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Gatekeeping Post-\textit{Uniloc}: Expert Testimony in Multi-Component Patent Litigation

\textit{Erika Mayo}\textsuperscript{*}

A strong patent system has historically supported extraordinary growth in the United States’ technology industry. Striking a balance between patentee compensation and the public interest in a competitive market, the system, as envisioned, rewards an inventor only for his contribution to the state of the art. But current advances in technology typically represent incremental improvement on prior inventions, and often constitute merely one of hundreds of components of a device. With device sales in the millions or billions, it is unsurprising that parties bitterly contest the methodology for calculation of patent damages. Under the present system, each party is incentivized to seek out the “best expert money can buy.” Confounded juries have recently awarded nine and ten figure sums for relatively trivial contributions. This overcompensation of patentees upsets the intended balance in the patent system. In recent years, the Federal Circuit has made an effort to rein in excessive or unfounded patent damages awards. In Uniloc v. Microsoft, the Federal Circuit granted a motion for retrial on the issue of damages, rejecting the validity of plaintiff’s damages expert testimony. This note advocates a broad reading of Uniloc and encourages trial courts to take a greater role in providing juries with sound methodology for assessing damages. Specifically, this note encourages the use of court-appointed damages experts to restore predictability in the U.S. patent system.

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I. INTRODUCTION

Technology is big business. In 2012, Apple sold more than 100 million iPhones and over 50 million iPads, boasting fourth quarter revenues of almost $36 billion.\(^1\) Sales of Android devices have been similarly steady in the billions.\(^2\) Qualcomm, a wireless chip-maker, has drastically outpaced revenue expectations due to extraordinary demand.\(^3\) Recent earnings across the technology sector are at an historic high, and continued growth is expected.\(^4\)

A booming American technology industry is arguably due, in part, to a strong patent system. Indeed the Congressional power to issue patents stems from its Constitutional mandate to “promote the Progress of Science and useful Arts.”\(^5\) A patent grants an inventor the “right to exclude” —the ability to keep others from practicing his invention for a period of time. This right is also known as a “limited monopoly.” The limited monopoly is designed as an incentive: The inventor must disclose his invention to the public in order to obtain and enforce his rights.\(^6\) In exchange for disclosure, the inventor enjoys the ability to price his invention in the absence of competition.\(^7\) The inventor may also choose to transfer this monopoly right via limited or exclusive licenses.\(^8\) To be effective, this exchange (or *quid pro quo*) must balance between promoting disclosure and protecting the public from unwarranted monopolies.

Embedded in this system is a dated conception of what constitutes “invention.” As written, the system envisions the

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3. Sinead Carew, Qualcomm posts higher profits, raises FY targets, REUTERS (Jan. 31, 2012), http://finance.yahoo.com/news/qualcomm-posts-higher-profit-raises-212248270.html (“The biggest supplier of cellphone chips reported a profit $1.395 billion, or 81 cents per share, for its fiscal first-quarter, ended December 25, compared with a profit of $1.17 billion, or 71 cents per share, in the year-ago quarter.”).
4. Jack Hough, Why Tech Stocks Look Better—Even For the Risk Averse, WSJ (Jan. 28, 2012), http://online.wsj.com/article/SB1000142405297020336504577186973426913812.html?KEYWORDS=intel+earnings (“With 37 percent of S&P 500 companies having announced December-quarter earnings results, 68 percent of the technology companies that have reported have beaten analysts’ estimates, versus 59 percent for the index and 40 percent for consumer-staples companies, according to a Friday report from Thomson Reuters.”)).
5. U.S. CONST. art. I, § 8, cl. 8.
6. For a discussion of the economics behind the limited monopoly incentive, see generally Harold Demsetz, Toward a Theory of Property Rights, 57 AM. ECON. REV. 347 (1967).
7. See Demsetz, supra note 6, at 354–55.
8. See id. at 352–53.
“invention” as a new device or machine.\textsuperscript{9} For the Founders, “if you put technology in a bag and shook it, it would make some noise.”\textsuperscript{10} A recent shift towards intangible and incremental invention, however, means that modern technology rarely fits the Founders’ description. Advances are largely in the chemical, biotechnological and software arenas. Moreover, typical modern technology—the thing that makes noise when you shake it—is not a stand-alone tool but an amalgam of many components. Each component can contain components, and so on. Each part of the greater invention might be the product of a different inventor, covered by a separate patent or several overlapping patents.\textsuperscript{11}

Complex end-user technology products, like Apple’s iPhone, are comprised of hundreds and even thousands of patentable components.\textsuperscript{12} This market reality raises practical concerns for the operation of the patent system, which historically envisioned a device or machine covered by a single patent.\textsuperscript{13} More specifically, it has become increasingly difficult to calculate the true value of a patented technology for the purpose of negotiating licensing agreements, as well as assessing appropriate damages for infringement. Similarly, the “right to exclude” may over-compensate component and incremental inventors. While the value of a patented technology should correlate to its incremental contribution to the end-product,\textsuperscript{14}

\[\text{[the threat that a patent holder will obtain an injunction that will force the downstream producer to pull its product from the market can be very powerful. These threats can greatly affect licensing negotiations, especially in cases where the injunction is based on a patent covering one small component of a complex, profitable, and popular product.}]\textsuperscript{15}

