages were to be assessed at the time of breach, and here, Jenkins was seeking information subsequent to the breach.

On appeal, Justice Cardozo recognized that the breach occurred when the patent first issued and that its value at that time did not reflect its utilitarian value later assumed. To adequately compensate the plaintiff for the harm suffered, Cardozo held that “after years have gone by since a patent issues[,] 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.”

2. The Pre- and Post-Negotiation Controversy

Courts view the hypothetical negotiation differently, resulting in disagreement as to what evidence should be admissible to calculate reasonable royalties. Some appear to interpret the hypothetical negotiation literally while others appear to view it as a mere figurative construct. As a corollary, the former refuse to allow post-negotiation information into the calculations while the latter welcome it.

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52 Id. at 691.
53 Id.
54 Id. at 690–91.
55 See id. at 697 (“A patent is a thing unique. There can be no contemporaneous sales to express the market of an invention that derives from its novelty its patentable quality.”).
56 See id. at 699 (“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.”).
57 Id. at 698.
a. Literally, Hypothetically Speaking

Courts aligning with the literal interpretation premise their refusal on the unavailability of post-negotiation information during an actual licensing agreement.\(^60\) For example, the damage award in *Interactive Pictures Corp. v. Infinite Pictures, Inc.*\(^61\) was based on sales projections found in the defendant’s business plan dated two months before infringement began.\(^62\) On appeal, the defendant argued that evidence of actual sales proved the projections to be speculative and optimistic.\(^63\) The court, however, found the actual sales to be immaterial because they would have been unknown at the time of infringement.\(^64\)

A similar post-negotiation barrier was erected in *Integra Lifesciences I, Ltd. v. Merck KGaA*,\(^65\) a case set in the mid-1990s when biotechnology was rapidly developing.\(^66\) It was unclear from the record whether infringement began in 1994 or 1995.\(^67\) The plaintiff’s damages expert proffered a hypothetical license based in part on the defendant’s 1995 expectations of obtaining FDA approval.\(^68\) Referencing to the “hypothetical negotiation” sixteen times, Judge Rader emphatically rejected this hypothetical license and remanded to the lower court to determine exactly when infringement began.\(^69\) He reasoned that a 1994 infringement would preclude consideration of the 1995 FDA approval and technological progress, two post-negotiation factors affecting the parties’ risks and expectations.\(^70\)

b. Figuratively Speaking, That Is

Yet other courts embrace Justice Cardozo’s “book of wisdom” and permit all evidence, pre- and post-negotiation. This was made exceptionally clear in *Fromson v. Litho Plate & Supply Co.*,\(^71\) where the court described the hypothetical negotiation as encompass[ing] 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

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\(^{61}\) Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371 (Fed. Cir. 2001).

\(^{62}\) Id. at 1384.

\(^{63}\) Id.

\(^{64}\) Id. at 1385; see also Unisplay, S.A. v. Am. Elec. Sign Co., 69 F.3d 512, 519 (Fed. Cir. 1995) (vacating damage award because none of the evidence “reflected what the parties might have agreed to . . . at the time the infringement began.”) (emphasis added).

\(^{65}\) Integra Lifesciences I, Ltd. v. Merck KGaA, 331 F.3d 860 (Fed. Cir. 2003).

\(^{66}\) See id. at 870.

\(^{67}\) Id.

\(^{68}\) Id.

\(^{69}\) See id. at 869–72.

\(^{70}\) Id. at 870.

that occurred thereafter and that could not have been known to or predicted
by the hypothesized negotiators.  

One district court was faced with the opposing rules of *Integra* and *Fromson* in a
rather unusual case.  Honeywell and HSC compete in the aerospace industry.  In
1998, HSC secured a contract to sell a Brazilian jet manufacturer 609 power units by
2017.  Thereafter, the tragic events of September 11, 2001, unexpectedly increased
the demand for HSC’s power units.  By 2004–05, new sales projections indicated
HSC would sell over 1000 units by 2017.  However, HSC’s power unit infringed
Honeywell’s patent as of March 2000.  The court acknowledged that the 2004–05
projections would have been unavailable at a March 2000 hypothetical license
negotiation. Nonetheless, the projections were allowed and both *Sinclair Refining*
and *Fromson* were cited for support while *Integra* was dismissed for its rigid
barrier. 

