



THE ENTIRE MARKET VALUE RULE: THE EMBATTLED FLANK

Michael A. Einhorn, Ph.D.

1. INTRODUCTION

In a recent decision, *Laserdynamics v. Quanta Computer*,¹ the Federal Circuit in August, 2012 moved further to restrict the application of the entire market value rule (EMV R) in the valuation of reasonable royalties attributable to damages arising from patent infringements.² The Court's opinion affirmed that the EMVR is an exceptional rule that can be used only when patented feature is the basis for consumer demand. Rather, the general standard for a royalty base now appears to be established in *Cornell v. Hewlett Packard*;³ *i.e.*, a royalty award for patent infringement must be based on the smallest salable patent-practicing unit.

That said, a 2011 decision in the Eastern District of Texas, *Mondis Technology v. LG Electronics*,⁴ may yet provide a suitable rationale where the EMVR may survive. Ruling on a Daubert motion to disqualify a plaintiff expert, the court here exercised its discretion to allow expert testimony that applied the EMV R even though the patented component did not serve as the basis for consumer demand. The expert here credibly presented a

1. *Laserdynamics*, *infra* note 23.

2. Under the EMVR, an owner of a patented input or technology may be awarded reasonable royalties as a percentage of revenues or profits arising from net sales of a wider accused product that uses it as one particular component.

3. *Cornell*, note 4.

4. *Mondis*, note 34.

number of contracts where the royalty base was ordered upon sales of final product that included as a working component the patented technology. .

From an economic perspective, one hopes that future courts come primarily to recognize economic reality and identify the critical relevance of market information, which is the best guide to a proper decision. In the breach, courts may seek to apply results from consumer surveys and methods of apportionment that may be consistent with legal precedent, but are every inexact and very subjective. If unhinged from economic reality, the signals to both patentees and infringers are diffuse, and thus not conducive to deterring infringement or achieving a reasonable negotiation or settlement.

2. THE ENTIRE MARKET VALUE RULE

In a three part rule, the Entire Market Value Rule “permits recovery of damages based on the value of a patentee’s entire apparatus containing several features when the patent-related feature is the basis for customer demand.⁵ This requirement has recently attracted attention in a number of decisions handed down by the Federal Circuit and related lower courts.

Judge Rader of the Federal Circuit emphatically limited in 2009 the application of the EMVR when sitting by designation in the District Court case of *Cornell v. Hewlett Packard*.⁶ As a plaintiff, Cornell University claimed that HP infringed upon its ‘115 patent that issued out-of-order processor instructions that increased the performance of parallel computing. After Cornell’s damages expert claimed a reasonable royalty as a percentage of sales of all HP servers and workstations bearing the application, Judge Rader limited the expert and later modified the eventual jury award. Unless plaintiff can prove that the infringing component is the *basis for customer demand* for the entire machine, reasonable royalties for an infringed product should be valued on a royalty base that incorporates the “smallest salable patent-practicing unit”⁷

5. *Rite-Hite Corp. v. Kelley Co.*, 56 F. 3d 1538 (Fed. Cir. 1987). Under the three necessary conditions established in *Rite Hite*, 1.) the infringing component forms the basis for consumer demand for the entire apparatus, 2.) the infringing and non-infringing components are parts of a complete machine or single assembly of parts, and 3.) the infringing and non-infringing components are analogous to a single functioning unit.

6. 609 F. Supp. 2d 279 (N.D.N.Y. 2009).

7. *Id.*, at 283, 287-88, citing *Rite Hite*, *supra* note 5, at 1549, n. 9.

