

## Recent Rulings On The Entire Market Value Rule And Impacts On Patent Litigation And Valuation

By Eric Phillips and David Boag

The Federal Circuit's 2009 decision in *Cornell University v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279 (N.D.N.Y. 2009) ushered in substantial changes to the computation of reasonable royalty damages in intellectual property litigation. Following *Cornell* and several other cases, the courts increasingly focus on whether or not the patented feature forms the basis of customer demand for a product before allowing the entire product to be used as the royalty base. As a result, identifying the royalty base has now become just as important (or more so) as identifying the royalty rate. Determining the royalty base customarily consisted of asking which products use the invention and what would be most common and feasible commercially. But now if the patented features are not shown to be the basis of customer demand, the royalty base may need to be pared down to a portion of the entire product, even if that smaller base is not independently saleable. This article presents a background of the issues, offers a framework for evaluating the royalty base, and identifies some outstanding areas of disagreement amongst the courts.

To help frame the question, let's take the example of a patent covering digital imaging technology used for eye exams. The system consists of three components: the eye imaging module, computer, and automated examination chair. In a non-litigation context, an expert may seek to determine a reasonable royalty to compensate for the use of the invention, in the context of licensing negotiations or patent valuation. Alternatively, a litigation expert may seek to determine a reasonable royalty under 35 U.S.C. 284, which provides that a prevailing plaintiff in a patent action shall be awarded damages to compensate for the infringement, but in no event less than a reasonable royalty. This reasonable royalty is often expressed as a reasonable royalty rate multiplied by a royalty base (or alternatively as a lump sum). Both the valuation and litigation expert are then faced with the question of which components to use as the royalty base. Perhaps the entire system (imaging module, computer, and chair) should be included, or at the other extreme, only a portion of the value of the imaging module should be included.

It is easy to see how the total royalties can be more sensitive to the royalty base than the royalty rate. Assume that our imaging module makes up roughly 20 percent of the value of the system, yet the royalty rate is expected to fall between 2 percent and 4 percent. In that case, selection of different royalty bases could have a 5x impact on total royalties paid, while the royalty rate only has a 2x impact on potential royalties. This has not traditionally been a major area of concern until the recent Entire Market Value Rule ("EMVR") decisions.

*Cornell*<sup>1</sup> was the first of the recent cases where the EMVR was applied in order to reduce the royalty base within an assembly. Here, *Cornell* sought reasonable royalty damages on infringing computer servers, although the patented technology related only to instruction issuance within a computer processor (a component of the server). The Federal Circuit ruled that the Entire Market Value Rule must be met in order to use the entire apparatus (here, the server) as the royalty base. This requires three conditions:<sup>2</sup>

1. [T]he infringing components must be the basis for customer demand for the entire machine including the parts beyond the claimed invention,...<sup>3</sup>

1. *Cornell Univ. v. Hewlett Packard Co.*, 609 F. Supp. 2d 279 (N.D.N.Y. 2009) (Rader by designation).

2. Further, the court noted that "it is not enough that the infringing and non-infringing parts are sold together for mere business advantage." *Id.* at 286-287.

3. The Court tweaked this requirement in its 2011 *Uniloc* case, stating that the EMVR can be used only "where the patented feature creates the 'basis for customer demand' or 'substantially create[s] the value of the component parts.'" *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1318 (Fed. Cir. 2011).

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2. [T]he individual infringing and non-infringing components must be sold together so that they constitute a functional unit or are parts of a complete machine or single assembly of parts,...; and
3. [T]he individual infringing and non-infringing components must be analogous to a single functioning unit . . . .

(Internal citations omitted).

The court then rejected the use of the server as the royalty base, finding that the patented invention did not drive demand for the server.

*Cornell* and other EMVR cases leave us with four key questions to consider when determining a royalty base: (1) what is covered by the patent, (2) what is covered under similar licenses, (3) what guidance do the courts provide, and (4) how should the apportionment be done, if needed?