II. Analysis

Reasonable royalties must be adequate yet somewhat predictable. Undercompensation in patent infringement could lead to reduced incentives to
innovate. At the same time, overcompensation can “distort competition among
technologies and deter innovation by raising costs and risks for innovators.” Under
current patent jurisprudence, Karl’s recovery ostensibly will depend not only on the
facts, but also the court. This section first explores why courts treat the hypothetical

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72 *Id. at 1575. This was echoed in ResQNet.com, where the Federal Circuit instructed the
district court on remand to “consider the panoply of events and facts that occurred [after
infringement].”*  ResQNet.com, Inc. v. Lansa, Inc., 594 F.3d 860, 872 (Fed. Cir. 2010); *see also
Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1333 (Fed. Cir. 2009) (“Neither precedent nor
economic logic requires [the court] to ignore information about how often a patented invention has
been used by infringers.”).


74 *Id. at 462.*

75 *Id.*

76 *Id. at 463.*

77 *Id.*

78 *Id.*

79 *Id. at 469.*

80 *Id.*

81 *See Christopher B. Seaman, Reconsidering the Georgia-Pacific Standard for Reasonable
awards have become so unpredictable because of the complexity of patent cases and a lack of
uniform guidance in applying the Georgia-Pacific factors).*

82 *See FED. TRADE COMM’N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND

83 *Id.; see Quanta Computer, Inc. v. LG Elecs., Inc., 553 U.S. 617, 626 (2008) (“The primary
purpose of our patent laws is not the creation of private fortunes for the owners of patents but is to
promote the progress of science and useful arts.”).*
negotiation differently.84 Then, Karl's infringement suit is analyzed under opposing Federal Circuit precedent.

A. The Balancing Act

Courts reject post-negotiation information in reasonable royalty calculations on the premise that it would be unknown during an actual negotiation.85 But should unknown information matter? After all, the hypothetical negotiation is only a judicial construct developed to assist in the damages calculus.86 The hypothetical negotiation is not inscribed in statute. But, what is inscribed in statute is the requirement to award “damages adequate to compensate for the infringement . . . .”87 What emerges from the differing interpretations, then, is a balancing act between perspectives from which to view adequate compensation: the hypothetical parties' using foresight or the trier's using hindsight.88

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85 See Unisplay, S.A. v. Am. Elec. Sign Co., 69 F.3d 512, 518–19 (Fed. Cir. 1995) (vacating damage award because plaintiff's damages expert considered evidence of events that occurred after the date of first infringement); Riles v. Shell Exploration & Prod. Co., 298 F.3d 1302, 1313 (Fed. Cir. 2002) (vacating damage award that depended only on post-negotiation information that would have been unknown at the time of infringement).

86 Cincinnati Car Co. v. N.Y. Rapid Transit Corp., 66 F.2d 592, 595 (2d Cir. 1933) (“The whole notion of a reasonable royalty is a device in aid of justice . . . .”); see also Horvath v. McCord Radiator & Mfg. Co., 100 F.2d 326, 335 (6th Cir. 1938) (describing for the first time the willing-licensor, willing-licensee concept as a means to calculate reasonable royalties); Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1384 (Fed. Cir. 2001) (referring to the hypothetical negotiation as a "conceptual framework").