With end-product sales in the billions, it is unsurprising that the methodology for calculation of patent damages has been bitterly

\begin{itemize}
\item \textsuperscript{10} Id. at 1991–92 (quoting Robert P. Merges, \textit{As Many As Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform}, 14 BERKELEY TECH. L.J. 577, 585 (1999)).
\item \textsuperscript{11} Lemley & Shapiro, supra note 9, at 1992.
\item \textsuperscript{13} Lemley & Shapiro, supra note 9, at 1992.
\item \textsuperscript{14} Daralyn J. Durie & Mark A. Lemley, \textit{A Structured Approach to Calculating Reasonable Royalties}, 14 LEWIS & CLARK L. REV. 627, 639 (2010).
\item \textsuperscript{15} Mark A. Lemley & Philip J. Weiser, \textit{Should Property or Liability Rules Govern Information?}, 85 TEX. L. REV. 783, 786–88 (2007).
\end{itemize}
contested.\textsuperscript{16} Jury awards for patent infringement have, in recent years, reached nine and even ten figures.\textsuperscript{17} These figures reflect an average royalty rate of over thirteen percent—significantly higher than the average negotiated license.\textsuperscript{18} Since 2007, observers have noted efforts by the Court of Appeals for the Federal Circuit to “rein in” astronomical patent damages awards. Under Chief Justice Rader, the Court has edged its decisions closer to a rational market model for assessing damages.\textsuperscript{19} Specifically, the Court has sought to limit admissibility of irrelevant sales and market data where such data is likely to distract or confuse the jury from the proper calculation.\textsuperscript{20}

In January of 2011, the Federal Circuit granted Microsoft’s motion for retrial on the issue of damages in \textit{Uniloc v. Microsoft}, rejecting on \textit{Daubert} grounds the validity of expert testimony based on the “25-percent rule of thumb” for calculating patent damages.\textsuperscript{21} Prior to this decision, the rule provided a basis for calculating the “reasonable royalty” at one-quarter of the total market value of the product containing the infringing technology.\textsuperscript{22} The \textit{Uniloc} decision also sought to clarify earlier precedent on admissibility under the so-called “Entire Market Value Rule”; the Court prohibited introduction of market data where the plaintiff failed to illustrate that the patented feature created the market demand for the entire product.\textsuperscript{23} As discussed in detail below, \textit{Uniloc} represents a substantial shift in the landscape for patent damages calculations. Implications of the decision have not gone unnoticed: District courts will be expected to scrutinize expert evidence on the issue of patent damages for both relevance and reliability.

But \textit{Uniloc} only provides the outer limits of permissible damages evidence—what \textit{not} to do. The damages calculus remains unwieldy in two primary respects: (1) the Federal Circuit adheres to a nebulous fifteen-factor “test” for computing damages,\textsuperscript{24} and (2), the trial court enjoys broad discretion in determining the appropriate methodology. On appeal, the Federal Circuit applies the highly deferential “abuse of discretion” standard,\textsuperscript{25} resulting in rarely disturbed, but often

\begin{itemize}
\item\textsuperscript{16} Durie & Lemley, \textit{supra} note 14, at 628.
\item\textsuperscript{17} Cotter, \textit{supra} note 12, at 725–26 (noting that, of nine awards exceeding $100 million since 2007, not all have survived post-judgment motions or appeal).
\item\textsuperscript{18} Lemley & Shapiro, \textit{supra} note 9, at 2032.
\item\textsuperscript{19} Cotter, \textit{supra} note 12, at 750–51.
\item\textsuperscript{20} \textit{Id} at 752.
\item\textsuperscript{21} Uniloc USA, Inc. v. Microsoft Corp., 632 F.3d 1292, 1295 (Fed. Cir. 2011).
\item\textsuperscript{22} Cotter, \textit{supra} note 12, at 730.
\item\textsuperscript{23} \textit{Id} at 732.
\item\textsuperscript{24} Durie & Lemley, \textit{supra} note 14, at 629–30. While the author agrees with innumerable commentators that the \textit{Georgia-Pacific} test has significant flaws, this note is not focused on a critique of the governing legal standard.
\end{itemize}
inexplicable, jury awards. What results is a lack of meaningful appellate guidance and an unpredictable economic landscape. Proper assessment of damages is of the utmost importance in protecting the validity of our patent system. Inconsistent compensation diminishes the economic justification for enforcing patent rights. While the patent damages problem is widely recognized, an absence of Congressional consensus has resulted in little reform. In the wake of Uniloc, this note advocates greater involvement by the district courts in policing the data presented for the jury’s consideration. Part II outlines the current state of patent damages law under the Federal Circuit. Part III discusses expert testimony in the patent context, and Daubert's evidentiary restrictions. Part IV summarizes the Uniloc v. Microsoft decision. Finally, Part V advocates greater role for Rule 706 experts in an effort to ensure reasonable damages calculations post-Uniloc.

II. THE PATENT DAMAGES LANDSCAPE

Relevance of certain expert testimony, and the propriety of court-appointed experts, must be considered in context of the governing standards for assessing damages. The calculation of damages for patent infringement is governed by 35 U.S.C. 284, which states, “Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer.” Courts have long held that damages can be either the patentee’s lost profits, or the reasonable royalty he would have received through arm’s-length bargaining. The burden of proving damages by a preponderance of the evidence falls on the patentee.

26. Lucent Technologies Inc. v. Gateway, 580 F.3d 1301, 1310 (Fed. Cir. 2009) (“We review the jury’s determination of the amount of damages, as an issue of fact, for substantial evidence. A jury’s decision with respect to an award of damages must be upheld unless the amount is grossly excessive or monstrous, clearly not supported by the evidence, or based only on speculation or guesswork.”).
28. Id.
29. Id. at 471–72.
30. See Lucent, 580 F.3d at 1324.
31. Id.
A. LOST PROFITS

To recover lost profits, a patentee must show that “but for the infringing acts, the patent owner would have made the sales and would have made a certain level of profit.”32 Four elements must be proved by the patentee to establish entitlement to lost profits: (1) a demand for the patented product; (2) the absence of an acceptable, non-infringing substitute for the patented product; (3) the patentee’s manufacturing and marketing capability to exploit the demand for the patented product; and (4) the amount of profit the patentee would have expected to make if he had made the infringer’s sales.33 Lost profits established by this test are limited by “reasonable, objective foreseeability,” but can include lost profits for sales of products not covered by the patent.34

