Recent Trends in Reasonable Royalty Damages in Patent Cases

By John D. Luken and Lauren Ingebritson

There are three primary remedies available in patent infringement cases— injunctions, lost profit damages, and reasonable royalty damages. Of the two primary damages remedies, reasonable royalties are by far the most common form of damages awarded. In fact, reasonable royalty damages are awarded almost three times more frequently than lost-profits-only awards. The median patent damages award in 2015 was a staggering $10.2 million, and appeals are noticed in roughly 80 percent of cases, so a thorough understanding of reasonable royalty damages is crucial for all patent litigators.

This chapter will discuss the judicial framework for reasonable royalty damages and a few recent trends in determining an appropriate reasonable royalty. First, while the Georgia-Pacific factors and the hypothetical negotiation construct continue to dominate reasonable royalty analysis, the Federal Circuit has clearly articulated that the factors are not an exclusive test for reasonable royalty calculations, and instructing a jury on Georgia-Pacific factors that are inapplicable to the facts of a particular case is reversible error. Second, a crucial and early step in any reasonable royalty analysis is properly selecting the date of a hypothetical negotiation and determining to what extent information that post-dates the negotiation may be considered. Third, the Federal Circuit has greatly restricted the rules for apportioning damages under the entire market value rule. Fourth, the Federal Circuit has continued to provide guidance on the use of other licensing arrangements and has also recently expressly approved the use of comparable “benchmark” products to determine an appropriate royalty. Finally, the use of consumer survey evidence to determine how frequently consumers use a particular infringing feature and the value consumers place on a particular infringing feature has emerged as a growing and acceptable method, particularly in cases involving complex, multi-component products.

The Georgia-Pacific Framework

35 U.S.C. §284 expressly provides for reasonable royalty damages: “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....”

The simplest way to determine a reasonable royalty is an established royalty, if one exists. However, established royalties are the exception rather than the rule. Most frequently, courts set a reasonable royalty

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2 Id. at 4, 18.
by reference to the well-known fifteen Georgia-Pacific factors, named after the frequently cited case of the same name.3

The fifteen Georgia-Pacific factors are:

1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.

2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.

3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.

4. The licensor’s established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.

5. The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promotor.

6. The effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales.

7. The duration of the patent and the term of the license.

8. The established profitability of the product made under the patent; its commercial success; and its current popularity.

9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.

10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.

11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.

12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

14. The opinion testimony of qualified experts.

15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention—would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.4

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4 Id.
In the course of litigation, most parties will consider all fifteen *Georgia-Pacific* factors, and damages experts will opine as to whether each factor is applicable. Damages experts should discuss each of the factors, stating whether each factor applies, and if so, how that factor influences the expert’s opinion. All too frequently, however, the parties continue this all-inclusive approach through trial and recite each of these fifteen factors in their reasonable royalty jury instruction, regardless of whether each factor actually applies in the case. Parties should be cautioned against this practice, as it is reversible error to instruct the jury on any irrelevant *Georgia-Pacific* factors. The July 2016 revision to the Federal Circuit Bar Association’s Model Patent Jury Instructions, which only includes three factors, reflects current thinking on the *Georgia-Pacific* factors and is a helpful tool in crafting appropriate jury instructions.

Finally, while the *Georgia-Pacific* framework is the most common method of setting a reasonable royalty, it is not the only acceptable method. For example, reasonable royalty damages may also be determined using the analytic approach, which calculates damages based on the infringer’s internal profit projections for the infringing item at the time the infringement began and then apportions the projected profit between the parties as a percentage of sales.

**Setting the Hypothetical Negotiation Date and the “Book of Wisdom” Doctrine**

Because a reasonable royalty calculation “envisions and ascertains the results of a hypothetical negotiation between the patentee and the infringer at a time before the infringing activity began,” the first step in a reasonable royalty calculation is ascertaining the date of the parties’ hypothetical negotiation. The correct determination of this date is essential for properly assessing damages. The hypothetical negotiation should be set on a date just before infringement began. Importantly, the hypothetical negotiation date should not be influenced by anything other than the date of first infringement. For example, if infringement began more than six years ago, the six-year statute of limitations may limit the final damages calculation, but the period is irrelevant to the selection of the hypothetical negotiation date.