87 35 U.S.C. § 284 (2012). The statute also says, “but in no event less than a reasonable royalty . . . .” Id. This language makes reasonable royalties appear as a “floor” for recovery. See supra text accompanying note 23. The Federal Circuit has observed that a reasonable royalty award could include an amount greater than the statutory minimum in order to “adequate[ly] compensate for the infringement.” See King Instruments Corp. v. Perego, 65 F.3d 941, 951 n.6 (Fed. Cir. 1995); SKENYON ET AL., supra note 19, § 3:2 (“What is always awarded (no matter what it is called) is ‘damages adequate to compensate’ the patent owner.”). In this comment, I focus on adequate compensation rather than a ground floor for recovery.

88 See SKENYON ET AL., supra note 19, § 3:2. The Federal Circuit is primarily concerned with whether the patentee is adequately compensated for the infringement. Id.; see also Integra Lifesciences I, LTD. v. Merck KGaA, 331 F.3d 860, 870 (Fed. Cir. 2003) (ascertaining exactly when infringement began was “essential for properly assessing damages”). The method used to calculate damages is ancillary to this primary concern and explains why courts strive to award adequate compensation, yet diverge in how they arrive at it. SKENYON ET AL., supra note 19, § 3:2.
1. Using Foresight

One of the courts responsible for erecting the post-negotiation barrier was *Interactive Pictures*. The court dismissed evidence of actual sales while placing great emphasis on the availability of the defendant’s business plan “at the time of the hypothetical negotiation.” Though it is unclear to what extent, the type of license at issue may have played a role. The plaintiff’s damages expert opined, and the court accepted, that the parties would have negotiated a five-year lump-sum agreement. If this had in fact occurred, the licensee would have paid the agreed royalty amount before any sales ever took place, thus, foreclosing the licensee’s ability to reevaluate the usefulness and value of the patent given actual sales.

But no discussion of license type appears in *Integra Lifesciences*. Instead, the dominating factors were the nascent state of RGD peptide research in 1994 and the potential for FDA approval in 1995. Although it was unclear when infringement began, some evidence seemed to indicate 1994. Both the FDA approval and rapid technological progress being made would have been both unknown and unforeseeable to the parties in 1994. Rejecting these unlikely events for hypothetical purposes would seem logical, then, if adequate compensation was limited to knowledge within the parties’ foresight.

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89 Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371 (Fed. Cir. 2001).
90 Id. at 1385.
91 Id. at 1384 (“We have previously upheld awards of damages premised on a lump sum royalty payment based on an infringer’s expected sales.”). Whether the reference to “lump sum” is made here merely because it was the license type being discussed or because the court’s holding depended on it is unclear.
92 See sources cited supra note 37.
93 Id.; see *Interactive Pictures*, 274 F.3d at 1385 (“The fact that Infinite did not subsequently meet those projections is irrelevant to Infinite’s state of mind at the time of the hypothetical negotiation.”). This is an important distinction between running royalties and lump-sum, paid-up-front royalties. Under a lump-sum license, the licensee bears the majority of risk because the licensor receives payment irrespective of whether the license was profitable or even used. See RAYMOND T. NIMMER & JEFF C. DODD, MODERN LICENSING LAW § 7:04 (2008). A running royalty shifts some of the risk to the licensor who receives only a percentage of some base from the licensee, where the base might depend on number of units produced, sold, gross revenue, or the like. *Id.* In this sense, the actual market decides the value of the license. *Id.* If the licensee observes a failure, he can cease use of the license and payment to the licensor. *Id.*
95 See id. at 870.
96 Id.
97 Id.
98 See id. (“Thus, the record does not clearly indicate whether 1994 or 1995 is the proper date for the first infringement. If indeed the record shows that the first infringement occurred in 1994, then the hypothetical negotiation should be regarded as having occurred at least before [the potential for FDA approval].”).
Predicting how courts would hold given alternative facts is not an exact science. Rather than prognosticate, I have offered explanations for why the Interactive Pictures and Integra courts chose foresight over hindsight.