## I. What Does the Patent Cover?

Often, patent claims will closely follow the commercialized product, leaving little question as to the royalty base. For a patent covering the design of a corkscrew, the corkscrew itself would seem a reasonable starting point as a royalty base. In our example of an ophthalmic imaging patent, we would first examine the scope of the patent claims to understand if the computer and exam chair may be covered. For example, if the patent includes method and/or system claims related to the computer and the processing of the imaging information, then the computer (and its specialized software) might be included in the royalty base.

So would the courts automatically allow inclusion of the computer and exam chair as long as the patent claims include those components? Not necessarily. Conversely, if the patent claims describe only the technology of the imaging module, does that mean the courts would limit the royalty base to only the imaging module? Again, not necessarily. As we discuss below, the courts may consider the EMVR when defining the royalty base, without consideration for what components are specifically cited in the patent claims. There, the EMVR typically focuses on whether or not the asserted claims form the basis of demand for the entire apparatus. Thus, patent claims provide a starting point, but do not always dictate what to include in the royalty base.

If, for example, the claims of our imaging technology patent fail to refer to the computer and chair, yet the court's EMVR requirements are met (e.g. the imaging technology creates the demand for the

system), then the entire system may be properly used as the royalty base.

On the other hand, if the claims of our patent do include the computer and chair, yet the patented technology does not create the demand for the system, then things get murky. The plaintiff's argument here (for a larger royalty base) is that (a) the entire apparatus is in fact the patented device, and (b) the EMVR criteria only applies where unpatented products are combined with patented products. A Pennsylvania district court applied this logic in *University of Pittsburgh of the Commonwealth System of High Education v. Varian Medical Systems, Inc.*<sup>4</sup> There, the court noted that the "United States Court of Appeals for the Federal Circuit has repeatedly held, and Varian acknowledges in its brief, that the EMVR only applies when unpatented products are combined with patented products." (citing *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1318 (Fed. Cir. 2011)). Thus, if we can call the entire system "the patented product," then it can form the royalty base. Similarly, a California court in *Man Machine Interface Technologies, LLC v. Vizio, Inc.* declined to apply the EMVR, and allowed the use of a remote control as the royalty base because Claim 1 of the patent describes a "remote control device," not merely the patented feature.<sup>5</sup>

Yet it is not clear that this argument applies universally. In *Lucent Technologies, Inc. v. Gateway, Inc.* 580 F.3d 1301 (Fed. Cir. 2009), the Federal Circuit applied the EMVR where the only product at issue was Microsoft Outlook and hence, the distinction between patented and unpatented products did not seem to influence the applicability of the EMVR. A similar situation occurred in *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292 (Fed. Cir. 2011), which also dealt with software programs. Although the *University of Pittsburgh* and *Man Machine Interface Technologies* do not seem to square with *Lucent* and *Uniloc*, a common thread is that the courts are

**Patent claims provide a starting point, but do not always dictate what to include in the royalty base.**

4. *Univ. of Pittsburgh of the Commonwealth Sys. of Higher Educ. v. Varian Med. Sys., Inc.*, No. 08cv1307, 2012 U.S. Dist. LEXIS 17162, at \*27 (W.D. Pa. Feb. 10, 2012).

5. *Man Machine Interface Techs., LLC v. Vizio, Inc.*, No.8-10-cv-00634 (C.D. Cal. Feb. 27, 2012, Order at 13, ECF No. 185).

attempting to determine the nature of the *patented invention*, and then using that as a royalty base instead of relying solely upon the claim language or defining a patented product.

## II. What do Comparable Licenses Cover?

During a licensing negotiation, each party will likely be cognizant (to varying extents) of royalty terms it has agreed to in similar circumstances, and possibly of licenses by other industry players. If any such licenses can confidently be considered a “comparable” license, then the licensed product specified in such an agreement may be instructive. Of course, an agreement may be considerably more useful if it is an actual license to the patent at issue.

