The Economics of Reasonable Royalty Damages in Patent Litigation Lucent v. Gateway

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Over the last few years, the cry for reform of the U.S. patent system has grown louder as entities that do not manufacture or sell products have reaped large rewards by claiming that some of the most commercially successful products in the marketplace developed and marketed by bellwether technology companies infringe their patent rights. This cry is amplified through a perception held by some that certain district courts are more favorable to patent owners and that this favoritism may effectively place a crippling tax on innovators through excessive damage awards. Though there is still much debate over what should be reformed, if anything, to address a perceived damages problem, a damages provision has been a mainstay of the currently proposed Patent Reform Act of 2007.

Even though Congress’s recent focus on health care reform has slowed legislative efforts to reform patent damages, the matter has not fallen on deaf ears at the Federal Circuit. Some have viewed the Federal Circuit’s recent Lucent v. Gateway decision vacating a $358 million damage award as amounting to judicial patent reform. A starkly different view is that the decision instead shows there is no damages problem to legislatively fix because courts already have the flexible framework of the Georgia-Pacific factors to prevent excessive reasonable royalty damage awards. For example, in a recent speech Justice Michel identified the Lucent case as a sign that the judicial system has addressed any perceived need for patent damages reform.1 Can the same flexibility in awarding patent damages that arouses fear of runaway juries be a framework for scrutinizing damages evidence to ensure there are economic wheels on the damages cart? Irrespective of whether Lucent v. Gateway represents a judicial panacea to the damages problem, the case shows the effect of a rigorous economic analysis and a complex jury verdict form on a complicated reasonable royalty case.

Economic Balancing Act
Judging from the steady increase in the number of patent applications filed,2 confidence in the U.S. patent system remains high. If there were a lack of confidence in the system, then we would not expect companies, universities, and individuals to expend valuable resources seeking to secure patent rights. Nearly half of the filed patent applications originate from foreign applicants.3 These foreign filings demonstrate that confidence in the U.S. patent system extends to noncitizens who desire access to U.S. markets for products and services. As technology’s role in the value of the U.S. economy increases, it follows that the patent system will play an increasingly important role.

A patent system is not without risks. If patent protection is awarded for technology that is not innovative, then the exclusive rights provided by the patent act as a tax to the benefit of the patent holder at the expense of society. The tax can take the form of a patent infringement damage award that exceeds the expected economic benefits provided by the patented technology. As a tax on products, the excessive damage award could raise costs for consumers and industries without providing sufficient societal benefits. Recognizing the potential for this, courts have, for 40 years, applied the flexible framework of the 15 Georgia-Pacific factors in order to determine a “reasonable” royalty that rewards innovation without harming society.4 It is a court’s exercise in determining a “reasonable” royalty that some believe desperately needs to be reformed and what the Federal Circuit may be seeking to redeem or reestablish.

Any change in the U.S. patent system, whether in the form of congressional or judicial action, could upset the balance between the goals of encouraging innovation and maximizing societal wealth. The predominant economist view is that eliminating the patent system would discourage innovation and ultimately slow progress and economic growth.5 All economists would agree that granting patents for noninnovative technology would yield the same result. Yet, a significant risk in reforming the patent system is that any negative effect may take decades to undo if the reform proves undesirable.6

Lucent v. Gateway: A $358 Million Reasonable Royalty Award
The asserted Day patent (U.S. Patent No. 4,763,356) generally relates to entering data into fields on a computer screen without using a keyboard. At trial, Lucent7 charged Microsoft and Dell with infringement of the Day patent based on the sale and use of Microsoft Outlook, Microsoft Money, and Windows Mobile. Lucent asserted that, for example, the calendar date-picker tool in Outlook infringed the Day patent. The tool allows a user to select a series of numbers corresponding to the day, month, and year using graphical controls. The numbers are thereby entered into a corresponding field in an appointment form. Microsoft Money and Windows Mobile had similar date-picker features.

Lucent’s licensing expert asked the jury to award a running royalty of $561.9 million based on an eight percent royalty on Microsoft’s sales of 110 million units of the three accused products.8 On the other end of the spectrum, Microsoft’s licensing expert sought to limit damages to a lump-sum royalty of $6.5 million.9 The jury found that Microsoft indirectly infringed method claim 19 or 21 of the Day patent and apparently awarded a lump-sum royalty of $357,693,056.18 to Lucent.10 The verdict form indicated “N/A” for a royalty rate, thereby suggesting a running royalty was not intended.11 Implicit in the verdict is a jury finding that Microsoft would have agreed to a lump-sum royalty of approximately $358 million at the time of the hypothetical negotiation.

