

Apportionment and the Entire Market Value Rule Have Presented Problems in Practice When Determining the Value of a Patented Invention

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I. Introduction and Background

Under the patent statute, a patentee should receive damages “adequate to compensate for the infringement”¹ and “make the patentee whole.”² A patentee’s economic recovery should correspond to an invention’s value.³ According to the Federal Trade Commission (FTC), “[p]atent damages that either under or overcompensate patentees for infringement compared to the market can have detrimental effects on innovation and competition.”⁴ “Undercompensation undermines the patent system’s incentives to innovate,” while “[o]vercompensation raises costs to other innovators through multiple mechanisms and can deter innovation.”⁵

When an accused product includes many features or components, and the patent at issue covers only some of them, determining an invention’s value—and therefore damages for infringement—may prove difficult. This article provides an overview of the legal principles applicable to damages in patent cases and then discusses decisions in cases where patentees have alleged infringement by products with many features or components.

II. A Patentee Should Recover at Least a Reasonable Royalty Due to Infringement

The patent statute sets a floor for damages. A patentee should receive “no . . . less than a reasonable royalty for the use made of the invention by the infringer.”⁶ The Federal Circuit has observed that a reasonable royalty “derives from a hypothetical negotiation between the patentee and the infringer when the infringement began.”⁷ A reasonable royalty is often calculated by multiplying a royalty base by a royalty rate.⁸ The royalty base corresponds to “the revenue pool implicated by the infringement,”⁹ while the royalty rate corresponds to “the percentage of that pool ‘adequate to compensate’” for the infringement.¹⁰ Depending on the facts in a par-

¹ 35 U.S.C. § 284 (2012).

² *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1223 (Fed. Cir. 1995).

³ *See King Instruments Corp. v. Perego*, 65 F.3d 941, 950 (Fed. Cir. 1995) (discussing current laws allowing the market to set the value of inventions).

⁴ U.S. FED. TRADE COMM’N, *THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION* 148 (2011), available at <http://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf>.

⁵ *Id.*

⁶ 35 U.S.C. § 284; *see also* *Bandag, Inc. v. Gerrard Tire Co.*, 704 F.2d 1578, 1583 (Fed. Cir. 1983) (noting that a reasonable royalty is the floor below which damages shall not fall).

⁷ *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860, 868 (Fed. Cir. 2010).

⁸ Eric Phillips & David Boag, *Recent Rulings on the Entire Market Value Rule and Impacts on Patent Litigation and Valuation*, 48 *LES NOUVELLES* 1, 1 (2013); *see also* *Whitserve, LLC v. Computer Packages, Inc.*, 694 F.3d 10, 27 (Fed. Cir. 2012) (stating that multiplying the royalty base by the royalty rate is the “classic way” of determining the reasonable royalty amount).

⁹ *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 286 (N.D.N.Y. 2009).

¹⁰ *Id.* (quoting 35 U.S.C. § 284 (2006)); *see Whitserve*, 694 F.3d at 27 (stating that the royalty base represents the revenue generated by the infringement and the royalty rate represents the percentage of revenue owed to the patentee).

ticular case, issues may arise when ascertaining an appropriate royalty base or an appropriate royalty rate (or both).

In *Georgia-Pacific Corp. v. United States Plywood Corp.*, the district court compiled a list from what it called a “conspectus of the leading cases” of fifteen factors generally relevant when determining a reasonable royalty for a patent license.¹¹ Those factors include royalties paid by others under the patent in suit; royalties paid by the licensee under comparable patents; the nature and scope of the license, e.g., exclusive or nonexclusive; the patentee’s established policy of licensing or not licensing its patents; the relationship between the parties, e.g., whether they compete directly against each other; and the profitability of products made under the patent in suit.¹² The Federal Circuit has approved use of the *Georgia-Pacific* factors when determining a reasonable royalty.¹³

III. With Suitable Evidence, a Patentee May Recover Lost Profits Due to Infringement

Although the patent statute sets a reasonable royalty as a floor for damages, if a patentee can prove that it would have received additional profits “but for” the infringement, the patentee can recover lost profits as damages.¹⁴ The “but for” analysis “requires a reconstruction of the market, as it would have developed absent the infringing product, to determine what the patentee” would have made.¹⁵ A patentee need not prove “but for” causation “as an absolute certainty.”¹⁶

The Federal Circuit has explained that a patentee may establish “but for” causation for lost profits using the *Panduit* four-factor test: (1) demand for the patented product; (2) the absence of acceptable noninfringing substitutes; (3) the manufacturing and marketing capability to exploit the demand; and (4) the profit the patentee would have made “but for” the infringement.¹⁷ A patentee may, however, demonstrate “but for” causation with other evidence.¹⁸

¹¹ 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), *modified sub nom. Georgia-Pacific Corp. v. U.S. Plywood-Champion Papers, Inc.*, 446 F.2d 295 (2d Cir. 1971).

¹² *Id.*

¹³ *See, e.g., Whitserve*, 694 F.3d at 26–27 (calling the factors a “reasoned economic framework.”); *Maxwell v. J. Baker, Inc.*, 86 F.3d 1098, 1109 (Fed. Cir. 1996) (noting that the fact finder may consider the *Georgia-Pacific* factors when determining the reasonable royalty); *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 926 F.2d 1161, 1168 (Fed. Cir. 1991) (affirming the district court’s use of the factors enumerated in *Georgia-Pacific*).

¹⁴ *King Instruments Corp. v. Perego*, 65 F.3d 941, 952 (Fed. Cir. 1995).

¹⁵ *Grain Processing Corp. v. Am. Maize-Prods. Co.*, 185 F.3d 1341, 1350 (Fed. Cir. 1999).

¹⁶ *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1372 (Fed. Cir. 1991).

¹⁷ *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1545 (Fed. Cir. 1995) (en banc) (citing *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156 (6th Cir. 1978)).

¹⁸ *See Rite-Hite*, 56 F.3d at 1548 (noting that *Panduit* is not the “sine qua non” to prove “but for” causation and that some situations may require other means); *Standard Havens*, 953 F.2d at 1372–73 (acknowledging that the four-part test applied in *Panduit* is one way to establish causation).

IV. Apportionment and the Entire Market Value Rule Address Products with Many Features or Components

As noted above, determining the value of an invention may prove difficult when an accused product includes many features or components and the patent at issue covers only some of them. But this problem has existed for some time.

In 1884, the Supreme Court addressed this problem in *Garretson v. Clark*, where it considered damages for an improved clamping mechanism for a larger apparatus called a mop-head.¹⁹ The Court noted:

The patentee . . . must in every case give evidence tending to separate or apportion the defendant's profits and the patentee's damages between the patented feature and the unpatented features, and such evidence must be reliable and tangible, and not conjectural or speculative; or he must show, by equally reliable and satisfactory evidence, that the profits and damages are to be calculated on the whole machine, for the reason that the entire value of the whole machine, as a marketable article, is properly and legally attributable to the patented feature.²⁰

The Federal Circuit has quoted this statement from *Garretson* with approval.²¹

In *Garretson*, the Supreme Court referred to both the “defendant’s profits” and the “patentee’s damages” because the then-applicable patent statute permitted a patentee to recover an infringer’s profits in addition to compensatory damages.²² The current patent statute, however, provides for only compensatory damages.²³

In the 1995 *Rite-Hite Corp. v. Kelley Co.* en banc decision, the Federal Circuit explained that when a patentee seeks damages for “unpatented components sold with a patented apparatus, courts have applied a formulation known as the ‘entire market value rule’ to determine whether such components should be included in the damage computation, whether for reasonable royalty purposes, . . . or for lost profits purposes.”²⁴ The entire market value rule provides an exception to the rule requiring apportionment where the patent at issue covers only some components in a multi-component product.²⁵ Issues involving the entire market value rule may arise whether a patentee seeks lost profits or a reasonable royalty.²⁶

According to the entire market value rule, “a patentee may be awarded damages as a percentage of revenues or profits attributable to the entire product” if it can

¹⁹ 111 U.S. 120, 120–21 (1884).