Selecting the proper date for the hypothetical negotiation is a critical first step in the reasonable royalty analysis. In *Integra Lifesciences I, Ltd. v. Merck KGaA*, the Federal Circuit held that the difference of

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7 See Energy Transp. Group, Inc. v. William Demant Holding A/S, 697 F.3d 1342, 1357 (Fed. Cir. 2012) (“Once again, this court does not endorse Georgia-Pacific as setting forth a test for royalty calculations, but only as a list of admissible factors informing a reliable economic analysis.”).


10 *Id.*

11 Wang Labs. v. Toshiba Corp., 993 F.2d 858, 870 (Fed. Cir. 1993) (noting that the hypothetical negotiation date is based on when the infringement began, regardless of whether limitations may apply to the damages period).
just one year can vastly alter the outcome of a hypothetical negotiation. There, the patent owner alleged that the accused infringer infringed its patents by conducting experiments for the purpose of identifying potential drug candidates. The jury decided that the accused infringer infringed the patents and awarded the patent owner a reasonable royalty of $15,000,000. The Federal Circuit found the jury's damages award to be unsupported by substantial evidence, in part because the record did not clearly indicate whether the hypothetical negotiation occurred in 1994 or 1995, and “[t]he value of a hypothetical license negotiated in 1994 could be drastically different from one undertaken in 1995….” Integra argued that the testimony of its damages expert supported the $15,000,000 award because he based his hypothetical license amount, in part, on Merck’s 1995 expectation of obtaining FDA approval of its drug. The Federal Circuit specifically noted, however, that, if the hypothetical negotiation occurred in 1994, Merck would not yet have expected FDA approval, which would have changed “the risks and expectations of the parties.” Noting that the “correct determination of [the hypothetical negotiation] date is essential for properly assessing damages,” the Federal Circuit remanded, stating that a difference of one year could make a “great difference” and “change the risks and expectations of the parties” at the hypothetical negotiation.

On occasion and under narrow circumstances, courts have allowed reference to facts and events occurring after the hypothetical negotiation date. The reference to later-occurring events is known as the “book of wisdom” doctrine. The “book of wisdom” is a concept established in a 1933 Supreme Court case titled Sinclair Refining Co. v. Jenkins Petroleum Process Co. In Sinclair, Justice Cardozo noted that because patents are unique, “[t]he use that has been made of the patented device is a legitimate aid to the appraisal of the value of the patent at the time of the breach.” Thus, events occurring after infringement begins are a “book of wisdom” that may be available to correct the uncertainty inherent in setting a hypothetical negotiation before any infringing products are sold. As Justice Cardozo stated, however, “[t]o 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.”

The Federal Circuit approved the use of the “book of wisdom” concept in a reasonable royalty analysis in Fromson v. W. Litho Plate & Supply Co. However, both before and after Fromson, the Federal Circuit has made clear that subsequent events should only inform the hypothetical negotiation if they are relevant to the

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12 331 F.3d at 869–70.
13 Id.
14 Id. at 869.
15 Id. at 869–70.
16 Id. at 870.
17 Id.
18 Id. at 870.
19 289 U.S. 689 (1933).
20 Id. at 697.
21 Id.
22 Id. (emphasis added).
23 853 F.2d 1568 (Fed. Cir. 1988).
value of the patent at the time of first infringement. For example, “[e]vidence of the infringer’s actual profits generally is admissible as probative of his anticipated profits.”24 “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.”25 Thus, parties seeking to use facts and data that were unknown to the parties at the time of the hypothetical negotiation must ensure that the information is closely related to what would have been in the parties’ minds at the time of the hypothetical negotiation.

The Entire Market Value Rule and the Smallest Salable Patent-Practicing Unit Principle

One dispute that arises frequently in the case law involves the appropriate royalty base to which the royalty rate should be applied. Determining the appropriate base is easy when the patent covers the entire article or where the patented invention clearly drives demand for the entire end product (as is common in the pharmaceutical industry). If the patented invention drives demand for the entire end product, then the entire market value rule permits a patentee to rely on the end product’s market value as the royalty base.26

More usually, however, the patented invention covers only a small portion of the article. In that instance, courts apply the smallest salable patent-practicing unit rule. “[T]he smallest salable patent-practicing unit principle provides that, where a damages model apportions from a royalty base, the model should use the smallest salable patent-practicing unit as the base.”27 Federal Circuit cases provide two justifications for the smallest salable patent-practicing unit principle. First, “where small elements of multi-component products are accused of infringement, calculating a royalty on the entire product carries a considerable risk that the patentee will be improperly compensated for non-infringing components of that product.”28 “Second is the important evidentiary principle that care must be taken to avoid misleading the jury by placing undue emphasis on the value of the entire product… [, and] disclosure of the end product’s total revenue cannot help but skew the damages horizon for the jury, regardless of the contribution of the patented component to this revenue.”29