Microsoft renewed its motion for a judgment as a matter of law that the damage award lacked substantial evidence.12 Based on licensing agreements in evidence as well as evidence that the patented feature was promoted by Microsoft
as important, the district court found there was substantial evidence to support the jury verdict. Reasoning the jury might have considered factors other than product revenue, the court determined the award did not reflect an entire market value calculation "on its face." Microsoft appealed the district court’s decision.

Based on its examination of the relevant Georgia-Pacific factors, the Federal Circuit held that the $358 million lump-sum royalty amount, which equated to approximately eight percent of Microsoft’s revenue for the sale of Outlook, was not supported by substantial evidence. Instead, the award was found to be "based mainly on speculation or guesswork." The court held the award lacked substantial evidence in this regard as well. Recognizing the inherent inconsistency with the lump-sum damage award, the Federal Circuit stated, "it is difficult to understand how the jury could have chosen its lump-sum figure down to the penny unless it used a running royalty calculation." The Federal Circuit sent an explicit message that district courts must "scrutinize evidence carefully" on post-trial motions. Accordingly, the damages calculation was vacated, and the damages portion of the case was remanded.

In support of its decision to remand, the court reviewed and analyzed Georgia-Pacific factors 2, 10, 11, and 13 as well as analyzed Georgia-Pacific factors 2, 10, 11, and 13 as well as the entire market value rule, each of which is addressed below.

Georgia Pacific Factor 2: Comparable Licensing Agreements

The second Georgia-Pacific factor is "[t]he rates paid by the licensee for the use of other patents comparable to the patented-in-suit." This factor allows consideration of license agreements of the accused infringer for technology comparable to the technology of the patent-in-suit. A comparable agreement acts as a proxy for the hypothetical agreement between the parties. In practice, the review of this factor also often leads to consideration of comparable license agreements of the patentee as well as other license agreements in the industry.

At trial, Lucent relied upon eight license agreements including four purported lump-sum agreements. Lucent argued that these agreements demonstrated a reasonable royalty should be based on a percentage of sales, i.e., a running royalty. Thus, when the jury returned a lump-sum award rather than a running royalty, Lucent found itself in the interesting position of defending a form of damages it was not seeking. Nonetheless, on appeal, Lucent argued that the license agreements supported the lump-sum amount. Microsoft suggested that the district court "abdicated" its role as a gatekeeper by allowing the license agreements into evidence, but the Federal Circuit explained the responsibility for objecting to evidence lies squarely with the parties. Because Microsoft did not object to introduction of the license agreements, the district court had no "independent mandate" to exclude the evidence.

The Federal Circuit’s Analysis of Lucent’s Proffered Lump-Sum Royalty Agreements

Lucent argued the four lump-sum agreements supported the jury award based, in part, on Lucent’s characterization of these agreements as covering “PC-related patents.” The Federal Circuit rejected the notion that “personal computer kinship” was sufficient comparability to support the damages award. For example the IBM-Dell lump-sum agreement was found “vastly different” because it covered multiple patents to broad, PC-related technologies. Further, the court indicated that Lucent’s expert did not provide the jury with any explanation of the subject matter or patents covered by the other three lump-sum agreements. For example, Lucent’s expert merely identified the Microsoft-Apple agreement as a cross-license with a lump-sum amount. Citing a Microsoft press release describing the agreement as a “broad patent cross-licensing agreement,” the Federal Circuit recognized the agreement was “far more complicated” than Lucent’s expert testimony suggested. The court, therefore, concluded any supposition about the Microsoft-Apple agreement would be “little more than speculation” due to the “sparse record.”