In the later matter of *Lucent Technologies, Inc. v. Gateway, Inc.*⁸, Judges Michel, Newman, and Lourie of the Federal Circuit considered *en banc* an infringing application of Lucent’s calendar date-picking algorithm that was used in Microsoft’s Outlook programs embedded in Gateway computers. Although the Circuit Court panel remanded the matter due to specific legal problems in the jury’s previous award, the judges reaffirmed in dicta that the patentee must prove that the patent-related feature is the basis for the customer demand if the EMV R is to be applied.⁹

However, the panel stated an interesting qualification: “There is nothing inherently wrong with using the market value of the entire product, especially when there is no established market value for the infringing component or feature, *so long as the multiplier accounts for the proportion of the base represented by the infringing component or feature.* .” [emphasis mine]¹⁰ Thus the conclusion: “Even when the patented invention is a small component of a much larger commercial product, awarding a reasonable royalty based on either sale price or number of units sold can be economically justified.”¹¹

The Federal Circuit became more restrictive in *Uniloc USA v. Microsoft Corp.*¹² Uniloc’s expert used an EMVR solely to check the reasonableness of a putative award by comparing the amount (\$56.5 million) to the sales of accused products Office and Windows (\$19.3 billion). The Court ruled that the use of the \$19.3 billion base was “improper under the EMVR because, among other reasons, t]he Supreme Court¹³ and this court’s precedents do not allow consideration of the entire market value of accused products for minor patent improvements *simply by asserting a low enough royalty rate.*” [emphasis mine]¹⁴ What is necessary here is *apportionment between the*

8. 580 F 3d 1301; 2009 U.S. App. LEXIS 20325; 92 U.S.P.Q. 2D (BNA) 1555.

9. *Id.*, at 1336. citing *Rite Hite*, note 5, at 1549.

10. *Id.*, at 1339.

11. *Id.*

12. 632 F. 3d 1292, at 1319-20 (Fed. Cir. 2011).

13. *Garretson v. Clark*, 111 U.S. 120 (1884). “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.” At 121. The Court explained that “the entire value of the whole machine, as a marketable article, [must be] properly and legally attributable to the patented feature.”

14. *Id.*

respective values of infringing and non-infringing components.¹⁵ Moreover, “the fact that the entire market value was brought in as only a check is of no moment.”¹⁶

Sitting again by designation in the Eastern District of Texas, Judge Rader came in 2011 to disqualify a plaintiff expert claim that attempted to recover from defendant Red Hat a percentage of sales of its Linux-based operating system that bore an infringing feature that allowed computer users to switch among multiple workspaces.¹⁷ The judge wrote that the claimed invention is but one relatively small component in an operating system that included over a thousand components. The judge further discounted the relevance of a cited online forum that showed that some users viewed the feature as essential. Finally, the expert here failed to attempt to recognize that most of defendants’ sales came from products that did not use the patented feature.

Disqualifications of testifying experts on EMVR also appeared in 2011 District Courts in *Versata Software Inc. v. SAP America Inc.*,¹⁸ *Rolls-Royce v. United Technologies*,¹⁹ and *Inventio AG v. Otis Elevator Company*.²⁰ In the latter, the Court found that the patented product feature was a basis for demand and capable (in its absence) of putting a competitor at a disadvantage. However, “as long as other features of a product contribute to the customer’s decision, Supreme Court precedent [supra note 14] ... demands that there be an *apportionment of the defendant’s profits and patentee’s damages between the patented features and the various unpatented features of the*

15. Id.

16. Id.

17. IP Innovation LLC v. Red Hat, Inc., 2010 WL 986620 (E.D. Tex.)(March 2, 2010).

18. 2:07-CV-153, ECF No. 412 at 1 (E.D.Tex. Jan 6 2011); Id., 2011 U.S. Dist. LEXIS 10233 at * 13 (E.D. Tex. Sept 9, 2011). ”Expert’s ... reasonable royalty is nothing more than an unsupported percentage of SAP’s total revenue.”

19. 1:10 cv456 (LMB/JFA) (E.D. Va. 2011). Rolls Royce sought to recover damages for UTC’s infringement of a patent in engine fan blades based on an EMV R applied to the defendant’s sales of engines. “Rolls-Royce’s expert has not cited any economic evidence that the design of UTC’s fan blade is the basis for customer demand for the entire engine.”