In the context of litigation, such “comparable” licenses may not provide sufficient guidance for a few reasons. First, the exact terms of such agreements may not be known. Second, in the past few years, the courts have raised the bar on what may be considered a comparable agreement. Third, if there is a conflict between comparable licenses and the Entire Market Value Rule, it is unclear which should take precedence. In other words, if comparable licenses use the entire apparatus for the royalty base, yet the claimed feature fails the Entire Market Value Rule (*i.e.* it does not drive demand for the apparatus), then what is the appropriate royalty base? The courts have not yet provided consistent guidance (more on this topic later). Because of that inconsistent treatment, it is conceivable that an expert or a court may try to take a royalty from a comparable agreement that typically applies to an assembly, then apply it to a smaller revenue basis because of a failure to meet the EMVR.

## III. What Guidance do the Courts Provide?

Apparently in response to (a) many large patent damages claims over the last decade, and (b) early drafts of the Patent Reform Act,<sup>6</sup> the Federal Circuit began applying the Entire Market Value Rule in 2009 as a means of more strictly defining the royalty bases in reasonable royalty analyses.<sup>7</sup> As noted above, the use of the entire unit as the royalty base shall require

6. See, for example, the draft Patent Reform Act of 2009, which stated: “Upon a showing to the satisfaction of the court that the patent’s specific contribution over the prior art is the predominant basis for market demand for an infringing product or process, damages may be based upon the entire market value of the products or processes involved that satisfy that demand.” This and all other damages-related language was later discarded before passing as the 2011 America Invents Act.

7. For more information about the cases described herein, refer to VLF Consulting’s IPValueBlog, which conveniently tags cases and issues by topics: [www.ipvalueblog.com](http://www.ipvalueblog.com)

that “(1) the infringing components must be the basis for customer demand for the entire machine including the parts beyond the claimed invention, (2) the individual infringing and non-infringing components must be sold together so that they constitute a functional unit or are parts of a complete machine or single assembly of parts, and (3) the individual infringing and non-infringing components must be analogous to a single functioning unit.”

The Federal Circuit’s EMVR guidance has left several unanswered questions for the district courts, resulting in what seem to be conflicting positions on some issues:

**The Federal Circuit’s EMVR guidance has left several unanswered questions for the district courts to sort out.**

### 1. Actual Licenses or EMVR?

If actual licensing practices point to a larger royalty base but the EMVR directs us to apportion the value, it is unclear which takes priority. In our imaging technology example, assume that the patentee has entered into licensing agreements calling for a royalty base of the entire system (imaging module, computer, and chair). But if the patented features are minor improvements to the imaging module and are not demanded by customers, would courts accept the entire system as a royalty base?

The EMVR requirements as typically described by the Federal Circuit would seem to reject the entire system as the royalty base. The Federal Circuit summarizes in *LaserDynamics v. Quanta Computer*:<sup>8</sup> “[w]e affirm 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 salable patent-practicing unit, without showing that the demand for the entire product is attributable to the patented feature.” Notably absent is an ending such as “... unless normal licensing practices indicate otherwise.” The courts have not yet addressed the issue head on, but *Oracle* and *Lucent* appear to address the issue indirectly. The district court in *Oracle America, Inc. v. Google Inc.*<sup>9</sup> seemed to prefer the EMVR

8. *Laserdynamics, Inc., v. Quanta Computer, Inc.*, No. 2011-1440, 2011-1470, 2012 U.S. App. LEXIS 18441, at \*32 (Fed. Cir. Aug. 30, 2012).

9. *Oracle Am., Inc. v. Google Inc.*, 798 F. Supp. 2d 1111, 1115 (N.D. Cal. 2011).

guidelines, ruling that the entire market value of Android could not be used even if the parties would have negotiated a license for Java for use in Android, because the features derived from the asserted claims were not the basis of customer demand for Android. The Federal Circuit and district courts in *Lucent v. Gateway*<sup>10</sup> also did not address this issue directly, although they did call for an apportionment of the market value of Outlook where one might naturally presume that the entirety of Outlook would be covered in a real-world licensing agreement.