Being no less critical of testimony on the other lump-sum agreements, the Federal Circuit found there was an "equally scant inquiry" into the Microsoft-Inprise agreement and "superficial testimony" on the agreement between Microsoft and Hewlett-Packard. As pronounced by the Lucent court, “a lump-sum damages award cannot stand solely on evidence which amounts to little more than a recitation of royalty numbers” especially when it is doubtful the licensed technology is in any way similar to the litigated technology. Finding it “impossible” based on the record to determine whether the other lump-sum agreements were comparable to the hypothetical agreement in issue, the Federal Circuit saw little evidentiary basis under Georgia-Pacific factor 2 for awarding “roughly three to four times” the average amount in the lump-sum agreements in evidence.

The Federal Circuit’s Analysis of Lucent’s Proffered Running-Royalty Agreements

The Federal Circuit was critical in two respects of the four running-royalty license agreements where Lucent was a party: (1) there was insufficient evidence to establish the licensed technology was comparable to the technology of the Day patent and (2) the jury lacked sufficient information on how to translate the running-royalty agreements to a lump-sum royalty.

In determining whether a license agreement was sufficiently comparable, the court essentially focused on four considerations:

- the relationship between the products licensed under the agreement and the patented technology of the agreement;
- the relationship between the price of the licensed products and the royalty rate in the agreement;
- the relationship between the products licensed under the agreement and the patented technology of the agreement;
- the relationship between the price of the licensed products and the royalty rate in the agreement;
• the degree of similarity between the patented technology of the agreement and the technology of the asserted patent; and
• any royalty rate complexity in the agreement.

With respect to the first two considerations, the Federal Circuit emphasized the jury lacked testimony on how the patented technology licensed in the agreements related to the products covered by the licenses. For example the Vox agreement licensed graphic boards, but the court found that one could not determine how important the patented technology was to those boards. Without that testimony, the jury could not evaluate the importance of the licensed technology to the licensed product and compare that result to the importance of the Day patent to Outlook. Similarly, since the jury lacked the price of the licensed graphics boards, the $2.00 royalty rate in the Vox agreement was “difficult, if not impossible, to evaluate.” With respect to the latter two considerations, the court’s review of the testimony surrounding the Acer agreement indicated the jury lacked information on how similar or dissimilar the patented technology covered by the license agreement was to the patented date-picker tool and an explanation of the various royalty rates in the agreement for different products.

Because of the “fundamental differences” between lump-sum agreements and running-royalty agreements, the “significant shortcoming” of the Lucent-cited agreements identified by the court was their running-royalty nature. As expressed by the Federal Circuit, “the jury had almost no testimony with which to recalculate in a meaningful way the value of any of the running royalty agreements to arrive at the lump-sum damages award.”

Moreover, the court rejected Lucent’s apparent treatment of a per-unit royalty as being equivalent to a lump-sum royalty. As explained by the Federal Circuit, a per-unit royalty is directly related to product revenue because the royalty is based on the number of units ultimately sold. Thus, both a per-unit royalty and a percentage-of-price royalty are types of running royalties. The court therefore concluded that this factor weighs “strongly” against the jury award.

**Georgia Pacific Factors 10 and 13: Value of the Patented Feature**

The tenth Georgia-Pacific factor considers “[t]he nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention,;” and the thirteenth factor considers “[t]he portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.” The court described the importance of these two factors by explaining both factors address how parties would have determined the value of the patented feature relative to other features during the hypothetical negotiation.

In recognizing Outlook as a complex software package containing millions of lines of software code that perform e-mail, scheduling, and list management functions with only a tiny fraction of the code constituting the date-picker feature, the court found it “inconceivable” to conclude that the patented date-picker tool constituted a “substantial” portion of the value of Outlook. The court was struck by the “glaring imbalance” between the patented date-picker feature and the unpatented features in Outlook. Though the Federal Circuit cautioned that one cannot determine the importance of a feature by merely counting lines of code, the court easily concluded that the patented date-picker tool was a “minor aspect” of a “much larger software program” such that the profit attributable to the patented tool was “exceedingly small.”

Going a step further, the court introduced an interesting twist to analyzing realizable profit under Georgia-Pacific factor 13 by reasoning many features other than the date-picker contributed “significant profit” and accounted for the “overwhelming majority of the consumer demand.” Thus, the Federal Circuit injected consumer demand, which typically is considered in the context of the entire market value rule, into the analysis. As the court’s analysis suggests, Georgia-Pacific factor 13 is uniquely tailored to potentially address a legislative concern that products today involve numerous patented aspects.