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25 Riles v. Shell Exploration & Prod. Co., 298 F.3d 1302, 1313 (Fed. Cir. 2002); see also Aqua Shield v. Inter Pool Cover Team, 774 F.3d 766, 770 (Fed. Cir. 2014) (“What an infringer’s profits actually turned out to have been during the infringement period may be relevant, but only in an indirect and limited way—as some evidence bearing on a directly relevant inquiry into anticipated profits.”); Interactive Pictures Corp v. Infinite Pictures, Inc., 274 F.3d 1371, 1384 (Fed. Cir. 2001) (rejecting the argument that an infringer’s actual profits should govern the analysis instead of the information actually known at the time of the hypothetical negotiation).


28 Commonwealth Sci. & Indus., 809 F.3d at 1302 (internal quotation and citations omitted).

29 Id. (internal quotations omitted).
The latter principle was at issue in *Uniloc USA, Inc. v. Microsoft Corp.*[^10] In *Uniloc*, the patentee's damages expert attempted to use the entire market value rule as a “check” on his reasonable royalty calculation.[^31] The patentee's expert opined that his calculated royalty only accounted for 2.9 percent of Microsoft's $19.3 billion in revenue on the entire product, which he deemed was conservative because royalty rates in the software industry were typically between 10 and 11 percent.[^32] The patentee also cross-examined the accused infringer's damages expert with a line of questioning designed to show that his proposed royalty was only 0.000035 percent of Microsoft's revenues from the entire product.[^33] The Federal Circuit affirmed the district court's decision to grant a new trial on damages because the patentee violated the entire market value rule.[^34] Both the district court and the Federal Circuit noted that the "$19 billion cat was never put back into the bag," and the "disclosure that a company has made $19 billion dollars in revenue from an infringing product cannot help but skew the damages horizon for the jury, regardless of the contribution of the patented component to this revenue."[^35]

Importantly, “a patentee’s obligation to apportion damages only to the patented features does not end with the identification of the smallest salable unit if that unit still contains significant unpatented features.”[^36] The Federal Circuit has acknowledged “the difficulty that patentees may face in assigning value to a feature that may not have ever been individually sold. However, we note that we have never required absolute precision in this task; on the contrary, it is well-understood that this process may involve some degree of approximation and uncertainty.”[^37]

**Comparable Licenses and Benchmark Products**

Yet another area of common dispute, and thus an area that recent Federal Circuit cases have addressed with some frequency, is the reliance on comparable licensing arrangements and benchmark products. The second *Georgia-Pacific* factor looks to “the rates paid by the licensee for the use of other patents comparable to the patent in suit.”[^38] Not surprisingly, parties frequently take opposing views over whether a particular licensing arrangement is sufficiently comparable to inform a royalty for a patent in suit. The Federal Circuit has developed a significant body of case law on this topic, with a few important and notable trends.

Most importantly, to be admissible, any prior licensing agreement must involve technology that is closely comparable to the patent in suit. The party offering a license agreement in support of a reasonable royalty

[^10]: 632 F.3d 1292 (Fed. Cir. 2011).
[^31]: Id. at 1318.
[^32]: Id.
[^33]: Id. at 1320–21.
[^34]: Id. at 1321.
[^35]: Id. at 1320.
[^36]: VirnetX, Inc. v. Cisco Sys., Inc., 767 F.3d 1308, 1329 (Fed. Cir. 2014) (finding it was reversible error to allow expert testimony that "made no attempt to separate software from hardware, much less to separate the FaceTime software from other valuable software components").
[^37]: Id. at 1328.
[^38]: Georgia-Pacific Corp., 318 F. Supp. at 1120.
calculation has the burden of proving that the license is sufficiently comparable to the technology at issue.\(^{39}\) If a party cannot show that a license agreement involves comparable technology, it will likely be excluded. For example, in *ResQNet.com, Inc. v. Lansa, Inc.*, the Federal Circuit held it was improper to consider five licensing agreements that did not show “any discernible link to the claimed technology.”\(^{40}\) The Federal Circuit noted that the expert “did not even attempt to show that these agreements embody or use the claimed technology or otherwise show demand for the infringed technology.”\(^{41}\) The Federal Circuit vacated the damages award because the expert’s use of those five agreements without any discernible link to the claimed technology drove the royalty rate up to an unjustified level.\(^{42}\)