20. 06 Civ. 5377 (CM) (S.D.N.Y. 2011). “The evidence does not provide a sound economic connection between the product’s desirability and any contention that... [the allegedly infringing product] was the basis for public demand for an Otis ...elevator system.”

whole machine.”²¹ [emphasis mine] Moreover, without some kind of “marketplace-wide evidence of demand sensitivities” (e.g., statistical or regression analysis, customer surveys, customer interviews), there was no way to know “whether the presence or absence of the allegedly infringing feature was of such paramount importance that it substantially created the value of the component parts.”²²

3. *LASERDYNAMICS V. QUANTA COMPUTER*

In a matter decided in August, 2012, LaserDynamics sued Quanta Computer, Inc., (QCI) for infringement of its patented optical disc drive technology (ODD) that appeared in QCI’s laptop computers.²³ After a jury awarded LaserDynamics a \$52 million dollar verdict fixed as a royalty percentage of QCI’s laptop sales, the District Court here found that the jury improperly used the EMV R and ordered a new trial. A second jury then awarded Laser Dynamics a sum of \$8.5 million using a 2 percent running royalty gleaned from a 2006 litigation settlement agreement. Both sides then appealed to the Federal Circuit.

Judge Reyna remanded on the second award. Besides reaffirming the Federal Circuit’s basic position on EMVR,²⁴ the judge also reaffirmed from *Uniloc* that this requirement may not be avoided simply by the use of a very small royalty rate affixed to a large royalty base.²⁵ The judge went further to disallow even the disclosure to the jury of total revenues earned by the complete product, rather than the patented component only, for fear that it “cannot help but skew the damages horizon for the jury, regardless of the contribution of the patented component to this revenue.”

21. *Id.*, at *5.

22. *Id.*

23. Case No. 11-1440 (Fed. Cir. Aug. 30, 2012) (Reyna, Judge).

24. *Id.*, at Section III.A.1. “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.”

25. *Id.*, at Section III.A.1. Citing *Uniloc*, at 1319-20. “We recently rejected such a contention [re *Uniloc*], raised again in this case by LaserDynamics, and clarified that the Supreme Court and this court’s precedents do not allow consideration of the entire market value of accused products for minor patent improvements simply by asserting a low enough royalty rate.”

Sounding every bit like the District Court in *Inventio*,²⁶ the Circuit Court drew more restrictive evidentiary requirements for use of EMVR. “It is not enough to merely show that the ODD is viewed as *valuable, important, or even essential* to the use of a laptop computer *nor is it enough to show that a laptop computer without an ODD would be commercially unviable.*” [emphasis mine] The critical feature inheres not in technical characteristics but in the underpinnings of consumer demand; what matters is the “presence of the functionality that *motivates consumers to buy a laptop computer in the first place.* It is this *latter and higher degree of proof that must exist* to support an entire market value rule theory.” [emphasis mine] In this respect, the plaintiff’s expert was faulted for not “*providing any market studies or consumer surveys* to ascertain whether the demand for a laptop computer is driven by the patented technology.” [emphasis mine]

This last paragraph presents a very high evidentiary hurdle that must be crossed if the EMVR is to be applied to a damage assessment. The use of EMVR would apparently require the introduction of consumer surveys and complex statistical techniques that would relate buying decisions for the claimed invention to a number of specific measurable features variables that can be simultaneously calibrated with the purchase.²⁷ In this regard, courts entering this theater of evidence have exercised discretion to disqualify in *Fractus S. A. v. Samsung*²⁸ and *Mirror Worlds Inc. v. Apple LLC*.²⁹ Whether the data to support these requirements are obtainable at all in a great number of technology markets is arguable.

Moreover, courts now require – based on 1884 Supreme Court precedent (supra note 13) ---- the use of apportionment techniques to break out the respective values of infringing and non-infringing components in an accused apparatus. As recognized by the Congress when drafting the Patent Act of 1946, apportionment is a hard task

26. *Inventio*, supra note 20, and surrounding text.

27. D. Weaver, A. Ross, and K. Foster, A Few Key Points to Remember When Using a Survey in a Patent Damages Case, 83 FTCJ 35, 11/4/11.

28. 6:09-cv-00203, ECF No. 896 at 2-3 (E.D. Tex. Apr. 29, 2011). The disqualified survey sought customer preference regarding the *general* feature (internal cell phone antenna) rather than the *particular* feature of the claimed invention, which was an improvement upon the general feature.