B. REASONABLE ROYALTY

Where a patentee is unable to show lost profits or an established royalty rate, he is nevertheless entitled to a reasonable royalty.35 The Federal Circuit recognizes several approaches for this calculation, while conceding that any reasonable royalty analysis is necessarily uncertain.36 The court noted that “where an established royalty rate for the patented inventions is shown to exist, the rate will usually be adopted as the best measure of reasonable and entire compensation.”37 A single licensing agreement is not enough to demonstrate uniformity or acquiescence in the reasonableness of the rate.38 Licenses negotiated in the face of a threat of litigation are similarly not sufficient to provide an “established” rate.39

The most common approach to assessing damages is the “hypothetical negotiation,” which attempts to determine what the parties would have agreed upon, had they negotiated an arm’s-length license at the time of infringement.40 The hypothetical negotiation assumes that the patent is valid and infringed, and tries to “recreate

33. Id.
35. See Lucent, 580 F.3d at 1324.
36. Id. at 1324–25.
38. Id.
39. Id. at 1078–79.
40. Lucent, 580 F.3d at 1324.
the *ex ante* licensing negotiation scenario and to describe the resulting agreement." The Federal Circuit has adopted the *Georgia-Pacific* framework for analyzing patent damages, which consists of a fifteen-factor test. Under this test, the trial court must consider "sound economic proof of the nature of the market" and the claimed invention's value therein.

The hypothetical negotiation is flexible. A court may look to "events and facts that occurred [after the time infringement began] and that could not have been known to or predicted by the hypothesized negotiators." Importantly, the *Georgia-Pacific* factors are nonexclusive and each factor may not apply to every case. In every case, however, the patentee must give evidence "tending to separate or apportion the defendant's profits and the patentees damages between the patented feature and the unpatented features, and such evidence must be reliable and tangible, and not conjectural or speculative." While the defendant is presumed, in the hypothetical negotiation, to be a "willing licensee," the law "does not require that an infringer be permitted to make a profit." Further, a patentee's demonstrated unwillingness to grant an unlimited license may support a higher award.

Though beyond the scope of this note, it should be recognized that the existing damages standards have been roundly attacked. Courts have described the royalty calculation as "'involv[ing] more the talents of a conjurer than those of a judge.'" At best, the present standards are complex and open to competing interpretations. This complexity invites parties to fashion their analyses to reach an optimal number by selecting which factors to include. Under the current system, a jury might hear competing

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41. Lucent, 580 F.3d at 1325.
42. Hanson, 718 F.2d at 1077.
45. Fromson, 853 F.2d at 1575.
46. Uniloc USA, Inc. v. Microsoft Corp., 632 F.3d 1292, 1318 (Fed. Cir. 2011).
47. Monsanto Co. v. Ralph, 382 F.3d 1374, 1384 (Fed. Cir. 2004).
48. Id.
damages theories based on entirely inconsistent inclusion of factors, any number of which they may properly consider.

III. EXPERT TESTIMONY

Section 284 expressly provides for the use of expert testimony “as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.” Given the complexity of this assessment, juries often rely on calculations put forth by the parties’ experts in arriving at an award. It is thus no surprise that expert testimony is a prominent feature of nearly every patent trial. Many patent cases call for both accounting experts and industry and licensing experts. Additional experts, including economists, may be employed depending on the theory of damages advanced at trial.

Under the common law, admissibility of expert testimony was analyzed under the “general acceptance” standard. To be admitted under that standard, the methodology leading to an expert’s opinion had to be “sufficiently established to have gained general acceptance in the particular field in which it belongs.”

The Federal Rules of Evidence were enacted in 1975. Rule 702 provides the general standard for admission of expert testimony:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

(a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
(b) the testimony is based on sufficient facts or data;
(c) the testimony is the product of reliable principles and methods; and
(d) the expert has reliably applied the principles and methods to the facts of the case.

Adoption of Rule 702 resulted in a conflict as to whether “general acceptance” remained the correct standard. In 1993, in Daubert v. Merrell Dow Pharmaceuticals, Inc., the Supreme Court

52. Id. at 17. (“For example, where a reasonable royalty is sought the licensing or industry expert will testify to the royalty rate and the proper methodology of computing royalties. The accountant, if retained, will then perform the actual calculations.”).
53. Id.
55. FED. R. EVID. 702.
found that *Frye* had been displaced by the Federal Rules.\(^{56}\) In *Daubert*, minors and their guardians sued a pharmaceutical company for birth defects allegedly resulting from the mothers’ ingestion of the drug *Bendectin*.\(^{57}\) The defendant provided testimony of an expert on the “risks from exposure to various chemical substances.”\(^{58}\) The expert stated that he had reviewed all the literature on *Bendectin* and human birth defects and no study had found *Bendectin* capable of causing birth defects.\(^{59}\)

The plaintiffs provided contradictory testimony from eight of their own experts. These experts based their opinions on test tube and live animal studies, chemical comparisons, and a reanalysis of published statistical studies.\(^{60}\) The district court found that these experts’ opinions would not be admissible under the “generally accepted” test and granted the defendant’s motion.\(^{61}\) The Supreme Court ultimately reversed, finding that “nothing in the text of [Rule 702] establishes ‘general acceptance’ as an absolute prerequisite to admissibility.”\(^{62}\) The Court also held, however, that Rule 702 places limits on the admissibility of expert evidence. The trial judge was accordingly assigned the role of gatekeeper. As such, the judge “must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.”