²⁰ *Id.* at 121 (quoting *Garretson v. Clark*, 10 F. Cas. 40, 44 (C.C.N.D.N.Y. 1878) (No. 5,248)) (internal quotation marks omitted).

²¹ *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1318 (Fed. Cir. 2011); *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1337 (Fed. Cir. 2009).

²² *See Nike, Inc. v. Wal-Mart Stores, Inc.*, 138 F.3d 1437, 1440 (Fed. Cir. 1998) (citing the Patent Act of 1870, ch. 230, § 55, 16 Stat. 198, 201 (1870)).

²³ *See* 35 U.S.C. § 284 (2012) (requiring damages adequate to compensate the claimant for the infringement).

²⁴ 56 F.3d 1538, 1549 (Fed. Cir. 1995) (en banc) (citations omitted).

²⁵ *See LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 66–67 (Fed. Cir. 2012).

²⁶ *See Uniloc*, 632 F.3d at 1318–21 (reasonable royalty); *Lucent*, 580 F.3d at 1336–38 (reasonable royalty); *Rite-Hite*, 56 F.3d at 1549–51 (lost profits).

prove that “the patented feature drives the demand for an entire multi-component product.”²⁷ Similarly, a patentee may rely on the rule if it can prove that the patented feature “was of such paramount importance that it substantially created the value of the component parts.”²⁸ Thus, the rule reduces the risk that a patentee will receive excessive compensation where a patent covers only some components in a multi-component product.²⁹

In the 2009 *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.* panel decision, however, the Federal Circuit held that if a patentee pursues lost profits using the *Panduit* four-factor test, it just needs to demonstrate demand for the patented product, not demand for the patented feature.³⁰ Consistent with this, the FTC has stated that the entire market value rule “is not needed in an economic assessment of lost profits.”³¹ But insofar as the 2009 *DePuy Spine* panel decision conflicts with the 1995 *Rite-Hite* en banc decision that the patented feature must drive the demand for an entire multi-component product to avoid apportionment, an alleged infringer may challenge a patentee’s reliance on that panel decision.³²

In any event, some relationship appears to exist between the *Panduit* four-factor test and the entire market value rule. In particular, a decrease in the patentee’s ability to show that the patented feature drives demand should correspond to an increase in the alleged infringer’s ability to establish the existence of an acceptable noninfringing substitute. That is, if customers purchase the patented product for reasons other than the patented feature, they should willingly purchase competing products lacking the patented feature, and those competing products should constitute acceptable noninfringing substitutes.

V. Relatively Recent Federal Circuit Decisions Have Addressed Apportionment and the Entire Market Value Rule

The Federal Circuit has considered apportionment issues in a few relatively recent cases. In *Lucent Technologies, Inc. v. Gateway, Inc.*, for instance, the asserted Lucent patent covered a method for entering information into fields on a computer screen without using a keyboard.³³ According to the patented method, a “predefined tool” associated with a field provided a menu that permitted a user to select menu information to insert into the field.³⁴ Lucent alleged infringement based on various Microsoft programs, including Outlook.³⁵ Although Outlook’s e-mail fea-

²⁷ *LaserDynamics*, 694 F.3d at 67.

²⁸ *Rite-Hite*, 56 F.3d at 1549 (quoting *Marconi Wireless Tel. Co. v. United States*, 53 U.S.P.Q. 246, 250 (Ct. Cl. 1942), *aff’d in part and vacated in part*, 320 U.S. 1 (1943)).

²⁹ *Id.* at 1550.

³⁰ 567 F.3d 1314, 1329–31 (Fed. Cir. 2009).

³¹ U.S. FED. TRADE COMM’N, *supra* note 4, at 155.

³² *See Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 765 (Fed. Cir. 1988) (“This court has adopted the rule that prior decisions of a panel of the court are binding precedent on subsequent panels unless and until overturned *in banc*.”).

³³ 580 F.3d 1301, 1308 (Fed. Cir. 2009).

³⁴ *Id.* at 1310–11.

³⁵ *Id.* at 1308, 1317.

tures were the ones most commonly used, it contained many others that permitted it to serve as a personal organizer by enabling a user to, among other things, manage contacts, arrange meetings, and maintain a calendar.³⁶

Outlook's calendar function included a date-picker tool.³⁷ When creating a new calendar appointment, the software displayed a monthly calendar as a grid of numbered dates.³⁸ When a user selected a particular grid, the software inserted a numerical month, day, and year into the corresponding field in an appointment form.³⁹ The other two accused Microsoft programs included similar tools.⁴⁰

Lucent relied on the accused Microsoft programs as the royalty base and sought an 8% royalty rate based on the sales revenues for the accused programs.⁴¹ Although Lucent requested royalty damages of about \$562 million, the jury awarded about \$358 million.⁴² The Federal Circuit noted that "infringement by the use of Outlook apparently constituted the vast majority of the award."⁴³ It also noted that the date-picker tool amounted to nothing more than "a tiny feature of one part of a much larger software program . . . comprising hundreds, if not thousands" of noninfringing features.⁴⁴

On appeal, the Federal Circuit decided that substantial evidence did not support the damages award.⁴⁵ Thus, it vacated the award and remanded for a new trial on damages.⁴⁶ With regard to the entire market value rule, the court pointed to the lack of evidence showing that the patented feature constituted the basis for customer demand for Outlook.⁴⁷ In view of Outlook's many noninfringing features, the court reached the "unmistakable conclusion" that the patented feature was "not the reason consumers purchase Outlook."⁴⁸ Thus, the court decided that Lucent failed to carry its burden of proving that the entire market value rule applied to Outlook.⁴⁹

The Federal Circuit observed that Lucent's licensing expert initially applied the entire market value rule to an entire computer loaded with Outlook and advanced a 1% royalty rate.⁵⁰ Before trial, however, the district court disallowed that evidence.⁵¹ At trial, the licensing expert attempted to justify the same total royalty by increasing the royalty rate by a factor of eight to account for a decreased royalty

³⁶ *Id.* at 1332.

³⁷ *Id.* at 1317.

³⁸ *Id.*

³⁹ *Lucent*, 580 F.3d at 1317.

⁴⁰ *Id.*

⁴¹ *Id.* at 1323.

⁴² *Id.* at 1309, 1323–24.

⁴³ *Id.* at 1325.

⁴⁴ *Id.* at 1332.

⁴⁵ *Lucent*, 580 F.3d at 1335.

⁴⁶ *Id.* at 1340.

⁴⁷ *Id.* at 1337.

⁴⁸ *Id.* at 1338.

⁴⁹ *Id.* at 1337–38.

⁵⁰ *Id.* at 1338.