2. Using Hindsight

When adequate compensation is based on all events, whether pre- or post-negotiation, what the parties could foresee at the hypothetical negotiation becomes less important than the trier’s hindsight. Both Fromson and Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp. illustrate this proposition. The district court in Fromson awarded a reasonable royalty based on an industry standard profit of ten percent. The court then held that a willing licensee would have agreed to a royalty comprising one quarter of its profits. The Federal Circuit found these percentages arbitrary. It instructed the district court on remand, that if it was to consider the infringer’s actual profits, it could fix a reasonable royalty accordingly. Here, the appellate court was permitting the lower court to use hindsight to formulate a reasonable royalty that would adequately compensate the plaintiff.

Hindsight was even more prevalent in Honeywell. Recall that infringement began in 2000, events in 2001 drastically changed the aircraft industry, and sales projections in 2004 showed a sixty percent increase in demand for the infringing products. Arguably, the events of September 11, 2001, were even less foreseeable than the potential for FDA approval in Integra, yet the Honeywell court allowed the 2004 post-negotiation sales projections into evidence. Among its reasons was that “it [would] permit[] a damage award more in keeping with the plain language of

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99 See Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1579 (Fed. Cir. 1996) (“Calculation of a reasonable royalty depends on the particular facts of each case.”).

100 See Linkco, Inc. v. Fujitsu Ltd., 232 F. Supp. 2d 182, 189–90 (S.D.N.Y. 2002) (suggesting the Interactive Pictures holding depended on the availability of pre-infringement sales projections and, absent that data, would have set a royalty rate and used actual sales); Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp., 378 F. Supp. 2d 459, 468 (D. Del. 2005) (suggesting Integra holding would have allowed post-negotiation information to test the reasonableness of pre-negotiation assumptions, which depended on the foreseeability of intervening events).


103 Fromson, 853 F.2d at 1577.

104 Id.

105 Id. at 1578.

106 Id.

107 Id. It should be noted that the Federal Circuit gave the lower court “liberty to craft a royalty on such bases as it may deem most fair.” Id. Rather than using hindsight to fix a reasonable royalty, the lower court could also have elected to receive expert testimony on what would be reasonable given the circumstances. Id. at 1579.


109 Id. at 463.

110 Id. at 470.
§ 284 by adequately compensating the plaintiff for the ‘use made of the invention’ by the defendant.”111

B. Comparing the Effects of Foresight and Hindsight on Reasonable Royalties with a Hypothetical

The hypothetical posed at the beginning of this comment centered around Karl, a fisherman who spent his years designing a self-propelled fishing lure, obtained a patent, and thereafter filed an infringement suit against Borderline Infringers, Inc. (“BI”).112 Just before BI began infringing Karl’s patent, its analyst forecasted healthy profits ranging from $750,000 to $1,000,000 within the first year.113 BI’s infringement resulted in three possible outcomes: (1) dismal sales with no profits; (2) moderate profits; or (3) windfall profits.114 Karl’s suit is now analyzed under Interactive Pictures, Integra, and Fromson to compare how reasonable royalties would be affected by admissible evidence.115

1. Dismal Sales

If we approach the hypothetical negotiation from a literal standpoint, Interactive Pictures is the easy case. BI’s dismal sales will not be relevant to calculate a reasonable royalty, and instead, its sales projections will be given full weight. Thus, Karl’s recovery will be predictably substantial under Interactive Pictures.116 Integra presents a slight challenge if the court in fact chose foresight due to the unforeseeability of post-negotiation events.117 Poor sales may have been within BI’s