Before admitting scientific expert testimony, the judge must apply a two-part test: (1) “[t]he subject of an expert’s testimony must be ‘scientific knowledge’”, and (2) the expert testimony must “assist” the trier of fact.\(^{64}\) The first requirement relates to trustworthiness, while the second is directed to relevance. Expert testimony must be “relevant to the task at hand”—it must “fit” the facts of the case. To apply this validity/reliability test, *Daubert* encourages the court to consider four non-exclusive factors: (1) whether the expert’s method has been tested; (2) the reliability of the expert’s method and its potential rate of error; (3) whether the method has been published, and/or the subject of peer review; and finally (4) whether the method is generally accepted in a relevant scientific community.\(^{65}\) These

\(^{57}\) *Id.* at 582.
\(^{58}\) *Id.*
\(^{59}\) *Id.*
\(^{60}\) *Id.* at 583.
\(^{61}\) *Id.*
\(^{62}\) *Id.* at 588.
\(^{63}\) *Id.* at 579, 590 n. 8 (1993). In a footnote, the *Daubert* Court elucidated the parameters of its holding, stating: “Rule 702 also applies to ‘technical, or other specialized knowledge.’ Our discussion is limited to the scientific context because that is the nature of the expertise offered here.” *Id.*
\(^{64}\) *Id.* at 592.
\(^{65}\) *Id.* at 593–94.
considerations are designed to safeguard the jury from “absurd and irrational pseudoscientific assertions,” while avoiding undue restraint on the search for truth.

The Court elucidated its Daubert holding in *General Electric Co. v. Joiner*. The appropriate standard of review on Daubert rulings was deemed to be the “abuse of discretion” standard. The Court also reaffirmed the need for experts to sufficiently tie methodology to the facts of the case. An expert’s bare assertion that this requirement is satisfied may be insufficient; “nothing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.” The trial court has discretion to rule that there is “simply too great an analytical gap between the data and the opinion proffered.” Two years later, in *Kumho Tire Co., Ltd. v. Carmichael*, the Court extended the Daubert gatekeeping mandate to non-scientific expert evidence. Validity and reliability of an expert’s methodology must be reviewed regardless of whether the expert is a “technical,” “experience-based,” or “scientific” expert.

Experts testify in a majority of civil jury trials. In most cases, experts are proffered by both sides. Even with the Rule 702 and Daubert safeguards, there can be no guarantee of the validity of expert testimony. On the contrary, expert testimony continues to be viewed with a cautious eye. More cautious, some argue, than other testimony received at trial. There are several reliability dangers specific to expert testimony. Professor Samuel R. Gross provides a “thumbnail sketch” of the method of use of expert testimony, illustrating the need for skepticism:

The lawyers on each side of a dispute, acting in secret, choose people from an almost indefinitely large array and designate them

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67. Id.
68. Id.
69. Id.
70. Id.
72. Id.
74. See Daubert v. Merrell Dow Pharm., 509 U.S. 579, 592–93 (holding that the judge must make a “preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.”); i4i Ltd. P’ship v. Microsoft Corp., 598 F.3d 831, 854 (2010).
75. Gross, *supra* note 73, at 1114–15 (“Reading the comments of lawyers and judges, it is easy to get the impression that expert witnesses are intruders who disrupt the judicial search for truth. This is false, of course. As Karl Menninger pointed out, the expert ‘is not self invited to these parties. He is not a trespasser. He is called, then he is questioned, criticized, disputed, attacked, suspected, disregarded and ridiculed.’ The expert witness that lawyers vilify is a creature of their own creation.”).
as the witnesses; these witnesses are paid handsomely for their testimony; lawyers can preemptively hire witnesses in order to keep them from testifying when their honest testimony might help the other side; many witnesses make a business of testifying, and advertising their services; the attorneys control the information and the issue on which their witnesses testify; witnesses are allowed to testify to matters beyond their personal knowledge and to evaluate as well as present information; the existing rules of pretrial discovery are curtailed so that the identity and the evidence of many potential witnesses can be concealed from the opposing party; the usual rules of evidence are inapplicable at trial; and, finally, the subject matter of the testimony by these witnesses is intrinsically confusing, if not incomprehensible, to judges and jurors.  

This system allows for the grooming of witnesses for the benefit of one party, while accepting these witnesses to be presented to the jury as learned specialists. The road to a civil trial is thus akin to a bidding war—each side is incentivized to procure the best testimony money can buy. This problem is compounded by the fact that a majority of expert testimony is given by testifying experts who are “repeat players,” familiar with the grooming and adversarial processes. Many are more familiar, even, than the lawyers doing the questioning. Where the damages stakes are high, it is understood that both parties will shell out substantial sums for the “right” expert testimony. 

Studies have shown that juries are likely to attribute substantial weight to the opinions of experts. Laypersons are accustomed to receiving advice from experts, and relying on that advice as sound. Outside the courtroom, when faced with a question about which one has no background or experience, the guidance of an expert is undoubtedly warranted. The jury brings this understanding of an expert—the neutral, guiding specialist—to trial, where experts are not paid to be neutral. While some argue that the adversarial system is enough to dispel these dangers, the unique circumstance of the expert witness casts doubt on this proposition. Experts are selected, in large part, because they are convincing. A low-credibility expert is

76. Gross, supra note 73, at 1125.
77. Id. at 1191.
78. Id. (“Judging from 1985-86 cases, when an attorney examines a witness in a civil jury trial in California, the expert is twice as likely to have testified in another such case in the preceding six months as the attorney is to have tried one (42 percent to 21 percent).”).
unlikely to be called to the stand.\textsuperscript{82} Moreover, an attack on the witness's academic credibility may not be enough to discredit his convincing methodology or conclusion, however erroneous.

Expert testimony dangers are of particular concern in a damages determination. The jury is here not asked to decide a yes or no question such as “Brakes failed or didn’t they? Pill caused defect, or didn’t it?” Instead, the jury is asked to come up with a value. That value need not match the findings of either party's expert.\textsuperscript{83} An adversarial attack on an expert’s credibility thus provides little aid to the jury in determining the proper figure. Unlike in a yes-or-no scenario, the mere fact that one party’s witness is “wrong” does not necessarily mean the other party’s witness is “right.” The average juror, who has never been party to a licensing agreement, is left to fend for himself. The jury’s befuddlement is often apparent. For example, in \textit{Lucent v. Gateway}, the jury awarded $357,693,056.18 in lump-sum damages, suggesting at the very least their misunderstanding of the “lump-sum” versus “running royalty” award (a lump-sum agreement would almost never contain a number out to the penny).\textsuperscript{84} On appeal, the Federal Circuit is often left to speculate as to how the jury arrived at its figure.\textsuperscript{85}