⁵¹ *Lucent*, 580 F.3d at 1338.

base, i.e., Outlook alone as opposed to an entire computer loaded with Outlook.⁵² The Federal Circuit took a dim view of that tactic, saying that it “ignore[d] what the district court’s evidentiary ruling tried to accomplish.”⁵³

About sixteen months after the *Lucent* decision, the Federal Circuit again addressed the entire market value rule in *Uniloc USA, Inc. v. Microsoft Corp.*⁵⁴ There, the asserted Uniloc patent covered a software-registration mechanism that attempted to combat software piracy by permitting the software to run without restrictions only if certain identification numbers matched.⁵⁵ Uniloc alleged infringement based on a product-activation feature in certain versions of Microsoft’s Windows and Office products.⁵⁶

By multiplying a \$2.50 per-unit royalty and the number of new licenses to Windows and Office products, Uniloc’s damages expert calculated a total royalty of about \$565 million.⁵⁷ As a “check” on the reasonableness of that total royalty, the damages expert estimated sales revenues for the accused products to be about \$19 billion by multiplying the number of new licenses and the average sales price per license.⁵⁸ He then determined that a total royalty of about \$565 million corresponded to a royalty rate of about 2.9% and opined on the reasonableness of that rate for software products.⁵⁹ The jury awarded Uniloc \$388 million in damages.⁶⁰

On appeal, the Federal Circuit decided that Microsoft was entitled to a new trial on damages because Uniloc’s damages expert based his opinion about the total royalty on an “arbitrary, general” 25% rule of thumb that was “unrelated to the facts” of the case.⁶¹ As for the entire market value rule, the court held that “Uniloc’s use of the \$19 billion ‘check’ was improper.”⁶² The court noted that the infringing product-activation feature was not the basis for customer demand and that binding precedent permits a patentee to rely on the entire market value rule only if the patented feature is the basis for customer demand.⁶³ The court expressed its concern that “[t]he 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”⁶⁴ Thus, the court affirmed the district court’s conditional grant of a new trial on damages due to Uniloc’s violation of the entire market value rule.⁶⁵

⁵² *Id.*

⁵³ *Id.*

⁵⁴ 632 F.3d 1292, 1318–21 (Fed. Cir. 2011).

⁵⁵ *Id.* at 1296–97.

⁵⁶ *Id.* at 1297–98, 1311 (citing *Uniloc USA, Inc. v. Microsoft Corp.*, 640 F. Supp. 2d 150, 156 (D.R.I. 2009)).

⁵⁷ *Id.* at 1311.

⁵⁸ *Id.*

⁵⁹ *Id.* at 1311–12.

⁶⁰ *Uniloc*, 632 F.3d at 1311.

⁶¹ *Id.* at 1318.

⁶² *Id.* at 1319.

⁶³ *Id.* at 1319–20.

⁶⁴ *Id.* at 1320.

⁶⁵ *Id.* at 1321, 1323.

About twenty months after the *Uniloc* decision, the Federal Circuit again addressed the entire market value rule in *LaserDynamics, Inc. v. Quanta Computer, Inc.*⁶⁶ There, the asserted LaserDynamics patent covered a method for automatically determining the type of optical disc, e.g., CD or DVD, inserted into an optical disc drive.⁶⁷ Quanta assembled and sold laptop computers having optical disc drives.⁶⁸ Quanta purchased the optical disc drives from various sources.⁶⁹

Because Quanta sold laptop computers but not optical disc drives, LaserDynamics's damages expert used the laptops as the royalty base.⁷⁰ Based on laptop sales revenues of \$2.53 billion and a 2% royalty rate, he testified at trial that LaserDynamics should receive a royalty of \$52.1 million.⁷¹

After trial, however, the district court decided that LaserDynamics's damages expert improperly relied on the entire market value rule.⁷² It reasoned that LaserDynamics presented no evidence that the patented disc-discrimination method drove demand for Quanta's laptops.⁷³

On appeal, the Federal Circuit agreed with the district court's decision regarding the entire market value rule.⁷⁴ The Federal Circuit held that "in any case involving multi-component products, patentees may not calculate damages based on sales of the entire product, as opposed to the smallest saleable patent-practicing unit, without showing that the demand for the entire product is attributable to the patented feature."⁷⁵

Like the district court, the Federal Circuit reasoned that LaserDynamics presented no evidence that the patented disc-discrimination method drove demand for Quanta's laptops.⁷⁶ In explaining the evidence needed to show that a patented feature drives consumer demand, the court said that "[i]t is not enough to merely show that" the patented feature "is viewed as valuable, important, or even essential to the use of" the entire product.⁷⁷ The court similarly noted that evidence of commercial unsuitability without the patented feature would fail to show that the patented feature constitutes the basis for customer demand.⁷⁸

To support the rule that the royalty base should generally correspond to the smallest saleable patent-practicing unit, the Federal Circuit, in *LaserDynamics*, cit-

⁶⁶ 694 F.3d 51, 66–70 (Fed. Cir. 2012).

⁶⁷ *Id.* at 56–57.

⁶⁸ *Id.* at 58.

⁶⁹ *Id.*

⁷⁰ *Id.* at 60.

⁷¹ *Id.* at 60–61.

⁷² *LaserDynamics*, 694 F.3d at 63.

⁷³ *Id.*

⁷⁴ *Id.* at 69.

⁷⁵ *Id.* at 67–68.

⁷⁶ *Id.* at 68.

⁷⁷ *Id.*

⁷⁸ *LaserDynamics*, 694 F.3d at 68.

ed Circuit Judge Rader's⁷⁹ decision from *Cornell University v. Hewlett-Packard Co.*⁸⁰ Further, the court quoted Judge Rader's statement from *Cornell* that the royalty base for products with significant noninfringing features should correspond to "the smallest salable infringing unit with close relation to the claimed invention."⁸¹

About two years after the *LaserDynamics* decision, the Federal Circuit again quoted Judge Rader's statement from *Cornell* in *VirnetX, Inc. v. Cisco Systems, Inc.*⁸² There, VirnetX asserted that the "On Demand" and "FaceTime" features in certain Apple mobile devices, such as the iPhone, infringed various VirnetX patents.⁸³ The district court gave the following jury instruction regarding the royalty base:

In determining a royalty base, you should not use the value of an entire apparatus or product unless either: (1) the patented feature creates the basis for customers' demand for the product, or the patented feature substantially creates the value of the other component parts of the product; or (2) the product in question constitutes the smallest saleable unit containing the patented feature.⁸⁴

Apple objected to part two of this instruction because "it allowed the jury to consider an astronomically large royalty base, thus skewing the damages in VirnetX's favor."⁸⁵ Apple's objection comported with the concern expressed in the Federal Circuit's *Uniloc* decision that the disclosure of total product revenues "cannot help but skew the damages horizon for the jury."⁸⁶ But the district court dismissed Apple's objection.⁸⁷ It reasoned that "if the smallest saleable unit is the product itself, then the entire market value rule should not be considered."⁸⁸

On appeal, Apple argued that the royalty-base jury instruction misstated the law by wrongly providing an exception to the entire market value rule whenever a multi-component product "is the smallest salable unit containing the patented feature."⁸⁹ The Federal Circuit agreed with Apple that the jury instruction misstated the law.⁹⁰

The Federal Circuit explained that "the fundamental concern about skewing the damages horizon . . . does not disappear simply because the smallest salable unit is used."⁹¹ The court also explained that the focus on the smallest saleable unit "was intended to produce a royalty base much more closely tied to the claimed in-

⁷⁹ *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 282 (N.D.N.Y. 2009) (sitting by designation as a trial judge).