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111 Id. at 469–70.
112 See supra Intro.
113 Id.
114 Id.
115 For purposes of this hypothetical, it is assumed that Karl’s patent was found valid and infringed and only damages need to be determined. The analysis will focus on the eleventh Georgia-Pacific factor, that is, “evidence probative of the value of [the infringer’s] use.” Georgia-Pacific Corp. v. U.S. Plywood Corp., 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970). While it is indisputable that Karl’s recovery will depend on several Georgia-Pacific factors, the goal of this analysis is to examine how the limits of foresight or the use of hindsight impact Karl’s recovery generally. Although BI’s infringement appears to be willful, I have purposely omitted any discussion of enhanced damages or attorney fees for simplicity. Finally, Honeywell is not discussed here because it is not binding in the Federal Circuit as it was a case from the District of Delaware. Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp., 378 F. Supp. 2d 459 (D. Del. 2005).
116 See Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1385 (Fed. Cir. 2001). In Interactive Pictures, the court found the defendant’s failure to meet its sales projections irrelevant for purposes of the hypothetical negotiation. Id. Nor did the failure imply that the sales projections were speculative or based on guesswork. Id. These two reasons alone make this an easy scenario to decide.
117 See Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp., 378 F. Supp. 2d 459, 468 (D. Del. 2005). The Honeywell court alludes to this reading of Integra. Id. It posits that under Integra, some post-negotiation information may be used to test the reasonableness of the assumptions that would be made at the hypothetical negotiation. Id. For support, it contends that the Federal Circuit directed the district court to consider a 1995 license agreement and 1996 purchase of a company, two events postdating a 1994 infringement. Id. But the Integra court used this information to check
foresight. Perhaps internal tests indicated a high likelihood of failure or cheap materials were used. But given only the present facts and holding of Integra, BI’s actual sales would not be relevant because they would require hindsight. Using only the parties’ foresight, then, it follows that BI’s failure will not reduce Karl’s recovery.

Under Fromson, all evidence is relevant, whether pre- or post-negotiation. Despite large anticipated profits, BI’s low sales will negatively impact Karl’s recovery, making the award under Fromson less than the awards anticipated under Interactive Pictures and Integra.

2. Moderate Profits

If the scenario is changed slightly and BI achieves its forecasted profits, Karl’s recovery will remain unchanged no matter the precedent relied upon because achieved profits equal forecasted profits. For example, using foresight under Interactive Pictures or Integra, BI’s forecasted profits will be considered while actual sales will not, and will have no effect on Karl’s recovery because one equals the other. Likewise, under Fromson, both forecasted profits and actual sales will be considered, but because they are equal, there will be zero net effect.

3. Windfall Profits

Assume now that a solar storm destroyed every electronic device on Earth and compelled millions to take up fishing, which led to actual profits ten times what BI had projected. The barrier to post-negotiation information under Interactive Pictures will again render BI’s profits inadmissible. But, relying only on the hypothetical

the reasonableness of the jury’s verdict to determine whether it was adequately supported by the record evidence. See Integra Lifesciences I, LTD. v. Merck KGaA, 331 F.3d 860, 871 (Fed. Cir. 2003). Rather than directing the court to consider these events, it appears more of a test given the standard of review. Id. at 872; see also Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co., 425 F.3d 1366, 1373 (Fed. Cir. 2005) (“A jury’s decision with respect to an award of damages must be upheld unless the amount is grossly excessive or monstrous, clearly not supported by the evidence, or based only on speculation or guesswork.”).

118 See Integra, 331 F.3d at 870. This proposition is supported by examining other holdings from Judge Rader of the Federal Circuit. See, e.g., Riles v. Shell Exploration & Prod. Co., 298 F.3d 1302 (Fed. Cir. 2002). In Riles, Judge Rader gave the bright-line rule that “A reasonable royalty determination for purposes of making a damages evaluation must relate to the time infringement occurred, and not be an after-the-fact assessment.” Riles, 298 F.3d at 1313. In that case, the plaintiff’s damages expert based a reasonable royalty on the value of the defendant’s infringing oil-rig platform at the time of trial and the first year of revenue generated by the platform. Id. at 1311–12. Judge Rader held that the plaintiff’s damages expert’s models “did not reflect what royalty rate a hypothetical negotiation between [the parties] would have yielded at the time the infringement began.” Id. at 1313. This holding is consistent with Integra. See Integra, 331 F.3d at 870. Both cases excluded the use of hindsight.