Flawed expert testimony can be dangerous in another way. By presenting the jury with a complex set of data, organized convincingly to result in a quantitative conclusion, the expert can obfuscate the assumptions underlying his calculation. One example of this phenomenon is the frequently invoked “Nash bargaining” theory.\textsuperscript{86} Nash bargaining attempts to quantify the economic values underlying a hypothetical negotiation and solve for what portion of the gains achieved through agreement would be allotted to each party.\textsuperscript{87} To explain Nash bargaining, the expert assigns letters or mathematical symbols to reflect (1) the value of the patented feature (as compared to the next-best alternative), (2) the margin (or net profit) on each patented unit, (3) the strength of the patent (probability that it will be found valid and infringed),\textsuperscript{88} (4) the cost of redesigning the end-


\textsuperscript{83} SmithKline Diagnostics, Inc. v. Helena Labs, 926 F.2d 1161, 1168 (Fed. Cir. 1991) (“A court is not restricted in finding a reasonable royalty to a specific figure put forth by one of the parties.”).

\textsuperscript{84} Lucent Technologies, Inc. v. Gateway, Inc., 580 F.3d 1301, 1309 (Fed. Cir. 2009).

\textsuperscript{85} See, e.g., Wordtech Sys., Inc. v. Integrated Networks Solutions, Inc., 609 F.3d 1308, 1321 (Fed. Cir. 2010); Uniloc USA, Inc. v. Microsoft Corp., 632 F.3d 1292, 1312 (Fed. Cir. 2011) (the jury may have “used the $19 billion figure to ‘check’ its significant award of $388,000,000.”).

\textsuperscript{86} Lemley & Shapiro, supra note 9, at 1995–96 (referring to Nash Bargaining as a “standard economic theory”).

\textsuperscript{87} Id.

\textsuperscript{88} Id. While the reasonable royalty calculation assumes the patent is valid and infringed, it
product to avoid reading on the patent,89 (5) the percentage of the infringer's sales that would be lost by issuance of an injunction,90 and finally (6) the bargaining skill of the patent holder.91 Importantly, bargaining skill is expressed as a “fraction of the combined gains from settling (or licensing), rather than litigating.”92 The greater the bargaining skill of the patentee, the more he recoups of that combined gain. A common underlying assumption is that the parties bring equal bargaining power to the negotiation (expressed as a percentage, or 0.5).93 Of course, there are innumerable reasons why parties would not bring equal bargaining power to the table. Nevertheless, this assumption is built into the equation—literally buried in Greek. The jury is presented with a complex mathematical structure containing a significant yet unfounded assumption.94

One scholar summarizes the added problem that juries are tempted to offset apparent biases: “If the task were to estimate the value of coins in a jar, and one partisan expert said ‘$50’ and the other partisan expert said ‘$100,’ a fact-finder might reasonably believe that the true value is around $75. However, this tactic breaks down whenever one expert is more honest than the other. Indeed, the tactic punishes such honesty.”95 Another scholar notes:

The patentee’s expert will opine that every penny the infringer ever made was due to the patent. The infringer’s expert will opine that since the infringer did not really need the patent anyway a reasonable royalty would be a flat fee somewhere in the neighborhood of pocket change.96

The fear that a jury will “split the difference” may discourage hired experts from exercising restraint in their opinions. The result is extraordinary divergence in the values proposed by the parties. Most jury damages awards have been upheld on appeal.97 Recently, the Federal Circuit has illustrated an effort to curb expert testimony that attempts to introduce irrelevant or speculative evidence in assessing patent damages. In 2010, in *Lucent v. Gateway*,

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90. *Id.*
91. *Id.*
92. *Id.*
93. *Id.*
95. Robertson, *supra* note 80, at 191.
the Federal Circuit reviewed the jury’s award of over $357 million as a “reasonable royalty” for an infringing component of Microsoft Outlook. Outlook is a successful software program for creating computer spreadsheets. The component at issue was the “date-picker” function of Outlook, which allows users to employ a drop-down menu in lieu of keyboard entry.98 The total dollar value of the sales for the infringing software program was approximately $8 billion.99 Lucent’s expert based the damages calculation on 8 percent of sales revenue for the software, and it asked the jury to award $561.9 million.100 Microsoft’s expert opined that a lump-sum payment of $6.5 million would have resulted from a hypothetical negotiation.101

Notably, because Microsoft had failed to object to introduction of Lucent’s expert evidence at trial, the court was limited in Lucent to a review of the jury’s award under the more demanding “substantial evidence” standard.102 The court nevertheless held that the damages award was not supported by the evidence. The court found that Lucent’s expert had incorrectly urged the jury to speculate as to what the proper lump-sum damages award would be.103 The court further held that Lucent’s had improperly relied upon unrelated prior license agreements. The court stated “the law does not require an expert to convey all his knowledge to the jury about each license agreement in evidence, but a lump-sum damages award cannot stand solely on evidence which amounts to little more than a recitation of royalty numbers . . . .”104

Soon after, in ResQNet.com, the Federal Circuit found that admission of expert testimony based upon the patentee’s prior licenses for unrelated patents was an abuse of discretion.105 The defendant’s expert had similarly introduced licenses with insufficient relationship to the claimed invention “to drive the royalty rate up to unjustified double-digit levels.”106

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98. Lucent Technologies, Inc., 580 F.3d at 1317.
99. Id at 1323.
100. Id.
101. Id. at 1331.
102. Id. at 1325.
103. Id at 1327.
104. Id at 1329.
106. Id. at 870.
IV. UNILOC V. MICROSOFT

The Federal Circuit’s 2011 decision in Uniloc USA, Inc. v. Microsoft Corp. emphasized and clarified the more stringent standards for expert testimony on patent damages. In Uniloc, the court again reviewed a multimillion dollar damage award based on a hypothetical negotiation. Uniloc’s patent covered a system of deterring software copying through the use of “product keys.” Uniloc’s patent covered a system of deterring software copying through the use of “product keys.”