29. 6:08-cv-88, 2011 U.S. Dist. LEXIS, 36451 (E. D. Tex. Apr. 4, 2011). Disqualified surveys considered the influence of only one of three patented features, were not tied to any hardware devices, and were limited to one of three operating systems.

for courts.³⁰ In this regard, one such post-*Uniloc* effort seems to have survived court scrutiny, but is harshly critiqued by attorneys Martha Gooding and William Rooklidge for being little more than a 50% split.³¹ Yet another expert apportionment that survived a Daubert motion was basically a restatement of the opinion of the plaintiff's technical expert.³² In yet a third, the Court permitted an apportionment under EMV R to a patented feature that "substantially contributed to the value of the system", rather than serve as the basis for consumer demand of the infringing system.³³ Apportionments may now be expected to have a more critical role in patent damage valuation, and a more problematic one.

4. *MONDIS TECHNOLOGY V. LG ELECTRONICS*

The EMVR may yet have application given the outcome of *Mondis Technology v. LG Electronics*.³⁴ The Eastern District of Texas in 2011 considered an action brought by Mondis Technology for infringement of a patented component in monitors and televisions sold by the defendant. The patented component was clearly not a primary basis for consumer demand for either product. Nonetheless, a magistrate rejected the defendant's Daubert motion to disqualify the plaintiff expert Steven Magee, even though Dr. Magee based his percent royalty calculations on a sales base of accused monitors and televisions.

In fixing a royalty base, Dr. Magee considered the terms of other contracts previously negotiated in the market. The expert presented in his technical analysis at least thirteen

30. Congress eliminated in the new act the infringer's profits as a remedy for utility patent infringement partially for concerns arising from improper apportionment. H.R.Rep. No. 1587, 79th Cong. 2d Sess. 2 (1946); see also *KoriCorp. v. Wilco Marsh Buggies & Draglines Inc.*, 761 F. 2d 649, 654-55 (Fed. Cir. 1985).

31. M. K. Gooding and W. C. Rooklidge, "Reasonable Royalty Patent Infringement Damages After *Lucent v. Gateway* and *Uniloc v. Microsoft*: Reports of the Dearth of Patent Infringement Damages are Greatly Exaggerated", 83 PTCJ 235, 12/16/2011. The technique appeared in a remand of *Lucent*, supra note 6

32. *Pact X PP Technologies, AG v. Xilinx, Inc., et. al.*, 2-07-cv-00563 (E. D.TX, May 11, 2012, Order)(Payne).

33. *ActiveVideo Networks, Inc. v. Verizon Communications*, 2:10-cv-2448, 2011 U.S. Dist. LEXIS 41722 (E.D. Va. July 15, 2011).

34. 2:07-CV-565-TJW-CE (E. D. Tex., 2011), 2011 U.S. Dist. LEXIS 78482.

comparable licenses of the patents-in-suit. Moreover, defendant had used these same licenses in determining its respective valuation before the court. *Each of these licenses had a fixed royalty on the entire base of the licensed product.*

The court cited *Lucent* and ruled that the use of the EMVR in this matter was economically justified.³⁵ Per the court's opinion, both sides had acknowledged "between 13 and 16 comparable licenses ... to the patents-in-suit that provide for a royalty based on the entire value of the licensed products." In this regard, "the Federal Circuit has repeatedly emphasized the importance of such licenses in the reasonable royalty analysis."³⁶

The court here fully grasped the irony of the situation.³⁷ "The patented feature *does not provide the basis for the customer demand*, but on the other hand, the most reliable licenses are based on the *entire value of the licensed products.*" [emphasis mine] In the court's mind, the adjustment of the royalty percentage affixed to an accepted royalty base was less speculative than *attempting to apportion* the value of the patented features within the royalty base, and affixing a new royalty rate on the derived part. The "basis for consumer demand" of *Uniloc* thus could not be "absolute".³⁸

Also inferior would be rejecting the previous contract history altogether. Such contracts were potentially the most reliable evidence in this case and met the evidentiary standard in *ResQNet v Lansa*.³⁹