On the other hand, some district courts have been more persuaded by real-world licensing practices. In *ActiveVideo v. Verizon Communications, Inc.*,<sup>11</sup> the Virginia court noted that the patented technology was “at least a substantial basis of customer demand” and then ruled that the “patentee may base a reasonable royalty rate on the entire market value of an accused product where the evidence presented demonstrates that, in a hypothetical negotiation, it would be appropriate to do so.” A district court in Texas seemed to go one step further in *Lighting Ballast Control v. Philips Electronics. North America. Corp.*,<sup>12</sup> ruling that even though both parties agreed the EMVR requirements were not met, plaintiffs could use the entire product sales as the royalty base, apparently because the “comparable” licenses do the same. Similarly, another Texas court ruled in *Mondis Technology v. LG Electronics* that the EMVR requirements were not met, yet plaintiffs could use the entire product as the royalty base because the expert largely based his opinion on 13 comparable licenses that provide for a royalty based on the entire value of the licensed products.<sup>13</sup> The judge concluded that this larger royalty base was “economically justified” as the Federal Circuit permitted in *Lucent*.

## 2. “A” or “The” Basis of Demand?

The *Cornell* court ruled that to use the entire apparatus as a royalty base, the infringing components must “be the basis for customer demand for the entire machine,” yet it remains unclear if being “a” basis

is sufficient. The court in *ActiveVideo* accepted the entire royalty base where the patented technology was “at least a substantial basis of customer demand.” However, a New York district court in *Schindler v. Otis*<sup>14</sup> came to a different conclusion. There, the court precluded the plaintiff’s expert from testifying that the reasonable royalty base should consist of infringing Otis elevator installations, where the patented feature was a “substantial basis for demand” for the elevator installations. The court ruled that the patented feature was desirable and offered competitive advantages, but was not “the” basis of demand. Hence, the court ruled that the expert used the wrong standard when he concluded that the patented feature was a “substantial basis for demand” instead of “the” basis for demand.

This also raises the question as to the meaning of “basis of demand.” The Federal Circuit elaborated somewhat in its August 2012 opinion in *Laserdynamics*. Here, the patented technology covered a method of optical disc discrimination that enables an optical disc drive (“ODD”) to automatically identify the type of optical disc (e.g. CD versus DVD) that was inserted into the ODD, thus saving the user from having to manually identify the type of disc. The court noted: “[i]t is not enough to merely show that the disc discrimination method is viewed as valuable, important, or even essential to the use of the laptop computer. Nor is it enough to show that a laptop computer without an ODD practicing the disc discrimination method would be commercially unviable. Were this sufficient, a plethora of features of a laptop computer could be deemed to drive demand for the entire product. To name a few, a high resolution screen, responsive keyboard, ...”

## 3. Should Value be Apportioned Below the Level of “Smallest Saleable<sup>15</sup> Unit”?

In *Cornell*, the court called for a royalty base that was “the smallest saleable infringing unit with close relation to the claimed invention.” Later Federal Circuit rulings seem to set this “smallest saleable unit” concept aside, until the Federal Circuit reaffirmed the concept in its August 2012 decision in *Laserdynamics*.<sup>16</sup> As a result, some courts have accepted a royalty base of the “smallest saleable unit,” while

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10. *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1339 (Fed. Cir. 2009).

11. *ActiveVideo Networks, Inc. v. Verizon Comm’s, Inc.*, 2-10-cv-00248 (E.D. Va., Aug. 3, 2011, Order) (Jackson).

12. *Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, No. 7:09-CV-29-O, 2011 U.S. Dist. LEXIS 154682, at \*14-20 (N.D. Tex. June 10, 2011).

13. *Mondis Tech., Ltd. v. LG Elecs., Inc.*, No. 2:07-CV-565, 2011 U.S. Dist. LEXIS 78482, at \*20-22 (E.D. Tex. June 14, 2011).

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14. *Inventio AG v. Otis Elevator Co.*, No. 06 Civ. 5377, 2011 U.S. Dist. LEXIS 88965, at \*20-21 (S.D.N.Y. June 22, 2011).