**Georgia Pacific Factor 11: Extent to Which the Invention Is Used**

Georgia-Pacific factor 11 considers “[t]he extent to which the infringer has made use of the invention and any evidence probative of the value of that use.” The court explained this factor is based on the premise that “an invention used frequently is generally more valuable than a comparable invention used infrequently.” The Federal Circuit, however, acknowledged that parties in licensing negotiations routinely agree to royalty payments “regardless of whether the invention is used frequently or infrequently by the consumer.”

Because Lucent did not meet its burden to show the extent of use of the date-picker, the court determined that this factor did not support the jury’s lump-sum award. Reasoning the jury was only presented with speculation, the Federal Circuit emphasized there was no evidence describing how many Outlook users had used the date-picker tool or how many times the date-picker was used. Similarly, the court described the record as “conspicuously devoid” of data showing how often, in general, consumers used the patented date-picker.

Examples of potentially acceptable usage data identified by the Lucent court were sales projections, consumer surveys, and focus group testing—none of which were in evidence. The jury verdict of indirect infringement did not fill the evidentiary gap because the verdict merely supported an implicit finding that at least one person used the patented date-picker. The court also indicated that Lucent could not rely upon the use of forms and pop-up tools as evidence since these did not use the patented feature.

**The Federal Circuit’s Analysis of the Entire Market Value Rule**

The jury was instructed that under the entire market value rule, a patentee may recover damages based on the value of a product containing several features if the patented feature is the basis of consumer demand for the product. To capture the entire market value of the product in a reasonable royalty
case, the total value of product sales containing the patented invention is used as a royalty base.56 This royalty base is then used (multiplied by the royalty rate) to calculate a reasonable royalty owed by the infringer.57

Based on the jury’s calculation of a lump-sum figure down to the penny, the Federal Circuit agreed with Microsoft’s reasoning that the jury must have used a running-royalty calculation applied to the “entire market value” of Outlook.58 In light of the assumption that the jury applied the entire market value rule, the court found legal error for two reasons:59

1. Evidence failed to demonstrate that the patented feature created the basis or “even a substantial basis” of consumer demand for Outlook and 2. Use of the rule would violate the district court’s grant of Microsoft’s motion in limine. In addressing the first flaw, the Federal Circuit concluded that Lucent did not carry its burden of proving that anyone purchased Outlook because of the patented feature. Based on the many features in Outlook other than the date-picker tool, the court reached the “unmistakable conclusion” that the date-picker tool was not the reason consumers purchase Outlook.60 Similarly, the Federal Circuit indicated the “only reasonable conclusion” supported by the evidence was that the date-picker tool in Outlook is a “very small component of a much larger software program.”61

With respect to the second flaw in applying the entire market value rule, the district court excluded Lucent’s licensing expert from applying the rule to the sale of computers loaded with Outlook.62 In place of the computer sales that were originally in the royalty base, the expert used sales of Outlook.63 At the same time, the expert switched his opinion on the applicable royalty rate, increasing the rate from one percent to eight percent to achieve the equivalent to “1-percent of the fair market value of the entire computer.”64 The Federal Circuit treated the royalty rate escalation as an effort to circumvent the district court’s grant of the motion in limine and the court’s implicit recognition that basing damages on the value of the computer using “common royalty rates (e.g., 1–5%)” would be “excessive.”65

No doubt aware of the vigorous debate in the patent community and on Capitol Hill surrounding the entire market value rule,66 the Federal Circuit took the initiative of explaining the basis for the rule. At the outset, the Federal Circuit acknowledged the challenge to accurately determine the value of a patented feature that is one “feature among many.”67 The court took comfort, however, that licensors often license inventions for more than their “true economic value” due to the inherent risk in licensing intangible assets that may have no established market value.68 Disagreeing with commentators who would eliminate the rule and proponents presumably seeking to narrow application of the rule, the Federal Circuit defended the entire market value rule by explaining, “[i]n the absence of a counterexample, there is nothing inherently wrong with using the market value of the entire product.”69 As case in point, the court highlighted the patent license agreements in evidence that calculated royalties based on a percentage of the commercial products’ sales price. Implicitly confronting the entire market value rule debate centering around the royalty base, the Federal Circuit emphasized the important role the royalty rate plays: “Simply put, the base used in a running royalty calculation can always be the value of the entire commercial embodiment, as long as the magnitude of the rate is within an acceptable range (as determined by the evidence).”70 In other words, the royalty base cannot be considered in a vacuum: “[a]ll running royalties have at least two variables: the royalty base and the royalty rate.”71