Parties should also proceed with caution when relying upon licensing agreements reached in the midst of litigation, often in the form of a settlement agreement. This is because “litigation itself can skew the results of the hypothetical negotiation.”\(^{43}\) The Federal Circuit has expressed a “longstanding disapproval” of relying on settlement agreements, stating that “[t]he propriety of using prior settlement agreements to prove the amount of a reasonable royalty is questionable.”\(^{44}\) However, the Federal Circuit also recently stated that “there is no per se rule barring reference to settlements simply because they arise from litigation,”\(^{45}\) and has allowed the reliance on settlement agreements in two recent cases. In *Astrazeneca AB v. Apotex Corp.*, the Federal Circuit found that two settlement agreements reached after the district court held the patent valid and infringed were similar to the setting of a hypothetical negotiation in which infringement and patent validity are assumed.\(^{46}\) Similarly, in *ResQNet*, the Federal Circuit allowed the reliance on a settlement agreement while excluding other non-comparable licenses because the settlement agreement was “the most reliable license in this record.”\(^{47}\) The Federal Circuit did caution, however, that on remand, the district court should consider the settlement agreement in its proper context.\(^{48}\)

Recently, the Federal Circuit has also allowed the use of comparable, or “benchmark,” products to inform the reasonable royalty analysis.\(^{49}\) As with licensing agreements, the party relying on a benchmark

\(^{39}\) Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1332 (Fed. Cir. 2009).

\(^{40}\) 594 F.3d at 870.

\(^{41}\) *Id.* at 870–71.

\(^{42}\) *Id.* at 869–70.


\(^{44}\) LaserDynamics, Inc. v. Quanta Computer, Inc., 694 F.3d 51, 77 (Fed. Cir. 2012) (holding it was error to admit a settlement agreement entered into on the eve of trial after one of the parties had been repeatedly sanctioned by the district court) (citing Rude v. Westcott, 130 U.S. 152, 164 (1889)).

\(^{45}\) *Astrazeneca AB v. Apotex Corp.*, 782 F.3d 1324, 1336 (Fed. Cir. 2015).

\(^{46}\) *Id.*

\(^{47}\) 594 F.3d at 872.

\(^{48}\) *Id.*

\(^{49}\) See Apple Inc. v. Motorola, Inc., 757 F.3d 1286 (Fed. Cir. 2014); i4i Ltd. P’ship v. Microsoft Corp., 598 F.3d 831, 854 (Fed. Cir. 2010).
product must demonstrate that the benchmark is comparable to the patented invention. In both *Apple Inc. v. Motorola, Inc.* and *i4i Ltd. P’ship v. Microsoft Corp.*, the Federal Circuit approved the damages expert’s use of a benchmark product in setting a reasonable royalty. In *Apple*, for example, the patent at issue disclosed the use of finger contacts to control a touch screen computer. Apple’s damages expert looked to Apple’s Magic Trackpad, which is a touchpad used with Apple computers in place of a traditional computer mouse, to value the patented invention. The expert compared the value of the Trackpad to a traditional mouse and also wireless mice and then discounted his royalty calculation to account for value attributable to features that were outside the scope of the asserted patent claims. Finally, the expert compared his resulting royalty calculation to related royalty rates Motorola had paid in other licensing arrangements. The Federal Circuit found that the expert had applied sound methodology and his testimony was admissible.

### The Emerging Use of Surveys in Reasonable Royalty Analysis

In recent years, the use of consumer surveys has also emerged as an acceptable method of proving consumers’ use and valuation of patented technology. As one judge noted, “[l]ong a staple of trademark, false advertising and antitrust cases, consumer surveys are now de rigueur in patent cases as well.” Survey evidence can be particularly useful in cases involving complex, multi-component products (such as smart phones) where it may otherwise prove difficult to figure out how frequently consumers actually use a particular feature or how valuable a particular feature is to consumers.