⁸⁰ *LaserDynamics*, 694 F.3d at 67 (citing *Cornell*, 609 F. Supp. 2d at 283, 287–88).

⁸¹ *Id.* (quoting *Cornell*, 609 F. Supp. 2d at 287–88).

⁸² 767 F.3d 1308 (Fed. Cir. 2014).

⁸³ *Id.* at 1314–15.

⁸⁴ *Id.* at 1327.

⁸⁵ *VirnetX Inc. v. Apple Inc.*, 925 F. Supp. 2d 816, 840 (E.D. Tex. 2013).

⁸⁶ *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1320 (Fed. Cir. 2011).

⁸⁷ *VirnetX*, 925 F. Supp. 2d at 841.

⁸⁸ *Id.*

⁸⁹ *VirnetX*, 767 F.3d at 1327.

⁹⁰ *Id.*

⁹¹ *Id.*

vention than the entire market value of the accused products.”⁹² Hence, the court said that a patentee should “base[] its damages on ‘the smallest salable infringing unit *with close relation to the claimed invention.*”⁹³

The Federal Circuit called that unit’s identification “simply a step toward meeting the requirement of apportionment.”⁹⁴ According to the court, where that unit is “a multi-component product containing several non-infringing features with no relation to the patented feature . . . the patentee must do more to estimate what portion of the value of that product is attributable to the patented technology.”⁹⁵ In particular, the patentee must “apportion the royalty down to a reasonable estimate of the value of its claimed technology, or else establish that its patented technology drove demand for the entire product.”⁹⁶ The court reasoned that a contrary holding would allow the entire market value exception to swallow the apportionment rule.⁹⁷

VI. Before the Federal Circuit’s *VirnetX* Decision, District Courts Inconsistently Applied Earlier Federal Circuit Precedent to Reasonable-Royalty Issues

As explained in more detail below, before the Federal Circuit’s *VirnetX* decision, district courts were inconsistent in their rulings regarding apportionment below the smallest saleable unit to determine the royalty base. Some courts required further apportionment to determine the royalty base, while others permitted patentees to use the smallest saleable unit. And some sidestepped the issue, for example, by deciding that a jury should determine the royalty base because the parties presented conflicting evidence on that issue.

A. Most District Courts Required Apportionment Below the Smallest Saleable Patent-Practicing Unit

In *AVM Technologies, LLC v. Intel Corp.*, the asserted AVM patent covered improved dynamic-logic circuits.⁹⁸ Intel made and sold microprocessors that contained many components in addition to the accused circuits.⁹⁹ AVM’s damages expert used Intel’s microprocessors as the royalty base, and Intel moved to exclude his testimony because, among other reasons, it allegedly violated the entire market value rule.¹⁰⁰

In deciding Intel’s motion, the district court cited the Federal Circuit’s *LaserDynamics* decision for the proposition that royalties should generally correspond

⁹² *Id.*

⁹³ *Id.* (emphasis added by the Federal Circuit).

⁹⁴ *Id.*

⁹⁵ *VirnetX*, 767 F.3d at 1327.

⁹⁶ *Id.* at 1329.

⁹⁷ *Id.* at 1327–28.

⁹⁸ No. 10-610-RGA, 2013 WL 126233, at *1 (D. Del. Jan. 4, 2013).

⁹⁹ *See id.* at *2–3.

¹⁰⁰ *Id.* at *1.

to the smallest saleable patent-practicing unit.¹⁰¹ The court then rejected AVM's argument that discerning the smallest saleable patent-practicing unit was "the end of the analysis" for the royalty base.¹⁰² The court reasoned that "[t]he use of a saleable unit that is greater than the patented feature is going to introduce . . . error when the patented feature is a 'date picker' whether the saleable unit is a computer loaded with 'Outlook' or simply 'Outlook.'"¹⁰³ It explained that this "error will be greater with the computer loaded with 'Outlook' than with 'Outlook' alone, but the difference in error is one of degree, not of kind."¹⁰⁴

This analysis appears sound in view of the Federal Circuit's *Lucent*, *Uniloc*, and *LaserDynamics* decisions. Although the Federal Circuit in *Lucent* did not expressly identify Outlook as the smallest saleable patent-practicing unit—or even use that phraseology—it decided that the patentee failed to satisfy the entire market value rule for Outlook.¹⁰⁵ Further, the court in *Uniloc* decided that the patentee failed to satisfy the entire market value rule for Windows and Office.¹⁰⁶ Since those software products were the smallest saleable patent-practicing units, the Federal Circuit implicitly required apportionment below the smallest saleable unit.

Further, in *LaserDynamics*, the Federal Circuit ratified a royalty base corresponding to the smallest saleable unit having "close relation to the claimed invention."¹⁰⁷ If the smallest saleable unit includes many nonpatented features or components, then that unit would not have "close relation to the claimed invention" to warrant its use as the royalty base.¹⁰⁸ And consistent with its earlier apportionment decisions, the Federal Circuit in *VirnetX* expressly required apportionment below the smallest saleable unit for "multi-component product[s] containing several non-infringing features with no relation to the patented feature"¹⁰⁹

In *AVM Technologies*, the district court indicated that it would likely exclude evidence from AVM's damages expert because AVM failed to show that the patented circuits drove demand for Intel's microprocessors.¹¹⁰ After a *Daubert* hearing, the court granted Intel's motion to exclude.¹¹¹

In *Brocade Communications Systems, Inc. v. A10 Networks, Inc.*, the asserted Brocade patents covered features that improved the performance and reliability of

¹⁰¹ *Id.* at *2 (citing *LaserDynamics*, 694 F.3d at 67).

¹⁰² *Id.* at *2–3.

¹⁰³ *Id.* at *3.

¹⁰⁴ *AVM Techs.*, 2013 WL 126233, at *3.

¹⁰⁵ *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1337–38 (Fed. Cir. 2009).

¹⁰⁶ *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1318–21 (Fed. Cir. 2011).

¹⁰⁷ *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2012) (quoting *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 287–88 (N.D.N.Y. 2009)).

¹⁰⁸ *See AVM Techs.*, 2013 WL 126233, at *2–3.

¹⁰⁹ *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1327 (Fed. Cir. 2014).

¹¹⁰ *AVM Techs.*, 2013 WL 126233, at *3–4.

¹¹¹ *AVM Techs., LLC v. Intel Corp.*, 927 F. Supp. 2d. at 141 (D. Del. 2013).

routers for sending data across networks.¹¹² The district court noted that the accused routers included many features in addition to the allegedly infringing features.¹¹³ Although the accused routers were the smallest saleable patent-practicing unit, the court decided that Brocade's damages expert improperly relied on them as the royalty base because the evidence failed to show that the patented features were "the primary reason that consumers buy the product . . ."¹¹⁴ Due to that failure, the court vacated the jury's reasonable-royalty award.¹¹⁵

In *Dynetix Design Solutions, Inc. v. Synopsys, Inc.*, the patented feature constituted just one of many in the accused Synopsis product.¹¹⁶ Dynetix's damages expert—like the experts in *AVM* and *Brocade*—used the entire Synopsis product as the royalty base because Synopsis did not sell anything smaller.¹¹⁷ Dynetix's expert did not further apportion the royalty base to account for the accused product's non-patented features.¹¹⁸ Synopsys moved to exclude evidence from that expert.¹¹⁹