Product keys allow for remote user monitoring by creating a unique “ID” for each user upon registration. The information used to create this ID is shared with the vendor’s system. Each time the application is loaded, the ID on the user’s computer is compared with the legitimate ID stored in the vendor’s system. Use of the software can accordingly be restricted where copying is identified.

Uniloc’s expert employed the 25 percent “rule of thumb” to set the baseline for the royalty calculation. The expert testified that the “rule of thumb” had “been accepted by Courts as an appropriate methodology in determining damages, in [his] experience, in other cases.” Microsoft had challenged the 25 percent rule in limine and attempted to exclude this testimony. Despite noting “the concept of a ‘rule of thumb’ is perplexing in an area of the law where reliability and precision are deemed paramount,” the district court denied Microsoft’s motion because the 25 percent rule had been widely accepted. The 25 percent rule “approximates” the reasonable royalty rate that the manufacturer would be willing to offer during a hypothetical negotiation. The rule supposes a licensee would pay a royalty rate equivalent to 25 percent of its expected profits for the product that incorporates the patent.

In addition to applying the 25 percent rule, Uniloc’s expert testified that he had “checked” his findings against the total revenue for Microsoft’s Office and Windows products—approximately $19 billion. Microsoft also objected to this portion of the expert’s testimony, arguing that it constituted a misapplication of the Entire

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107. Uniloc USA, Inc. v. Microsoft Corp., 632 F.3d 1292, 1296 (Fed. Cir. 2011)
108. Id.
109. Id.
110. Id.
111. Id. at 1311 (“hypothesizing that 25 percent of the value of the product would go to the patent owner and the other 75 percent would remain with Microsoft, resulting in a baseline royalty rate of $2.50 per license”).
112. Id.
113. Id. at 1312.
114. Id.
115. Id. at 1311.
116. Id. at 1312.
Market Value Rule ("EMVR"). On this issue, the district court agreed, and granted Microsoft’s motion for a new trial on damages. Under the EMVR, a patentee may base its reasonable royalty on the full commercial value of the device containing the infringing component; the total revenue for the infringing product becomes the baseline for application of the relevant Georgia-Pacific factors. The EMVR has “typically been applied to include in the compensation base unpatented components of a device when the unpatented and patented components are physically part of the same machine,” but may include separate components where, together with the patented components, they constitute “a functional unit.” “For the [EMVR] to apply, the patentee must prove that the patent-related feature is the ‘basis for consumer demand,’” that is to say, the reason consumers purchase the whole product. The Federal Circuit has also allowed application of the EMVR where the patented feature “substantially creates the value of the component parts.”

Microsoft argued that Uniloc’s expert’s pie chart, which contained the total revenue number, and Uniloc’s attorneys’ “belittlement of Microsoft’s expert’s royalty figure as representing only .0003 percent of total revenue” constituted improper invocation of the EMVR. Neither party sought to show whether the product keys covered by the patent “created the basis for customer demand or substantially created the value of the component parts.”

On appeal, the Federal Circuit dispensed with the 25 percent rule as a matter of law, holding that it is a “fundamentally flawed tool for determining a baseline royalty rate in a hypothetical negotiation” that is “inadmissible under Daubert and the Federal Rules of Evidence, because it fails to tie a reasonable royalty base to the facts of the case at issue.” The court emphasized that “one major determinant of whether an expert should be excluded under Daubert is whether he has justified the application of a general theory to the facts of the case.” Because the 25 percent rule does not shed light on any “particular hypothetical negotiation or reasonable royalty involving any particular technology, industry, or party,” the court found that

117. Uniloc, 632 F.3d at 1312.
118. Id.
119. Rite-Hite, 56 F.3d at 1550.
120. Id.
121. Id. at 1549.
122. Lucent, 580 F.3d at 1336.
123. Uniloc, 632 F.3d at 1321.
124. Id. at 1319.
125. Id. at 1315.
126. Id. (emphasis added).
any expert testimony relying on the rule should be deemed inadmissible.\textsuperscript{127}

The Federal Circuit also held that the expert’s use of a $19 billion “check” was improper under the EMVR.\textsuperscript{128} The court highlighted the case as an “example of the danger of admitting consideration of the entire market value of the accused where the patented component does not create the basis for customer demand,” because “[t]he $19 billion cat was never put back into the bag even by Microsoft’s cross-examination of [the expert]. . . .”\textsuperscript{129}

The \textit{Uniloc} decision concludes that the proper damages methodology must be an “economically coherent hypothetical negotiation tied to the \textit{Georgia-Pacific} factors and grounded in the facts of the particular case.”\textsuperscript{130} But the “economically coherent” standard is amenable to competing interpretations. Moreover, the court’s reaffirmation of the \textit{Georgia-Pacific} fifteen-factor test will allow parties to continue to present juries with competing “apples-to-oranges” analyses. While stricter scrutiny of expert testimony is a widely anticipated result of \textit{Uniloc},\textsuperscript{131} it remains to be seen what evidence \textit{will} meet the court’s new requirements.\textsuperscript{132} “Sufficiently relevant facts may be hard to find; and the costs to patent holders for the economic analysis are likely to be high.”\textsuperscript{133} If \textit{Uniloc} provides defendants with any safeguard against the dangers of expert testimony and the threat of “runaway damages awards,”\textsuperscript{134} it is an emphasis on the gate-keeping function of the judge. To have a lasting effect, trial judges must read \textit{Uniloc} to invite a more active role of the court in shaping the appropriate damages analysis.