119 See supra Part I.C.2.b.

120 See supra Part II.B.1.

121 Id.

122 See supra Part II.B.1.
negotiators’ foresight will preclude consideration of sales figures much larger than anticipated profits. Without the larger sales in the calculations, Karl’s recovery expectedly would be less than with the larger figures.

A very predictable outcome can be offered under Integra because of the analogous facts. There, foresight was used because the post-negotiation events were unforeseeable. Here, even if the solar storm was predictable, the sudden interest in fishing was not, nor was BI’s amazing success. By rejecting actual sales, the potentially positive effect that BI’s windfall profits could have on Karl’s recovery will cease to exist.

But under Fromson, BI’s windfall profits would be admissible and would positively impact Karl’s recovery. In fact, these are nearly the same facts as Honeywell, which expressly adopted Fromson over Interactive Pictures and Integra. In that case, demand for the defendant’s infringing product rose precipitously due to the unforeseeable events of September 11, 2001. The court chose hindsight and allowed the post-negotiation information because it more adequately compensated the plaintiff.

C. Summary of Analysis

Inconsistent holdings, such as Interactive Pictures and Fromson, supply parties with too much ammunition and allow almost any argument to be made. If defending infringement for a product that has not done well, the defendant will argue that the only way to calculate reasonable royalties is to consider actual sales. If profits were handsome, the defendant will argue that proof of actual sales would be prejudicial because the parties could not have anticipated this at the hypothetical negotiation.

Plaintiffs are equally armed. When the infringer fails in the market, the plaintiff will argue that actual sales do not reflect the pre-infringement value of the patent; otherwise the defendant would not have bothered infringing. The plaintiff might also argue that the infringer’s incompetence caused the low sales. However,
when the infringement is profitable, the plaintiff will contend that evidence of actual sales is the only true way to measure damages.\textsuperscript{134}

The differing interpretations imputed to the hypothetical negotiation gives both parties merit for their claims, but also create a high level of confusion.\textsuperscript{135} It is axiomatic that adjudications be as predictable and as fair as possible.\textsuperscript{136} As a plaintiff, Karl must have some certainty that, if successful, his award will outweigh attorney’s fees. Given the current state of the doctrine, this is not so clear.

III. PROPOSAL

Potential variance in a patentee’s recovery that results from disagreement as to whether hindsight information should be used or rejected in reasonable royalty calculations is antithetical to the Federal Circuit’s creation.\textsuperscript{137} Most striking is that different panels of the Federal Circuit apply the same test, strive for the same result, and yet hold very differently. “Extensive litigation and a library of legal scholarship” has emerged due to the vagueness of § 284 of The Patent Act and lack of guidance afforded by the courts.\textsuperscript{138}

This doctrinal instability could be quelled by several means. For example, Congress could enact legislation to provide litigants and courts with clear guidance as to how reasonable royalties are to be calculated.\textsuperscript{139} Alternatively, the United States Supreme Court could grant certiorari and provide judicial precedent.\textsuperscript{140} Absent such measures, the Federal Circuit could hear or rehear an appeal \textit{en banc} to maintain uniformity of the court’s decisions.\textsuperscript{141}

This section proposes a set of rules that depend on hindsight and describe how potentially relevant information should be treated. A rationale for using hindsight is first presented, which is then followed by the rules and accompanying explanations.

\textsuperscript{134}See, e.g., Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc., 750 F.2d 1552, 1566 (Fed. Cir. 1984).


\textsuperscript{136}See Williams v. Nat’l Football League, 598 F.3d 932, 935 (8th Cir. 2009) (Colloton, J., dissenting) (explaining the dangers of conflicting opinions within circuit panels).


\textsuperscript{139}See S. REP. NO. 110-259, at 12 (2007) (“The current damage statute is vague and provides little guidance to judges or juries determining the proper damage award, particularly when the award is based on the reasonable royalty standard.”); see also supra text accompanying note 42.