The district court decided that Dynetix's expert used an improperly large royalty base.¹²⁰ The court viewed the Federal Circuit's *Lucent* decision as standing for the proposition that the royalty base must be "apportioned to reflect the value" of the patented feature relative to the nonpatented features absent evidence that the patented feature drives customer demand.¹²¹ The court then quoted Circuit Judge Rader's statement from *Cornell* that the patentee must use as the royalty base the "smallest salable infringing unit with close relation to the claimed invention."¹²² The court reasoned that there was "no logical basis to depart from an apportionment requirement in a case, such as the present one, where the alleged smallest salable unit plainly is *not* closely tied to the patented feature."¹²³ Thus, the court granted Synopsys's motion to exclude.¹²⁴

Like the district court in *Dynetix*, the district court in *Rembrandt Social Media, LP v. Facebook, Inc.* sustained a challenge to a royalty calculation as improperly failing to apportion down to the allegedly infringing features.¹²⁵ There, the two asserted Rembrandt patents allegedly covered Facebook features called BigPipe and

¹¹² See No. C 10-3428 PSG, 2013 WL 831528, at *1, *9, *11, *16 (N.D. Cal. Jan. 10, 2013) (discussing each relevant claim limitation as it pertains to the asserted Brocade patents).

¹¹³ *Id.* at *14.

¹¹⁴ *Id.*

¹¹⁵ *Id.* at *14–15.

¹¹⁶ No. C 11-05973 PSG, 2013 WL 4538210, at *1 (N.D. Cal. Aug. 22, 2013).

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.* at *1, *4.

¹²¹ *Id.* at *3.

¹²² *Dynetix*, 2013 WL 4538210, at *3 (quoting *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 287–88).

¹²³ *Id.*

¹²⁴ *Id.* at *5.

¹²⁵ No. 1:13-CV-158, 2013 WL 6327852, at *5–6 (E.D. Va. Dec. 3, 2013).

Audience Symbol.¹²⁶ Rembrandt's damages expert determined the royalty base by considering Facebook's entire revenue stream during the period of alleged infringement and excluding much of it as related to noninfringing features.¹²⁷ Ultimately, he concluded that the royalty base should include the revenue attributable to four Facebook features: Timeline, News Feed, Groups, and Photo/Video Sharing.¹²⁸ While those features could work with BigPipe and Audience Symbol, they could also work independently without infringing.¹²⁹ But Rembrandt's damages expert did not attempt to ascertain the revenue attributable only to BigPipe and Audience Symbol.¹³⁰

The district court determined that Rembrandt's damages expert used an improperly large royalty base.¹³¹ Citing the Federal Circuit's *Lucent* decision, the court noted that "[w]here . . . the accused technologies represent a small improvement to an existing technology," a patentee "is only entitled to a royalty based on the incremental value provided by that improvement."¹³² And citing the Federal Circuit's *LaserDynamics* decision, the court observed that a patentee "must apportion down to the 'smallest salable patent-practicing unit' closely tied to the patent at issue."¹³³ The court then observed that "the smallest salable infringing unit must be the starting point for the royalty base" and that "further apportionment is required 'even when the accused product is the smallest salable unit . . . if the smallest salable unit is still a multi-component product encompassing non-patent related features.'"¹³⁴ The court reasoned that "an apportionment including value attributable to more features than just the improvement overcompensates the patentee."¹³⁵

Because the four features used for the royalty base could work without infringing, the district court considered the expert's royalty base excessive and ruled that a proper royalty base would have reflected "the worth of the features actually causing the infringement—BigPipe and Audience Symbol."¹³⁶ The court required further apportionment even though BigPipe and Audience Symbol were arguably smaller than the smallest saleable unit.¹³⁷

In *Network Protection Sciences, LLC v. Fortinet, Inc.*, the district court reached a similar conclusion.¹³⁸ There, NPS accused certain Fortinet operating-system software, either installed in Fortinet hardware or used with Fortinet software

¹²⁶ *Id.* at *2–3.

¹²⁷ *Id.*

¹²⁸ *Id.* at *5.

¹²⁹ *Id.*

¹³⁰ *Id.* at *5.

¹³¹ *Rembrandt*, 2013 WL 6327852, at *5.

¹³² *Id.* at *5 (citing *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1337 (Fed. Cir. 2009)).

¹³³ *Id.* (citing *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 68 (Fed. Cir. 2012)).

¹³⁴ *Id.* (quoting *Dynetix Design Solutions, Inc. v. Synopsys, Inc.*, No. C 11-05973 PSG, 2013 WL 4538210, at *3 (N.D. Cal. Aug. 22, 2013)).

¹³⁵ *Id.*

¹³⁶ *Id.* at *5–6.

¹³⁷ *Rembrandt*, 2013 WL 6327852, at *5.

¹³⁸ No. C 12-01106 WHA, 2013 WL 5402089, at *5–8 (N.D. Cal. Sept. 26, 2013).

that emulated hardware, of infringing a patent covering firewall technology.¹³⁹ The accused products contained allegedly patented and nonpatented components.¹⁴⁰ Fortinet argued that NPS's damages expert "improperly based royalties on the entire market value of the accused products."¹⁴¹

The district court agreed that NPS "failed to provide sufficient evidence that the patented features drive demand" for the accused products.¹⁴² The court acknowledged that NPS's damages expert correctly identified the accused products, including associated hardware, as the smallest saleable units.¹⁴³ The court then noted NPS's assertion that its expert properly "performed the apportionment analysis required by the Federal Circuit by first ascertaining the smallest salable patent-practicing unit, and then analyzing the proportion of product value derived from the allegedly infringing technology."¹⁴⁴ But the court criticized NPS's position saying, "Analytically, this statement is incomplete. When using a multi-component product as a royalty base, even if it is the smallest salable unit, a patentee must *still show* that the patented feature drives demand for the entire product."¹⁴⁵ Hence, the court concluded that "[u]sing the accused products as a royalty base . . . [ran] afoul of the entire market value rule."¹⁴⁶

In *GPNE Corp. v. Apple, Inc.*, the district court reached a similar conclusion.¹⁴⁷ There, GPNE asserted that various Apple iPhone and iPad devices infringed three patents covering two-way pager technologies incorporated in certain telecommunications standards.¹⁴⁸ GPNE's damages expert relied on the accused devices as the royalty base.¹⁴⁹ In contrast, Apple's damages expert relied on the baseband processor chips in the accused devices as the royalty base.¹⁵⁰ Each party moved to exclude evidence from its adversary's damages expert.¹⁵¹

The district court granted Apple's motion to exclude evidence from GPNE's expert because, among other reasons, he performed no apportionment and failed to even consider the propriety of apportionment.¹⁵² The court noted that GPNE's patents concerned "just one aspect" of the telecommunications standards implemented in the accused devices.¹⁵³ The court then ruled that GPNE's expert should have

¹³⁹ *Id.* at *1.

¹⁴⁰ *Id.* at *1, *8.

¹⁴¹ *Id.* at *5.

¹⁴² *Id.* at *7, *8.

¹⁴³ *Id.* at *6.

¹⁴⁴ *Network Prot. Scis.*, 2013 WL 5402089, at *7.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.* at *8.

¹⁴⁷ No. 12-CV-02885, 2014 WL 1494247, at *5, *13 (N.D. Cal. Apr. 16, 2014).

¹⁴⁸ *Id.* at *1, *3, *5.

¹⁴⁹ *Id.* at *2, *10.

¹⁵⁰ *Id.* at *6-7, *10.