\textsuperscript{127} Uniloc, 632 F.3d at 1318.
\textsuperscript{128} Id at 1320.
\textsuperscript{129} Id at 1320.
\textsuperscript{131} Id at 160 (“As a result of these decisions, expert testimony on the amount of a reasonable royalty should be subject to higher evidentiary standards. Benchmark licenses will require more careful proof of comparability, and the 25 percent rule will no longer be ‘on call’ as a surrogate comparable license.”); see also Thomas Cotter, \textit{Reconsidering the Georgia-Pacific Standard for Reasonable Royalty Patent Damages}, 2010 B.Y.U. L. REV. 1661.
\textsuperscript{133} Id at 449.
\textsuperscript{134} Id.
V. GATEKEEPING POST-UNILOC AND THE RULE 706 SOLUTION

Uniloc has received substantial attention as well as citation. Several courts have expressly acknowledged the heightened review of expert testimony.\textsuperscript{135} Heightened scrutiny has resulted in exclusion of expert methodologies deemed to be attempts to couch inadmissible assumptions as accepted science.\textsuperscript{136} However, expert testimony dangers linger even in this more stringent landscape. With fifteen factors to choose from, parties can still tailor the damages analysis to support unreasonable awards.\textsuperscript{137}

Following Uniloc, trial judges should take a more active role in shaping the damages methodology. One available option is court-appointment of a testifying expert under Federal Rule of Evidence 706. The district courts have too long ignored the Rule 706 expert as a viable tool in achieving this oversight. In Daubert, the Supreme Court specifically pointed to Rule 706, which allows the court to enlist an expert of its own choosing:

The court may on its own motion or on the motion of any party enter an order to show cause why expert witnesses should not be appointed, and may request the parties to submit nominations. The court may appoint any expert witnesses agreed upon by the parties, and may appoint expert witnesses of its own selection. An expert witness shall not be appointed by the court unless the witness consents to act . . . . A witness so appointed shall advise the parties of the witness' findings, if any; the witness' deposition may be taken by any party; and the witness may be called to testify by the court or any party. The witness shall be subject to cross-examination by each party, including a party calling the witness.\textsuperscript{138}

The Rule is interpreted to provide for both technical advisors and testifying expert witnesses. Technical advisors have already been widely used in patent litigation for the purpose of educating the court.\textsuperscript{139} Court appointed testifying witnesses, however, are very rarely employed.

\textsuperscript{135} Inventio v. Otis Elevator Co., No. 06-CV-5377, 2011 WL 335905 (S.D.N.Y. Jun. 23, 2011) (McMahon, J.) ("to get the expert's testimony to the jury, his evidence must comport with what seems to me a rather exacting standard").

\textsuperscript{136} Oracle, 798 F. Supp 2d at 1120.

\textsuperscript{137} Durie & Lemley, supra note 14, at 629. ("With fifteen factors, lawyers can make an argument that some combination of factors will support virtually any number an expert (or a jury) might come up with. As long as juries have virtual carte blanche to pick a damages number, plaintiffs will continue to have an incentive to shoot for the moon, and the problems of excessive damages will continue.")

\textsuperscript{138} FED. R. EVID. 706.

Before adoption of the Federal Rules, many supported the use of court-appointed experts to facilitate both judges’ and juries’ understanding of scientific and technical evidence.\textsuperscript{140} In 1920, the United States Supreme Court acknowledged the trial court’s authority under the common law to appoint such experts.\textsuperscript{141} Court-appointed witnesses offer several benefits over those appointed by the parties. First and foremost, the appointed expert has no allegiance, subconscious or otherwise, to either party.\textsuperscript{142} Rather than hiding the ball from experts they fear will conclude unfavorably, the parties both contribute to informing a court-appointed expert of the underlying facts and data. In this way, a single expert is given competing hypotheses to evaluate, instead of molding his opinion to meet the needs of his employer.

Despite these apparent benefits, application of Rule 706 has been limited.\textsuperscript{143} A 1993 study conducted for the Federal Judicial Center sought to determine why judges so rarely make use of this tactic. Many of the judges responding to that study expressed concern that appointing an expert would disrupt the adversarial process. Courts have also expressed concern that the “aura” of a court-appointment would unduly influence the jury.\textsuperscript{144} This concern is heightened where the factual assessment can be readily applied by laypersons.\textsuperscript{145}

Courts should not hesitate to appoint Rule 706 experts in the face of astronomically divergent patent damages conclusions. Assessing a reasonable royalty requires consideration of economic factors with which an average juror is rarely familiar. The reality of a licensing negotiation—a licensing negotiation over a component of a component of a technology product—is not “within the comprehension of laypersons.” Section 284 so acknowledges, by expressly providing for the use of experts. To properly envision a “hypothetical negotiation,” the jury should be provided an objective set of data, rather than two equally unreasonable vignettes. The danger of a “trial by expert” is similarly abated in the patent damages

 addressed claim construction matters in about 41 percent of 90 cases and infringement or invalidity in about 20 percent of the 90 cases.”)\textsuperscript{146}


\textsuperscript{141} Id.

\textsuperscript{142} Gross, supra note 73, at 1220.

\textsuperscript{143} Joe S. Cecil & Thomas E. Wolfgang, \textit{Accepting Daubert’s Invitation: Defining a Role for Court-Appointed Experts in Assessing Scientific Validity}, 43 EMORY L.J. 995, 1005 (1994).

\textsuperscript{144} See, e.g., Kian v. Mirro Aluminum Co., 88 F.R.D. 351, 356 (E.D. Mich. 1980) (“The presence of a court-sponsored witness, who would most certainly create a strong, if not overwhelming, impression of ‘impartiality’ and ‘objectivity,’ could potentially transform a trial by jury into a trial by witness.”)

\textsuperscript{145} Id.
context. The jury need not reach the same value, or even employ the same methodology, as any expert.\textsuperscript{146} Thus the Rule 706 expert can effectively assist without encroaching on (or usurping) the province of the fact-finder.