**A Further Consideration: The Complex Jury Verdict Form**

Though Outlook, Windows Mobile, and Microsoft Money were all found by the jury to be infringing products and the damages award did not distinguish among these products, the Federal Circuit limited its damages analysis to Outlook, noting it may be helpful on remand for the trial court to analyze the three products independently. As explained by the court, “we focus mainly on the damages case as it applies to Microsoft Outlook, as infringement by the use of Outlook apparently constituted the vast majority of the award.”72

In reaching its verdict, not only was the jury confronted with these three accused Microsoft products, but it also was presented a verdict form with a thicket of four asserted patents, five asserted patent claims, two defendants, and other accused products. Once the jury reached the damages part of the verdict form, it had to choose between a running royalty and a lump-sum royalty without a jury instruction explaining the difference. Instead of requiring the jury to indicate the royalty base and royalty rate if it chose a running royalty, the form merely called for specifying the “total damages” and the “royalty rate.”73 This may have contributed to the reasons that led to a remand.

**Conclusion**

One can view the Lucent decision as the Federal Circuit’s response to patent reform proponents who blame high reasonable royalty damage awards on the Georgia-Pacific factors and the entire market value rule. Instead of a jury grab bag or carte blanche, which some fear the factors have become, the Federal Circuit applied the factors in determining that the $358 million damage award lacked sound economic proof and thus should be vacated. In defending and demystifying the entire market value rule, the Federal Circuit invites lawmakers and commentators to reconsider their goal of reworking the rule. In instructing district courts to carefully scrutinize damages evidence, the message to litigants, damage experts, and courts is to more rigorously apply the Georgia-Pacific framework as appropriate.

Beyond its intersection with issues targeted by proposed patent reform, the Lucent decision provides guidance to litigants on avoiding superficial damages expert testimony that is not helpful to juries. For example, the Lucent jury apparently did not receive testimony on the relevant features of the license agreements in evidence or information on how to compare lump-sum royalties and running-royalty agreements. Though the case purportedly did not turn on any one Georgia-Pacific factor, the Federal Circuit’s degree of treatment of Georgia-Pacific factor 2 suggests that more helpful expert testimony on the license agreements might have made a material difference.

Even if the Lucent decision ultimately does not have broad-ranging implications, it raises important questions about how best to apply Georgia-Pacific factors 2, 10, 11,
and 13 and the entire market value rule:

- When relying on running-royalty agreements to support a lump-sum royalty, or vice versa, should there be a jury instruction explaining the difference between a lump-sum royalty and a running royalty?
- Are more discovery and expert testimony on licensed products key to demonstrating license agreements are comparable?
- What is the economic threshold for a license agreement to be sufficiently informative of the hypothetical negotiation?
- How can a “glaring imbalance” between the patented feature and unpatented features be avoided when a product includes numerous unpatented features?
- When the jury is instructed on the entire market value rule, should the jury verdict form include a blank to check when the rule is being applied so litigants and courts are not left to guess?
- When are “common royalty rates” appropriate in applying the entire market value rule?

We are hopeful that future cases will answer these questions and perhaps other questions like them. Despite these uncertainties, one thing is clear: the Federal Circuit is increasing the level of economic sophistication required to support a reasonable royalty damage award. Regardless of whether this development represents judicial patent reform, litigants should appreciate that the patent damages environment is evolving and adapt accordingly.

Endnotes

3. Id.
5. 6 Dominique Foray, The Economics of Knowledge 113–29 (MIT 2004).
6. Remarks of Justice Michel, supra note 1, at 29 (“If they pass S.515, it’s likely to be another half-century before they have a comprehensive revisiting of these issues. So if they get anything wrong, it’s likely to be permanent, and if it’s costly, it’s likely to roll up the costs year after year after year.”).
8. Id. at 1042.
9. Id.
10. Id. at 1028.
14. Lucent, 580 F.3d at 1324. Because the parties each adopted the hypothetical negotiation approach, the analytical or classical approach to calculating a reasonable royalty was not in issue. Id. at 1325.
15. Id. at 1335.