¹⁵¹ *Id.* at *1.

¹⁵² *Id.* at *4-5.

¹⁵³ *GPNE*, 2014 WL 1494247, at *5.

made some attempt to distinguish the infringing features from the noninfringing features and apportion value between them.¹⁵⁴

In contrast, the district court denied GPNE's motion to exclude evidence from Apple's expert.¹⁵⁵ The court reasoned that Apple's expert properly identified the smallest saleable patent-practicing unit—the baseband processor chips—and then apportioned the supplier's profits between GPNE's asserted patents and other technology incorporated in the pertinent telecommunications standards.¹⁵⁶ In denying GPNE's motion, the court rejected GPNE's assertion that the alleged infringer must make or sell the smallest saleable patent-practicing unit.¹⁵⁷ The court observed that a make-or-sell requirement would permit patentees to circumvent the smallest-saleable-unit rule by simply suing end-product producers rather than component manufacturers.¹⁵⁸

B. Some District Courts Did Not Require Apportionment Below the Smallest Saleable Patent-Practicing Unit

As the preceding discussion demonstrates, where the smallest saleable unit includes many unpatented features or components, most district courts required further apportionment to determine an appropriate royalty base. But a few did not.

For example, the district court in *Internet Machines LLC v. Alienware Corp.* deemed apportionment below the smallest saleable patent-practicing unit unnecessary.¹⁵⁹ There, Internet Machines (IM) asserted that certain switches incorporated into larger computer systems infringed two of its patents.¹⁶⁰ Although the switches contained unpatented features, IM's damages expert used the switches as the royalty base.¹⁶¹ After trial, the infringer sought judgment as a matter of law on damages because IM's expert did not further apportion royalties or show that the entire market value rule applied.¹⁶²

The district court rejected that argument, reasoning that the switches constituted the smallest saleable patent-practicing unit and therefore “additional apportionment is unwarranted.”¹⁶³ The court said, “For practical economic purposes, any further apportionment of value within a switch would be entirely speculative and arbitrary.”¹⁶⁴ But the court also decided that “[e]ven if the entire market value rule were applicable,” substantial evidence showed that “the patented invention drove

¹⁵⁴ *Id.*

¹⁵⁵ *Id.* at *6–10.

¹⁵⁶ *Id.* at *7–8.

¹⁵⁷ *Id.* at *11–12.

¹⁵⁸ *Id.* at *12.

¹⁵⁹ No. 6:10-CV-23, 2013 WL 4056282, at *13–14 (E.D. Tex. June 19, 2013).

¹⁶⁰ *Id.* at *1, *13.

¹⁶¹ *Id.* at *13.

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.*

customer demand for the product.”¹⁶⁵ Thus, the court’s statements about further apportionment could constitute dicta.

As another example, the district court in *Summit 6 LLC v. Research in Motion Corp.* deemed apportionment below the smallest saleable patent-practicing unit unnecessary.¹⁶⁶ In that case, Summit accused various Samsung mobile devices, such as cell phones with cameras that resized images before transmission, of infringing a patented method for processing digital information.¹⁶⁷ Samsung argued that Summit’s damages expert improperly used the accused devices as the royalty base because the evidence did not show that the entire market value rule applied.¹⁶⁸

When analyzing contributory infringement, which involves a “component” of a patented invention that has no substantial noninfringing use, the district court focused on the image-resizing software as the appropriate unit.¹⁶⁹ But when considering Samsung’s argument regarding the entire market value rule, the court viewed the entire device as the appropriate unit for royalty purposes and rejected Samsung’s argument.¹⁷⁰ The court reasoned that “only the entire device itself is capable of performing the image resizing . . . [and] [t]hus, using the entire device as the royalty base is proper under *LaserDynamics* because the device itself is the ‘smallest patent-practicing unit.’”¹⁷¹

Similarly, the district court in *Tomita Technologies USA, LLC v. Nintendo Co.* deemed apportionment below the smallest saleable patent-practicing unit unnecessary.¹⁷² There, Tomita accused Nintendo’s 3DS handheld gaming console of infringing a patent covering stereoscopic (or three-dimensional) imaging technology.¹⁷³ The asserted patent covered only two features in Nintendo’s 3DS console.¹⁷⁴ Consequently, Nintendo contended that Tomita’s damages expert improperly based royalties on the entire market value of the 3DS console.¹⁷⁵

The district court acknowledged that the patented technology “was in some sense ancillary to the core functionality of the 3DS as a gaming system” and that “consumer reception for the patent-related features was mixed.”¹⁷⁶ But the court rejected Nintendo’s challenge to the royalty base because the 3DS console constituted the smallest saleable patent-practicing unit.¹⁷⁷ The court reasoned that Tomita’s

¹⁶⁵ *Internet Machs.*, 2013 WL 4056282, at *14.

¹⁶⁶ No. 3:11-CV-367, 2013 U.S. Dist. LEXIS 95164, at *30–35 (N.D. Tex. June 26, 2013).

¹⁶⁷ *Id.* at *5–7, *25.

¹⁶⁸ *Id.* at *34.

¹⁶⁹ *Id.* at *22–23.

¹⁷⁰ *Id.* at *32–35.

¹⁷¹ *Id.* at *34 (quoting *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2012)).

¹⁷² No. 11 Civ. 4256(JSR), 2013 WL 4101251, at *7–8 (S.D.N.Y. Aug. 14, 2013).

¹⁷³ *Id.* at *1.

¹⁷⁴ *Id.* at *1, *8.

¹⁷⁵ *Id.* at *7.

¹⁷⁶ *Id.* at *8.

¹⁷⁷ *Id.*

damages expert “looked to the 3DS itself as the ‘smallest salable patent-practicing unit,’ and therefore did not rely on the entire market value rule.”¹⁷⁸

Still, the district court concluded that the jury’s \$30.2 million damages award was “intrinsically excessive” and unsupported by the evidence.¹⁷⁹ The court believed that the jury “likely weighed too heavily” Nintendo’s profits for games designed for the 3DS console.¹⁸⁰ Hence, the court gave Tomita the choice of accepting a remittitur of half the jury’s \$30.2 million damages award (\$15.1 million) or conducting a new trial on damages.¹⁸¹

The apportionment issue has arisen in at least one case involving drug products. In *In re Omeprazole Patent Litigation*, AstraZeneca owned two patents covering “pharmaceutical preparations” with three features: (1) a core containing omeprazole together with an alkaline-reacting compound; (2) an inert subcoating over the core; and (3) an enteric coating over the inert subcoating.¹⁸² Apotex manufactured omeprazole capsules by first making pellet cores containing omeprazole and certain inactive ingredients.¹⁸³ Apotex then applied an enteric coating to the pellets cores without applying a subcoating.¹⁸⁴ To complete the manufacturing process, Apotex introduced the enteric-coated pellet cores into capsule shells.¹⁸⁵

In 2007, the district court decided that Apotex’s omeprazole capsules infringed two AstraZeneca patents.¹⁸⁶ It found that an inert subcoating formed *in situ* between the pellet cores and the enteric coating.¹⁸⁷

In 2013, the court conducted a nonjury trial to determine damages due to Apotex’s infringement.¹⁸⁸ The parties agreed that damages should “be based on a reasonable royalty for the use made of the patents.”¹⁸⁹ Apotex argued that royalties should depend on “the value of the infringing aspect of its formulation, that is, the inert subcoating that formed *in situ* between” the pellet cores and the enteric coating.¹⁹⁰ The district court rejected Apotex’s argument for two reasons.¹⁹¹

First, the district court cited the Federal Circuit’s *LaserDynamics* decision for the proposition that royalties for a product containing many different components should usually be based on the smallest saleable patent-practicing unit rather than

¹⁷⁸ *Tomita Techs. USA*, 2013 WL 4101251, at *8.