Where complex end-user technology is at issue, the propriety of a court-appointed expert is arguably even greater. In calculating damages for component inventions, the reasonable royalty calculation requires apportionment between the patented and non-patented elements of the infringing product.\textsuperscript{147} To objectively evaluate the contribution of the patented component to the overall value of the invention, economic evidence and consumer surveys may be required.\textsuperscript{148} Importantly, consideration of other patented features should serve to limit the award. In the adversarial expert system, however, juries rarely hear this crucial evidence.\textsuperscript{149} As a result, reasonable royalty awards for single components are only modestly less than awards for patents covering the entire infringing product.\textsuperscript{150} An appointed expert lacks the adversarial incentives to withhold evidence of other patented features.\textsuperscript{151} Accordingly, juries are more likely to be presented with all of the relevant data by an appointed expert.

Use of a Rule 706 expert also allows the trial judge to maintain a greater degree of control over the methodology for calculating damages. In the typical adversarial expert scenario, the parties may offer expert testimony on the basis of completely different sets of Georgia-Pacific factors.\textsuperscript{152} As a result, the jury cannot make an

\begin{itemize}
\item \textsuperscript{146} SmithKline Diagnostics, Inc. v. Helena Laboratories Corp., 926 F.2d 1161, 1168 (Fed. Cir. 1991).
\item \textsuperscript{147} Lemley & Shapiro, supra note 7, at 2023.
\item \textsuperscript{148} Lemley & Shapiro, supra note 7, at 2024.
\item \textsuperscript{149} Id. (“Practically, it is not clear that parties have either the ability or the incentive o introduce evidence that other patented components contribute to a product’s success. . . . The patentee will not introduce such evidence because it would only reduce the royalty rate. The accused infringer will often not introduce it because the firm does not want to admit that it might be infringing other patented inventions.”)
\item \textsuperscript{150} Id. at 2034 (“The royalty rate for components is approximately 10.0 percent, compared with 13.1 percent for all inventions . . . but this difference is fairly modest. To see just how modest, consider that the reduction in royalty rate for component inventions is equivalent to a conclusion that there are on average less than 1.5 components in a multi-component invention. Obviously, this does not reflect the commercial reality.”)
\item \textsuperscript{151} One consideration that should be acknowledged is cost. Consumer surveys and compilation of relevant data does not come cheap. Pursuant to the Rule, the cost of an appointed expert may be borne “by the parties in the proportion and at the time the court directs.” FED. R. EVID. 706. Thus the court is free, in appointing an expert, to apportion costs at its discretion. Courts should carefully assess the facts and needs of each case in determining what costs may reasonably be incurred by the appointed expert and passed through to the parties.
\item \textsuperscript{152} Durie & Lemley, supra note 14, at 629.
\end{itemize}
Apples-to-apples comparison of the data presented at trial. The Rule 706 expert, incorporating evidence provided by both parties, alleviates the jury’s need to sift through unreasonable positions. Following Uniloc, at least one court has elected to ameliorate the problem of warring experts through the use of a court-appointed expert. In that instance, the range of expert-derived damages was “as much as $6.1 billion” (plaintiff) and “27.8 million” (defendant). The court noted, “far from complicating the jury’s decision on damages, the testimony of a 706 expert would assist the jury by providing a neutral explanation and viewpoint.”

Rule 706 affords the court a high degree of discretion and does not expressly provide for a standard of qualification for a court appointed expert. On the issue of patent damages, a court-appointed expert should be held to a heightened standard of experience or specialization than those appointed by the parties. The reasons for a heightened standard are twofold: (1) the court must be mindful of the public trust in the court’s truth-seeking function, and (2) as noted above, an appointed witness may greatly influence the jury.

Party appointed witnesses who testify on patent damages have diverse backgrounds. Some are economists or professors who claim expertise in bargaining theories. Others are attorneys or other advisors who have participated in licensing negotiations. Appropriate skills will vary with the facts of each case. In all cases, however, the court should seek to appoint an expert whose field of research or skill directly relates to the underlying questions. Failure to properly “match” the expert with the task at hand can have embarrassing effects on credibility. In Uniloc, for example, the court noted that “upon further questioning, [Uniloc’s expert] revealed that he had been involved in only four or five non-litigation related negotiations, and had recommended the 25 percent rule only once in a case involving a power tool.” Thus the credibility of the expert and his methodology can be called into question by the parties’ failure to “match” skills with the facts to be determined. The trial court, with no stake in the ultimate opinion of the expert to be employed, is in a better position to assess the soundness of methodology and the proper fit for the case at hand.

154. Id.
155. Id. But note, at the time of this writing, Oracle is still pending trial.
156. Oracle America, Inc. v. Google, Inc. No. 10 CV 03561 Dkt. No. 413 (2011)
VI. CONCLUSION

Restoring certainty in damages recovery is crucial to the goals of the patent system. Importantly, both over and under compensation are present in the current landscape.\textsuperscript{157} Where patentees are under-compensated, the prospective infringer may be better off infringing than taking a license.\textsuperscript{158} This scenario runs directly counter the \textit{quid pro quo}, which seeks to reward inventors through a limited monopoly. On the other hand, when patentees are over-compensated, the social costs of the patent system increase.\textsuperscript{159} An efficient patent system, consistent with the Constitutional mandate, would strike a balance between “preserving incentives for the initial inventor and minimizing the detrimental impact to subsequent improvers.”\textsuperscript{160}

The appointment of credible, neutral experts will not only aid the jury in determining the appropriate compensation for infringement, but may serve to usher the parties towards a reasonable settlement. The economic justifications for the patent system require certain and swift enforcement of the patentees rights. To restore balance in the \textit{quid pro quo}, the current damages landscape requires greater judicial oversight. \textit{Uniloc} is an invitation for the district courts to provide exactly that.

\textsuperscript{157} Cotter, \textit{supra} note 12, at 10.
\textsuperscript{158} \textit{Id.}
\textsuperscript{159} \textit{Id.} Noting that, in addition to the social cost in over-compensating the patentee, “inflated damages awards may threaten to over-deter would-be users from lawfully designing around in ways that come close to, but do not, constitute infringement.”
\textsuperscript{160} Landers, \textit{supra} note 21, at 505.