15. An additional area of (significantly less) controversy involves the spelling of saleable versus salable. The Federal Circuit has used both spellings, but the authors of this article remain agnostic on the issue.

others further apportioned the value (to account for the patented features) if called for under the EMVR.

In our imaging technology example, assume that the imaging module is the smallest saleable unit, and further that the patented technology is a minor feature that is not a substantial basis of customer demand for the imaging module. Courts appear to be mixed as to whether or not the imaging module (the smallest saleable unit) should be further apportioned for use as a royalty base.

A California district court in *Broadcom Corp. v. Emulex Corp.*<sup>17</sup> adopted the “smallest saleable unit” concept and rejects a further apportionment. There, defendants claimed that the royalty base should be cores (which directly included the patented technology) that went into larger chips. The plaintiff argued that the chip was the smallest saleable unit (because the infringer never sold cores even if others did) and that the chip was used as the royalty base in other agreements. In ruling for the plaintiff, the court states that “the requirements of the entire market value rule must be met only if the royalty base is not the smallest saleable unit with close relation to the claimed invention.” (citing Cornell Univ., 609 F. Supp. 2d at 288). In other words, if we’ve already identified the smallest saleable unit, we need not consider whether or not the claimed invention is the basis for demand for it. The court also notes that “[n]either party contends that the entire market value rule requirements have been met.”

However, in *Lucent*,<sup>18</sup> the Federal Circuit seemed to set aside this concept of “smallest saleable unit” when it rejected the use of total revenues from Outlook as a royalty base. Although the Courts did not clarify what might be the smallest saleable unit, it seems reasonable to assume that Microsoft did not or would not sell at a smaller level than the Outlook program. On remand, the district court ruled that not

only would the total sales of Microsoft Outlook (the infringing product) have to be pared down to account for the portion of customers demanding the patented feature, but that an additional apportionment is also called for, to account for other features present.

Similarly, in *Mirror Worlds, LLC v. Apple, Inc.*,<sup>19</sup> the district court ordered an apportionment of the royalty base, despite plaintiff’s argument that it was already using the smallest saleable unit. Here, the judge rejected the jury’s damages award and ruled that the accused software features were not shown to meet the EMVR requirements, thus requiring an apportionment of the royalty base.

Because of the conflicting guidance from the courts in some of these key areas, litigators and experts need to be well-versed in the issues. But until the courts rule more uniformly on these issues, the parties may face unpredictable *Daubert* rulings.

## IV. How to Calculate an Appropriate Base or Apportionment?

After determining that an apportionment of the royalty base is appropriate, the valuation or litigation expert has a few issues to consider. Generally, the expert will first consider whether or not the smallest saleable unit that contains the patented invention would be an appropriate royalty base. At this point, the expert may identify the relevant price – either selling price or purchase price – for the smallest saleable unit. In some cases, further apportionment may be called for, while in other cases, the courts may set aside the actual price of the smallest saleable unit and allow a larger royalty base. In *Fractus, S.A. v. Samsung Electronics Co., Ltd.*,<sup>20</sup> the plaintiff argued that although its patented cell phone antennas were sold at \$1.44 (roughly 1 percent of the phone value), 10 percent of the value of the \$140 phone (*i.e.* \$14) was attributable to the antenna based on its importance and benefits. The Texas district court held that sufficient evidence supported the 10 percent apportionment in upholding the jury award that was close to Fractus’ damages claim.

The expert may also consider apportioning the royalty base using some quantifiable proxy for value, such as a count of features, number of lines of code, manufacturing costs, or a benchmark product in the industry. While such methodologies have the advantage of being relatively easy to analyze and to under-

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16. In its decision, the court did not directly address whether or not an apportionment below the level of “smallest saleable unit” may be appropriate. The court states: “[I]t is generally required that royalties be based not on the entire product, but instead on the ‘smallest salable patent-practicing unit’... The entire market value rule is a narrow exception to this general rule.”

17. *Broadcom Corp. v. Emulex Corp.*, No. SACV 09-01058, 2011 U.S. Dist. LEXIS 154416, at \*17 (C.D. Cal, Dec. 13, 2011).