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ *Id.* at *9.

¹⁸² 490 F. Supp. 2d 381, 393–94 (S.D.N.Y. 2007), *aff’d*, 281 F. App’x 974 (Fed. Cir. 2008), *aff’d on other grounds*, 536 F.3d 1361 (Fed. Cir. 2008).

¹⁸³ *Id.* at 472.

¹⁸⁴ *Id.*

¹⁸⁵ *See id.*

¹⁸⁶ *Id.* at 486.

¹⁸⁷ *Id.* at 483.

¹⁸⁸ *Astrazeneca AB v. Apotex Corp.*, 985 F. Supp. 2d 452, 460 (S.D.N.Y. 2013).

¹⁸⁹ *Id.* at 459.

¹⁹⁰ *Id.* at 489.

¹⁹¹ *Id.* at 489–90.

the entire product.¹⁹² The court observed that the issue concerning the appropriate unit for royalty purposes typically arises for electronic products.¹⁹³ Without much analysis, the court said that “there is little reason to import these rules for multi-component products like machines into the generic pharmaceutical context.”¹⁹⁴ The court noted that “Apotex has cited no precedent for doing so.”¹⁹⁵ The court also discussed the absence of evidence that the subcoating constituted a saleable patent-practicing unit.¹⁹⁶

Second, the district court recognized the entire market value rule as an exception to the general principle that the royalty base should correspond to the smallest saleable patent-practicing unit.¹⁹⁷ But the court decided that the subcoating did “substantially create[] the value” of Apotex’s omeprazole capsules even though the subcoating did not create customer demand for omeprazole.¹⁹⁸ The court considered the subcoating a “crucial aspect” of the claimed inventions because earlier formulations lacking subcoatings “were not commercially viable.”¹⁹⁹

So the district court relied on alternative theories.²⁰⁰ It decided that it need not consider the propriety of apportionment for the drug products at issue and, in any event, that AstraZeneca satisfied the entire market value rule since the patented features substantially created the value of those products.²⁰¹

C. Some District Courts Ducked the Apportionment Issue

Some district courts have avoided addressing whether a patentee should have used a royalty base smaller than the smallest saleable patent-practicing unit by ruling that the patentee’s evidence, while perhaps weak, satisfies the entire market value rule. For example, in *Interwoven, Inc. v. Vertical Computer Systems*, Interwoven sought a declaration that its accused TeamSite and LiveSite software products did not infringe two Vertical patents.²⁰² Vertical’s damages expert used the revenues for TeamSite and LiveSite as the royalty base.²⁰³ Interwoven argued that the expert improperly relied on the entire market value rule because the smallest saleable unit was a TeamSite software component previously sold as an add-on option to an earlier version of TeamSite.²⁰⁴

¹⁹² *Id.* at 489.

¹⁹³ *Id.* at 489.

¹⁹⁴ *AstraZeneca AB*, 985 F. Supp. 2d at 490.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ *See id.* at 490 (stating that the entire market value rule allows damages based on the entire market value of the product).

¹⁹⁸ *Id.* at 490 (alteration in original) (quoting *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1318 (Fed. Cir. 2011)).

¹⁹⁹ *Id.*

²⁰⁰ *See AstraZeneca AB*, 985 F. Supp. 2d at 490 (discussing how the patented feature satisfied an entire market value theory due to drug improvements).

²⁰¹ *See id.* (finding that the patented feature made the drug commercially viable).

²⁰² No. CV 10-04645 RS, 2013 WL 3786633, at *1, *3 (N.D. Cal. July 18, 2013).

²⁰³ *Id.* at *10.

²⁰⁴ *Id.*

The district court recognized the entire market value rule as an exception to the general principle that the royalty base should correspond to the smallest saleable patent-practicing unit.²⁰⁵ The court observed that Vertical's damages expert pointed to evidence that the patented features drove consumer demand, i.e., advertising material and statements by one of Vertical's officers.²⁰⁶ Citing a 2011 decision by another district court that predates the Federal Circuit's *LaserDynamics* decision, the court said that "[o]n occasion, courts have permitted evidence of the entire market [value] rule to be presented in reliance on articles showing that the patented feature was important to the defendant's ability to compete in the market."²⁰⁷ The court then remarked that the evidence supporting reliance on the entire market value rule was "relatively weak."²⁰⁸ But it ruled that the evidence still sufficed to create a factual issue.²⁰⁹ Thus, it held that a jury must determine whether the patented features drove consumer demand.²¹⁰

VII. District Courts Have Inconsistently Applied Federal Circuit Precedent to Lost-Profits Issues

As noted above, issues involving the entire market value rule may arise whether a patentee seeks a reasonable royalty or lost profits.²¹¹ As in the reasonable-royalty context, district courts have inconsistently applied the entire market value rule in the lost-profits context.

For instance, in *Carefusion 303, Inc. v. Sigma International*, the patent at issue covered a sensor for an infusion pump.²¹² Sigma sought summary judgment that Carefusion failed to establish entitlement to lost profits under the entire market value rule.²¹³ The court deemed evidence that the patented sensor was "an 'important' or 'critical' component of the pump" insufficient to show that it drove customer demand.²¹⁴ Similarly, the court deemed "[e]vidence that the patented sensor technology contributes to the safety of the infusion pump" insufficient.²¹⁵ Thus, the court granted summary judgment because Carefusion failed to prove that the patented sensor was "the 'basis for customer demand'" or that it "substantially create[s] the value of the component parts."²¹⁶

²⁰⁵ *Id.*

²⁰⁶ *Id.*

²⁰⁷ *Id.* at *10 (citing *DataQuill Ltd. v. High Tech Computer Corp.*, 887 F. Supp. 2d 999, 1027–28 (S.D. Cal. 2011)).

²⁰⁸ *Interwoven*, 2013 WL 3786633, at *10.

²⁰⁹ *Id.*

²¹⁰ *Id.*

²¹¹ See *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1318–21 (Fed. Cir. 2011) (allowing a reasonable royalty); *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1336–38 (Fed. Cir. 2009) (allowing a reasonable royalty); *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1549–51 (Fed. Cir. 1995) (en banc) (awarding lost profits).

²¹² No. 10CV0442 DMS WMC, 2012 WL 392808, at *2 (S.D. Cal. Jan. 3, 2012).

²¹³ *Id.* at *1–2.

²¹⁴ *Id.* at *2.

²¹⁵ *Id.* at *3.

²¹⁶ *Id.* (alteration in original) (quoting *Uniloc*, 632 F.3d at 1318).