The Federal Circuit first suggested that patent owners could use consumer survey evidence to show how frequently consumers use a particular feature of a multi-component product in *Lucent Techs., Inc. v. Gateway, Inc.* A few months later, in *i4i Ltd. P’ship v. Microsoft Corp.*, the Federal Circuit approved the use of a consumer survey to do just that—determine the number of infringing uses. In *i4i*, the patentee introduced the testimony of an expert who conducted a survey to determine how frequently the accused infringer’s business customers used its patented invention for editing custom XML, a feature included in Microsoft Word. The survey was sent to a randomly selected group of large and small businesses, who were asked both screening and substantive questions. The screening questions were used to identify the proper individual to speak

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50 *See Apple*, 757 F.3d at 1315 (stating that a party may “value the infringed features based upon comparable features in the marketplace”).

51 757 F.3d at 1294–95.

52 *Id.* at 1316.

53 *Id.*

54 *Id.* at 1316–17.

55 *Id.* at 1320.


57 *See 580 F.3d 1301, 1334 (Fed. Cir. 2009).*

58 598 F.3d at 856.

59 *Id.* at 855.

60 *Id.*
with about the company’s use of custom XML. The substantive questions identified how often a company used custom XML in an infringing manner. The expert assumed that all companies that did not respond to the survey did not use Microsoft Word in an infringing way. Based on the survey responses and the expert’s assumptions, the survey expert determined that 1.9 percent of all copies of Microsoft Word sold to businesses were used in an infringing manner. The expert then multiplied this percentage by the total number of copies of Word sold to businesses, for a total of 2.1 million infringing uses. The patentee’s damages expert then used the survey results in his reasonable royalty damages calculation. The damages expert multiplied his reasonable royalty rate ($98) by the number of infringing uses (2.1 million) to arrive at a final damages calculation of approximately $200 million dollars.

Parties have also used surveys in patent infringement cases to show the monetary value consumers place on a particular feature. The most commonly used survey is known as a conjoint survey. In a conjoint survey, an expert attempts to quantify customer preferences for certain product attributes, which enables the expert to estimate the “market’s willingness to pay” for a particular, patented feature. “By choosing among multiple bundles of attributes, survey participants make implicit tradeoffs one would make in real-world purchasing decisions.” The market’s willingness to pay is the amount by which a company is able to increase the price of its accused product without suffering a reduction in the number of units sold. Conjoint surveys have been used in a number of well-publicized, high-stakes patent infringement cases, including the Apple v. Samsung cases, Microsoft Corp. v. Motorola, Inc., Oracle America, Inc. v. Google Inc., and TV Interactive Data Corp. v. Sony Corp.

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61 Id.
62 Id.
63 Id.
64 Id.
65 Id.
66 Id. at 852.
67 Id. at 852–53.
68 See, e.g., TV Interactive Data Corp. v. Sony Corp., 929 F. Supp. 2d 1006, 1019 (N.D. Cal. 2013).
69 Id. at 1020.
70 Id.
72 904 F. Supp. 2d 1109, 1119–1120 (W.D. Wash. 2012) (allowing expert testimony and evidence of a conjoint survey used to understand consumer usage and valuation of certain features offered in Microsoft’s Xbox 360 console).
74 929 F. Supp. 2d 1006 (N.D. Cal. 2013).
The district court’s opinion in *TV Interactive Data Corp.* provides a good example of what the court found to be an acceptable conjoint survey.75 There, the expert conducted his survey in two phases.76 In phase one, participants were asked to prioritize eighteen attributes of each accused product to come up with a list of six attributes that have similar values to the accused feature.77 In phase one, the expert was also able to determine a price discount that approximately has the same or smaller value as the accused feature.78 In phase two of the survey, the six comparable attributes identified in phase one were used to present the participants with hypothetical products with a selection of attributes and various price discounts.79 This allowed the expert to test the value of the accused feature against two noninfringing alternatives.80 The expert then analyzed the survey data using industry-standard software to arrive at the market’s willingness to pay for the accused feature.81 The patentee’s damages expert then used the estimated market willingness to pay as a baseline in his calculation of a reasonable royalty rate.82

**Conclusion**

The calculation of reasonable royalty damages under §284 continues to be a complex task as courts continuously attempt to refine and improve the rules for calculating damages. It is important for patent litigators to stay abreast of recent trends and decisions so they may advocate on behalf of their clients, especially in an area of the law where damages awards tend to be large and appeals are frequent.

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75 *Id.*
76 *Id.* at 1021.
77 *Id.* at 1020–21 (noting that “[t]he accepted methodology for conjoint analysis is to limit the number of attributes to six or fewer”).
78 *Id.* at 1021.
79 *Id.*
80 *Id.*
81 *Id.*
82 *Id.*