35. *Id.*, "Even when the patented invention is a small component of a much larger commercial product, awarding a reasonable royalty based on either sales price or number of units can be *economically justified* [emphasis original]." Citing *Lucent* at 1339, *supra* note 6 and surrounding text

36. *Id.*, citing *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d. 860, 869-73 (Fed. Cir. 2010). See also *Lucent*, *supra* note 8, at 1329 (a patentee cannot sustain its burden of proof with "evidence which amounts to little more than a recitation of royalty numbers"); *Wordtech Systems, Inc., v. Integrated Network Solutions*, 609 F. 3d at 1318-22 (patentee's royalty analysis was a "pattern of guesswork" that provided no bases for comparison); *Finjan, Inc. v. Secure Computing Corporation*, 626 F. 3d at 1211-12 (Fed Cir. Nov. 4, 2010) (use of past licenses "must account for differences in the technologies and economic circumstances of the contracting parties")

37. *Id.*, at * 15.

38. *Id.*

39. *ResQNet*, *supra* note 36.

The *ResQNet* decision deserves more attention. Plaintiff expert in *ResQNet* produced seven licenses for the court to consider in determining a reasonable royalty on an infringing product, and set forth something of a composite 12.5% as a proper outcome.⁴⁰ Issuing a remand on a lower court's decision, the Federal Circuit ruled that that six of the seven licenses failed entirely to prove any value in the contested patent, while the last contained a lower royalty rate that the expert had opined.⁴¹ Proper consideration of potential benchmark licenses cannot amount to a simple "recitation of royalty numbers, one of which is arguably in ballpark, particularly when it is doubtful that the *technology of those license agreements is in any way similar to the technology being litigated* ." [emphasis mine]⁴² The *ResQNet* decision would apparently disqualify the use of median or average rates gleaned from license tables presented with little context regarding the details of the surrounding application.⁴³

The *Mondis* and *ResQNet* decisions may then provide legal precedence for economists and accountants willing to examine carefully the reality of negotiated contracts, *and stick to the facts at hand*.

4. LICENSING AND ECONOMIC ACTIVITY

The above discussion may call to mind the famous aphorism that "determining a fair and reasonable royalty [seems] often to involve more the talents of a conjurer than those of a judge."⁴⁴ Yet the *Mondis* decision can be defended with some economic reasoning. Both the royalty base and rate of a technology license are negotiated through mutual consent. From an economic perspective, there is no reason why a patent owner would be able to extract more revenue from a licensee simply because it has a different royalty base. Rather, the final dollar outcome of a negotiation would expectedly reflect the same variables that affect any bargaining --- demand elasticity, competitive alternatives, prior art, ability to design around, monopoly and monopsony power, and

40. *Id.*, at 870.

41. *Id.*

42. *Id.* at 869, citing *Lucent*, *supra* note 8, 580 F. 3d at 1329.

43. This was an issue found in *IP Innovation*, *supra* note 17, and surrounding text.

44. *Fromson v. Western Litho. Plate & Supply Co.*, 853 F. 2d 1568, 1574 (Fed. Cir. 1988).

other economic factors that may affect buyer and seller bargaining power, and willingness to transact. To reiterate, base and rate are inversely related. Expectedly, *the larger the negotiated base, the lower the corresponding rate.*

The importance of this relation between base and rate was acknowledged in *Marconi Wireless Telegraph Co. of America v. U.S.*; The Court of Claims here wrote that “it would make no difference in the ultimate compensation to the plaintiff if the reasonable royalty were fixed at 5 percent of the selling price of the complete machine rather than 20 percent of one quarter of the sales price of the machine.”⁴⁵ And the Federal Circuit in 1991 upheld a District Court use of EMVR; “the district court used the [EMVR] for the royalty award” but then applied “a small royalty rate because the advantage of the invention ... did not greatly increase the value of the [infringing product].”⁴⁶

There is then no economic reason why a negotiated royalty base must have the same technical scope as the patent claim of any one feature of an accused consumer product. Indeed, a negotiated royalty base conceivably may include --- at mutual discretion --- two or more related products. *From an economic perspective, market history is the best guide.*

To enforce upon an infringer a license rate other than the market standard could distort competition. That is, if an infringing user might come to obtain through artful litigation a discounted rate for use of a patent, the infringer evidently may enjoy a cost advantage unrelated to its better technology or management ability. The infringing party may then gain market share at the expense of competitors that have negotiated fairly to use the patent. Moreover, a small percent difference in royalty rate can generate a larger percent difference in bottom line profits for the inventor. This can affect the inventor’s ability to raise additional capital, engage in related R&D, and ultimately survive in the market.