In *Electro-Mechanical Corp. v. Power Distribution Products, Inc.*, the district court also disallowed lost profits due to a failure to demonstrate that the entire market value rule applied.²¹⁷ There, E-M and PDP sold competing electrical power distribution systems “approximately the size of a train car” for underground coal mining.²¹⁸ E-M’s patent covered a system component called a draw-out tray containing the system’s essential electrical equipment.²¹⁹ The patented draw-out tray decreased downtime for repairs and improved safety.²²⁰

E-M’s damages expert based his lost-profits opinion on profits for the entire power distribution system because he considered the patented draw-out tray the basis for customer demand.²²¹ The jury found that PDP infringed E-M’s patent and awarded lost profits.²²² PDP moved for a new trial on damages on the grounds that insufficient evidence supported the jury’s lost-profits award.²²³

The district court granted PDP’s motion.²²⁴ Citing the Federal Circuit’s *LaserDynamics* decision, the court held that a patentee who relies on the entire market value rule to seek lost profits for a larger product containing a patented component “must prove that the customer’s decision to buy the larger product in the first place is motivated by the presence of the patented component.”²²⁵ Because E-M “did not present adequate evidence at trial showing that any customer decided to purchase a . . . power distribution system in the first place for the purpose of obtaining the patented draw-out tray,” the court gave E-M the option of accepting a remittitur or agreeing to a new trial on damages.²²⁶

In *Plantronics, Inc. v. Aliph, Inc.*, however, the district court permitted an expert to opine about lost profits for a larger product containing a patented component.²²⁷ There, Plantronics and Aliph sold competing wireless, Bluetooth headsets having various software and hardware components, including noise-suppression features.²²⁸ Plantronics’s patent covered the headset’s earbud part, which helped keep the headset on the ear.²²⁹ Earbuds were sold together with headsets and separately as spare or replacement parts.²³⁰ Before trial, Aliph moved to exclude evidence of lost profits based on headset sales.²³¹

²¹⁷ 970 F. Supp. 2d 485, 487 (W.D. Va. 2013).

²¹⁸ *Id.* at 488.

²¹⁹ *Id.*

²²⁰ *Id.* at 488–89.

²²¹ *Id.* at 489.

²²² *Id.* at 487, 493.

²²³ *Electro-Mech. Corp.*, 970 F. Supp. 2d at 487, 489–90.

²²⁴ *Id.* at 493, 497.

²²⁵ *Id.* at 497 (citing *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 68 (Fed. Cir. 2012)).

²²⁶ *Id.* at 492–93.

²²⁷ No. C 09-01714 WHA, 2014 WL 691193, at *1–5 (N.D. Cal. Feb. 21, 2014).

²²⁸ *Id.* at *1–2, *4.

²²⁹ *Id.* at *1, *3.

²³⁰ *Id.* at *1.

²³¹ *Id.*

The district court denied Aliph's motion and rejected Aliph's assertion that Plantronics's expert performed apportionment improperly.²³² The court considered the *Panduit* four-factor test and decided that there was sufficient evidence of demand for the patented product, i.e., the earbuds.²³³ The court did not require evidence that the patented earbuds drove customer demand for the headsets.²³⁴

Instead, the district court relied on the test for convoyed sales and ruled that a reasonable jury could find that Plantronics satisfied that test.²³⁵ In particular, the court quoted the Federal Circuit's decision in *American Seating Co. v. USSC Group, Inc.* stating, "A patentee may recover lost profits on unpatented components sold with a patented item, a convoyed sale, if both the patented and unpatented products together were considered to be components of a single assembly or parts of a complete machine, or they together constituted a functional unit."²³⁶ Then, citing the Federal Circuit's *Rite-Hite* decision, the court articulated the test for convoyed sales as "whether the allegedly infringing component and other components constitute a functional unit or hold an interrelated relationship such that they are parts of a complete machine."²³⁷

The district court concluded that a reasonable jury could find that test satisfied because the jury could decide that an earbud alone without a headset "is of little to no use to a consumer."²³⁸ As for Aliph's arguments that its earbuds had "little to no effect" on headset sales and that customers chose its headsets for different reasons, the court said that Aliph should advance them "via admissible evidence at trial" to allow "the jury to weigh the competing evidence."²³⁹

The district court's convoyed-sales test—"whether the allegedly infringing component and other components constitute a functional unit or hold an interrelated relationship such that they are parts of a complete machine"—seems questionable in view of the Federal Circuit's *VirnetX* decision. Although *VirnetX* involved a reasonable royalty, the appellate court's reasoning that the entire market value exception would swallow the apportionment rule unless applied narrowly appears pertinent to district court's convoyed-sales test for lost profits.²⁴⁰ The court's broad functional-unit/interrelated-relationship test would seem to swallow the apportionment rule for lost profits.

In *Plantronics*, the district court also addressed Aliph's motion to exclude evidence concerning a reasonable royalty.²⁴¹ In contrast to its ruling regarding lost profits, the court required Plantronics's expert to focus on the earbuds rather than

²³² *Id.* at *1, *5.

²³³ *Plantronics*, 2014 WL 691193, at *1–2.

²³⁴ *Id.* at *2.

²³⁵ *Id.* at *3.

²³⁶ *Id.* (quoting 514 F.3d 1262, 1268 (Fed. Cir. 2008)).

²³⁷ *Id.* at *3 (citing *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1550 (Fed. Cir. 1995) (en banc)).

²³⁸ *Plantronics*, 2014 WL 691193, at *3.

²³⁹ *Id.*

²⁴⁰ *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1327–28 (Fed. Cir. 2014).

²⁴¹ *Plantronics*, 2014 WL 691193, at *1, *5–6.

the headsets.²⁴² The court characterized the earbud as the smallest saleable patent-practicing unit.²⁴³ It then ruled that the expert should “stick to the earbud” and “not veer off into overall sales revenues on . . . the overall units” when addressing the royalty base.²⁴⁴

As for the evidence necessary to pursue lost profits under the entire market value rule, at least one district court has permitted a patentee to proceed based on somewhat flimsy evidence—at least in view of the Federal Circuit’s statements in *LaserDynamics*. In *L.C. Eldridge Sales Co. v. Azen Manufacturing Private, Ltd.*, Azen moved before trial to exclude evidence from Eldridge’s damages expert.²⁴⁵ The district court denied Azen’s motion because it concluded that Eldridge satisfied the entire market value rule based on the expert’s seemingly unsupported explanation that “the patented invention is the driving force of the system” and that “[t]he remaining parts . . . are merely the vehicles to bring to life the patented invention and would not independently be consider[ed] ‘saleable units.’”²⁴⁶

VIII. Conclusion

The Federal Circuit’s *Lucent*, *Uniloc*, *LaserDynamics*, and *VirnetX* decisions provide guidance concerning apportionment and the entire market value rule. Before the *VirnetX* decision, however, district courts applied that guidance inconsistently when considering reasonable royalties and lost profits. The *VirnetX* decision should provide more clarity—at least in the reasonable-royalty context—about the need to ascertain a royalty base smaller than the smallest saleable patent-practicing unit where that unit constitutes “a multi-component product containing several non-infringing features with no relation to the patented feature.”²⁴⁷ To provide more clarity in the lost-profits context, however, the Federal Circuit may need to resolve a question concerning convoyed sales. Until then, patentees and alleged infringers should recognize that there is some room for argument—even if only a little—regarding the propriety of apportionment below the smallest saleable patent-practicing unit. Moreover, they should understand that different district courts may have different perspectives on the evidence necessary to satisfy the entire market value rule for reasonable royalties as well as lost profits.

²⁴² *Id.* at *5–6.

²⁴³ *Id.* at *5.

²⁴⁴ *Id.* at *6.

²⁴⁵ No. 6:11CV599, 2013 WL 7964028, at *1 (E.D. Tex. Nov. 14, 2013).

²⁴⁶ *Id.*

²⁴⁷ *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1327 (Fed. Cir. 2014).