18. See, *e.g.* *Lucent Techs.*, 580 F.3d 1301, and the District Court’s Orders on remand, *Lucent Techs., Inc. v. Gateway, Inc.*, 3:07-cv-02000 (S.D. Cal. July 13, 2011, Order, ECF No. 1323) and *Lucent Techs., Inc., v. Gateway, Inc.*, 3: 07-cv-02000 (S.D. Cal. Nov. 10, 2011, Order, ECF No. 1478).

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19. *Mirror Worlds, LLC v. Apple, Inc.*, 784 F. Supp. 2d 703, 727 (E.D. Tex. 2011).

20. *Fractus, S.A. v. Samsung Elects. Co.*, No. 6-09-cv-203, 2012 U.S. Dist. LEXIS 90284 (E.D. Tex., June 28, 2012).

stand, they generally require some expert judgment. For example, should all the features or lines of code be weighted equally, or should the expert apply some weighting to account for more important features?

The expert may also consider evidence of use or perceived value of the patented feature. In our imaging system example, assume we have data indicating that only 50 percent of users actually employ the features of the invention. So the expert may decide to reduce the royalty base by half, but he also should consider whether or not additional apportionment is called for. For example, the district court on remand in *Lucent v. Gateway*<sup>21</sup> considered an expert's analysis that had reduced the royalty base to account for the portion of customers that actually used the patented feature. Yet the court rejected that reduced royalty base, concluding that Lucent needed to do an additional apportionment to account for all of the other features demanded by users.

In other cases, surveys or conjoint analyses may provide more direct evidence of the value of the patented invention. Conjoint analyses are statistical techniques that attempt to quantify the value that buyers place on different features of a product or service. Traditionally, the method presents a group of respondents with a variety of slightly-differing products and asks the respondents to rate, rank, or value each product. Customized surveys and analyses have several disadvantages that have kept their usage in litigation and valuation relatively low. First, such studies add complexity and cost to a valuation assignment. In addition to the tens of thousands of dollars in costs, an additional expert (or more) is typically needed. Second, in cases where the relevant buyers are a few corporate buyers instead of retail consumers, surveys may not be appropriate or possible. For example, with our imaging technology, it may be unfeasible to conduct a survey of a large number of optometrists who use the product, especially if the pool of possible doctors is small or unwilling. Third,

the dispositive element of a patent may not be clear until the late stages of litigation; at that point, it may not be feasible to complete a study in the allotted time. Fourth, the quality and reliability of the results depends (as always) on the design of the survey. Yet despite these disadvantages, courts may be increasingly expecting such levels of precision from the experts where damages claims are particularly high. As the Federal Circuit's Judge Posner recently wrote in *Apple, Inc. v. Motorola, Inc.*<sup>22</sup> (rejecting an expert's analysis that used inadequate survey evidence), "[u]ncertainty is a [sic.] bad; it is tolerated only when the cost of eliminating it would exceed the benefit."

## V. Final Thoughts

Looking forward, Judge Posner's directive, despite lacking somewhat in details, will surely prompt some constructive discussions between experts and litigators. The cost-benefit calculus remains a bit murky, and we are also left wondering if the courts will apply the same (higher) standards in a \$1 million damages case as compared to a \$100 million case.

The increased focus amongst the courts on the EMVR leaves damages analysts with a couple open issues. First, experts generally expect some convergence between valuation and litigation approaches. Due to the existing areas of inconsistency among district courts, such convergence may not be a given at the present time. Second, and most importantly, experts and clients would be well served by considering the range of expectations from the various courts, and looking even closer at relevant decisions in the applicable district. ■

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21. *Lucent Techs., Inc. v. Gateway, Inc.*, 3:07-cv-02000 (S.D. Cal., July 13, 2011, Order, ECF No. 1323).

22. *Apple, Inc. v. Motorola, Inc.*, No. 1:11-cv-08540, 2012 U.S. Dist. LEXIS 105387, at \*29 (N.D. Ill. May 22, 2012).