A. Statutory Basis for Hindsight

Courts should not discount the probative nature of hindsight to measure damages commensurate with the harm suffered. Substantive patent law prescribes that a prevailing claimant should be awarded “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 . . . .”\textsuperscript{142} Embedded within this statutory excerpt are two concepts: adequate compensation for the infringement and a royalty that is reasonable considering the infringer’s use of the patented invention.\textsuperscript{143} Both phrases imply a single, simple, converging imperative, particularly, that claimants are to be awarded damages that account for the total period of infringement.\textsuperscript{144}

Courts invented the hypothetical negotiation as an instrument to carry out this statutory imperative.\textsuperscript{145} But it does not correspond to reality.\textsuperscript{146} The negotiation did not take place and no license exists.\textsuperscript{147} It is an emulation of what real parties often do.\textsuperscript{148} It does not follow, then, that hindsight contravenes statutory law merely because it disagrees with the judicially created hypothetical framework.\textsuperscript{149} On the contrary, hindsight can play a crucial role in gauging the true harm suffered as a result of actual events that materialized following infringement. This is not to say the hypothetical negotiation should be abrogated. Without it, reasonable royalties would be arbitrary. But it need not be taken literally to calculate adequate compensation.\textsuperscript{150}

Royalty awards must meet two constraints: reasonableness and adequacy.\textsuperscript{151} Reasonableness can be tested with hindsight by comparing a damage award to what actually occurred.\textsuperscript{152} Adequacy can be measured with hindsight by considering exactly how the defendant used and prospered from the patented technology. While hindsight enables damages to be calculated within these constraints, some

\textsuperscript{143} See Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1544 (Fed. Cir. 1995).
\textsuperscript{145} TWM Mfg. Co. v. Dura Corp., 789 F.2d 895, 900 (Fed. Cir. 1986) (“The willing licensee/licensor approach must be flexibly applied as a ‘device in the aid of justice.’”).
\textsuperscript{146} Fromson v. W. Litho Plate & Supply Co., 853 F.2d 1568, 1575 (Fed. Cir. 1988) (referring to the hypothetical negotiation as encompassing fantasy).
\textsuperscript{147} Hanson v. Alpine Valley Ski Area, Inc., 718 F.2d 1075, 1081 (Fed. Cir. 1983) (“The willing-buyer/willing-seller concept is employed by the court as a means of arriving at reasonable compensation and its validity does not depend on the actual willingness of the parties to the lawsuit to engage in such negotiations. There is, of course, no actual willingness on either side.”); see also Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1554 n.13 (Fed. Cir. 1995) (labeling the hypothetical negotiation an “inaccurate” and “absurd” characterization).
\textsuperscript{148} Fromson v. W. Litho Plate & Supply Co., 853 F.2d 1568, 1576 (Fed. Cir. 1988) (explaining the similarities between an actual license negotiation and the hypothetical negotiation).
\textsuperscript{149} See 35 U.S.C. § 284 (2012). A much different situation would be presented if section 284 read, “but in no event less than a reasonable royalty based on a license that the parties would have negotiated at the time of infringement.”
\textsuperscript{150} TWM Mfg., 789 F.2d at 899 (recognizing that courts are free to adopt any method to arrive at a reasonable royalty amount so long as “that the figure compensate[s] for the infringement”).
\textsuperscript{151} See Rite-Hite, 56 F.3d at 1544.
The following rules set forth guidelines for when hindsight information is appropriate. Taken from the wisdom of several courts, the rules will best achieve the statutory imperative of adequate compensation that accounts for the totality of infringement while remaining reasonable.

B. The Rules of Hindsight: How to Treat Potentially Relevant Information

Two broad categories of information have a temporal relationship with infringement: (1) sales projections and (2) actual sales. The treatment of each deserves independent consideration.

1. Sales Projections

**RULE: Pre-infringement sales projections are always admissible.** Pre-infringement sales projections do not require hindsight and are relevant to the parties’ perceived value of the patent before infringement. These projections may have served as a basis for the amount of infringing items manufactured, marketed, or sold. If the parties were to have negotiated a license, the pre-infringement projections undoubtedly would have helped establish a royalty rate. This information is always admissible.