That said, it may be sensible for courts to affix upon infringers a royalty rate higher than the market standard. Otherwise, “the infringer would have nothing to lose, and everything to gain, if he could count on paying only the normal, routine royalty non-infringers might have paid.”⁴⁷ The outcome would then amount to a court-enforced

45. 99 Ct. Cl. 1, 47.

46. *Slimfold Mfg. Co. v Kinkead Indus., Inc.*, 932 F. 2d 1453, 1458-9 (Fed. Cir. 1991).

47. *Panduit Corp, v, Stahlin Bros. Fibre Works, Inc.*, 575 F. 2d 1152, 1158 (6th Cir. 1978) (Markey, J, sitting by designation).

compulsory license based on prevailing market rates and would put the infringer in a “can’t lose” situation in which its infringement goes unpunished, and undeterred.

6. CONCLUSION

License agreements that are based on negotiated revenue bases and percentage rates must remain as practical guideposts for determining a reasonable royalty benchmark. Examining market behavior is a more practical exercise than attempting to plumb the psychological bases for consumer demand or divining methods of apportionment of value that have no empirical grounding outside of a courtroom. Court interjections that adjust patent royalties away from revealed market value may actually discourage *bona fide* negotiating, encourage infringement, and serve to appoint a market winner that has no real economic advantage to justify its gain.

ABOUT THE AUTHOR

Michael A. Einhorn (mae@mediatechcopy.com, <http://www.mediatechcopy.com>) is an economic consultant and expert witness active in the areas of intellectual property, media, [entertainment](#), damage valuation, licensing, antitrust, personal injury, and commercial losses. He received a Ph. D. in economics from Yale University. He is the author of the book *Media, Technology, and Copyright: Integrating Law and Economics* ([Edward Elgar Publishers](#)), a Senior Research Fellow at the [Columbia Institute for Tele-Information](#), and a former professor of economics and law at Rutgers University. He has published over seventy professional and academic articles and lectured in Great Britain, France, Holland, Germany, Italy, Sri Lanka, China, and Japan.

In the [technology](#) sector, Dr. Einhorn worked at Bell Laboratories and the U.S. Department of Justice (Antitrust Division) and consulted to General Electric, AT&T, Argonne Labs, Telcordia, Pacific Gas and Electric, and the Federal Energy Regulatory Commission. He has advised parties and supported litigation in matters involving [patent damages](#) and related valuations in semiconductors, medical technologies, search engines, e-commerce, wireless systems, and proprietary and open source [software](#).

Litigation support involving media economics and [copyright damages](#) has involved [music](#), movies, television, advertising, branding, apparel, architecture, fine arts, video games, and photography. Matters have involved Universal Music, BMG, Sony Music Holdings, Disney Music, NBCUniversal, Paramount Pictures, DreamWorks, Burnett Productions, Rascal Flatts, P. Diddy, Nelly Furtado, Usher, 50 Cent, Madonna, and U2.

Matters involving trademark damages have included the Kardashians/BOLDFACE Licensing, Oprah Winfrey/Harpo Productions, Madonna/Material Girl, CompUSA, Steve Madden Shoes, Kohl's Department Stores, *The New York Observer*, and Avon Cosmetics. Matters in publicity right damages have involved Zooey Deschanel, Arnold Schwarzenegger, Rosa Parks, Diane Keaton, Michelle Pfeiffer, Yogi Berra, Melina Kanakaredes, Woody Allen, and Sandra Bullock.

Dr. Einhorn can be reached at 973-618-1212.

This biography is also available at <http://www.jurispro.com/MichaelEinhorn>