**RULE: Post-infringement sales projections are admissible unless it can be shown that infringement was known or contemplated.** Post-infringement sales projections necessarily fall into the category of hindsight. This information may reflect the infringer’s business decisions in response to the market. If sales are profitable, the infringer will project higher profits. If sales are stagnant, this too will be reflected by the projections. However, if the infringer knows of or contemplates infringement, projections may no longer reflect prudent business decisions but instead may be influenced by anticipation of litigation. This information will then be unreliable and highly prejudicial.

2. Actual Sales

**RULE: Actual sales are admissible, but lack of profits is not.** When a running royalty is chosen as the basis for an award, actual sales will be multiplied by

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154 See id. at 190–91.
156 Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1385 (Fed. Cir. 2001); see also Linko, Inc. v. Fujitsu Ltd., 232 F. Supp. 2d 182, 189 (S.D.N.Y. 2002).
158 Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp., 378 F. Supp. 2d 459, 469–70 (D. Del. 2005) (permitting the use of post-negotiation sales projections to most “adequately compensat[e] the plaintiff for the ‘the use made of the invention’ by the defendant”). But see Linkco, 232 F. Supp. 2d at 191 (rejecting sales projections not available until months after infringement began because they could not have been known at the hypothetical negotiation).
a royalty rate.\textsuperscript{159} What this rule refers to is the use of actual sales to set the actual rate. Important events that unfold after infringement will be embodied within evidence of actual sales.\textsuperscript{160} If unforeseeable events occur and sales skyrocket, the infringer’s success should translate into a higher award for the injured patentee.\textsuperscript{161} Using hindsight, as shown under the Fromson analysis, can account for this positive impact on the damages award.\textsuperscript{162}

However, if the infringer does not profit, that information should be kept from the calculus because numerous reasons, some having nothing to do with the value of the patent, may explain the failure.\textsuperscript{163} Perhaps the infringer inefficiently brought the product to market,\textsuperscript{164} or stockpiled manufactured products before sales were attempted,\textsuperscript{165} or made an inferior product.\textsuperscript{166} Each reason would prove a lack of profits to be too unreliable and highly prejudicial.\textsuperscript{167}

**CONCLUSION**

Reasonable royalty awards have become the primary form of relief sought in patent infringement suits, and for good reason.\textsuperscript{168} The patent statutes provide no direction to calculate reasonable royalties and courts have inconsistently applied the hypothetical negotiation approach.\textsuperscript{169} Such disorder diminishes predictability of patent damages while furnishing lawyers with a gamut of arguments to be made, limited only by their imagination.\textsuperscript{170} What remains is the potential to stifle or deter innovation by reducing incentives to innovate and increasing costs and risks for innovators.\textsuperscript{171} Of several factors used in royalty calculations, current jurisprudence lacks certainty as to whether events occurring throughout infringement should impact royalty rates. This comment offers a set of rules suggesting that most information, including post-infringement, should be considered to adequately compensate the plaintiff for the infringement.


\textsuperscript{161} See TWM Mfg. Co. v. Dura Corp., 789 F.2d 895, 899 (Fed. Cir. 1986).

\textsuperscript{162} See supra Part II.B.3.

\textsuperscript{163} Linko, Inc. v. Fujitsu Ltd., 232 F. Supp. 2d 182, 190 (S.D.N.Y. 2002).


\textsuperscript{166} Linko, 232 F. Supp. 2d at 190.

\textsuperscript{167} Id.

\textsuperscript{168} See S. REP. NO. 110-259, at 11 n.42 (2008); see also 2011 FTC REPORT, supra note 82, at 162 (discussing the “lottery-ticket mentality” of reasonable royalties).

\textsuperscript{169} See supra notes 10, 12, 84 and accompanying text.

\textsuperscript{170} See supra Part II.C.

\textsuperscript{171} See 2011 FTC REPORT, supra note 82, at 179.