IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

ORACLE AMERICA, INC.,

Plaintiff,

v.

GOOGLE INC.,

Defendant.
_____/

No. C 10-03561 WHA

ORDER GRANTING IN PART AND DENYING IN PART GOOGLE'S *DAUBERT* MOTION TO EXCLUDE DR. COCKBURN'S THIRD REPORT

INTRODUCTION

In this patent and copyright infringement action involving Java and Android, defendant challenges plaintiff's third damages expert report. For the following reasons, the motion is **GRANTED IN PART** and **DENIED IN PART**.

STATEMENT

Two previous damages reports for plaintiff have been stricken. The first order dated July 22, 2011, rejected Dr. Ian Cockburn's damages report for failing to apportion the value of the asserted claims and instead using the total value of Java and Android in calculating damages, among other reasons (Dkt. No. 230). The second order dated January 9, 2012, partially excluded his revised damages report for using a flawed apportionment methodology, among other reasons (Dkt. No. 685). In his latest damages report, Dr. Cockburn advances new apportionment methodologies.

First, Dr. Cockburn starts with Sun's February 2006 demand of $99 million to defendant Google Inc. *Second*, he upwardly adjusts by $557 million to account for lost convoyed sales Sun projected to make through its licensing partnership with Google. *Third*, he adds $28 million by removing a revenue-sharing cap, resulting in a subtotal of $684 million. This is the pie he then apportions between the intellectual property in suit and the intellectual property not in suit. *Fourth*, he allocates part of this number to the patents and copyrights in suit, using two alternative methodologies — the so-called "group and value" and "independent significance" approaches (Rpt ¶¶ 37–68). Based on these alternative apportionment methodologies, reasonable royalties for patents and copyrights in suit, through the end of 2011, are (1) between $70 and $224 million under the group-and-value approach, and (2) at least $171 million under the independent-significance approach. *Fifth*, he downwardly adjusts for extraterritorial infringement, failure to mark, and non-accused devices. With all the downward adjustments subtracted, Dr. Cockburn calculates patent damages to be between $18 and $57 million, and a copyright lost license fee to be between $35 and $112 million.

Unchanged from his second damages report, Dr. Cockburn calculates copyright lost profits to be $136 million and copyright disgorgement to be $824 million (not accounting for non-infringing apportionment, which step Google has the burden to prove). Thus, without reductions to copyright disgorgement, Dr. Cockburn calculates total damages to be approximately one billion dollars through the end of 2011.

Google moves to strike Dr. Cockburn's latest report under *Daubert*. This order follows briefing and a hearing.

ANALYSIS

An expert witness may provide opinion testimony "if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case." FRE 702. District courts thus "are charged with a 'gatekeeping role,' the objective of which is to ensure that expert testimony admitted into evidence is both reliable and relevant." *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1360 (Fed. Cir. 2008).

1. GROUP-AND-VALUE APPROACH.

One method advanced by Dr. Cockburn for calculating reasonable royalty for both patents and copyrights is the so-called group-and-value approach. Under this approach, Dr. Cockburn first identifies the components that would have been licensed from Sun to Google in the 2006 bundle. This would have included a license to Sun's Java mobile patents and copyrights, promotion of the Java brand and trademark, and the benefit of Sun's engineering resources in developing Android (Rpt ¶ 338).

Dr. Cockburn first apportions the 2006 licensing fee and lost convoyed sales ($684 million) downward by $86 million to account for projected engineering expenses Sun would have incurred through its licensing partnership with Google, leaving $598 million (Rpt ¶ 48). Then, based on a qualitative patent ranking by Oracle engineers and a published study generally regarding the distribution of patent values, he concludes that the six patents in suit are worth somewhere between 10.2% and 32.7% of the total Java mobile patent portfolio ($70 and $224 million). Based on Dr. Steven Shugan's conjoint analysis, which had suggests that consumers value the availability of applications (enabled by the asserted copyrights) approximately half as much as application speed (enabled by the asserted patents) in smartphones, Dr. Cockburn sets the value of the asserted copyrights at half the value of the asserted patents (Rpt ¶¶ 6, 54). With all the relative values in place, Dr. Cockburn allocates the adjusted starting point of $598 million between the patents in suit, copyrights in suit, and patents not in suit using an algebraic formula with only one variable to solve. These steps are now considered in detail.[1]

A. Ranking of Patents.

To rank the six patents in suit with all other patents in the 2006 licensing bundle, a team of Oracle engineers recently evaluated the Sun patents that would have been included in the 2006 bundle and ranked those patents based on expected technical contribution to a smartphone platform (Rpt ¶¶ 391–97). The Oracle engineers began by identifying 22 Java technology groups, such as *boot, *jit, and *interpreter, that would have been relevant to a smartphone platform in

[1] His report was based on the six patents in suit. While the briefing was underway, one was withdrawn with prejudice. After the hearing, another three rejected by the examiner were withdrawn if the trial is held before the administrative appeals are completed, a withdrawal whose effect will be considered below.

2006, the time of the hypothetical negotiation (Reinhold Decl. ¶ 10). They then ranked those 22 groups by considering their importance to startup time, speed, memory and security for a smartphone platform (*id.* ¶ 19). So, this step identified 22 technology groups.

Separately, the engineers created a list of over 1300 patents issued to Sun prior to June 30, 2006 by filtering for patents that include the terms "Java" or "bytecode" or listed James Gosling or Nedim Fresko as an inventor. By reviewing the titles, abstracts, inventors, application dates, and where necessary, the specifications and claims, the engineers were able to evaluate which patents would have been included in the parties' 2006 smartphone platform negotiations (*see, e.g.*, Reinhold Decl. ¶ 17; Kessler Decl. ¶ 9). This process left 569 relevant patents that would have been included in the 2006 bundle. The engineers then categorized those 569 patents into the 22 technology groups.

Next, the engineers rated the importance of each of the 569 patents on a three-point scale ("1" being most valuable), within each technology group, based on the patented functionality's expected contribution to a smartphone platform's startup, speed, or footprint (Reinhold Decl. ¶ 21). Then, Oracle engineers counted the number of patents that were in the purportedly top three technology groups (out of the aforementioned 22 non-overlapping technology groups) *and* had a "1" rating. This count resulted in 22 patents (to avoid confusion, the reader must appreciate that the number 22 here has no correlation with the 22 for the number of technology groups), which included three of the patents in suit. Dr. Cockburn then decided that these 22 patents were the most valuable of Sun's Java mobile patent portfolio in 2006.

In its briefs, Google argued that the Oracle engineers were biased in their ranking of the patents in the 2006 bundle. At the March 7 hearing, however, Google conceded that the issue of bias was a point for cross-examination at trial and no longer a basis for its *Daubert* motion.

A different concern, however, arises in Dr. Cockburn's methodology for determining the "upper bound" of the ranking, and therefore the reasonable royalty analysis. Not satisfied that three of the patents in suit were among the top 22 patents selected by Oracle engineers, Dr. Cockburn further opines that those three patents in suit — the '720, '205, and '104 patents — are *the* most valuable of the top 22 patents, thus propelling the three to ever higher damage

calculations (from $59 million to $191 million). This further "top three" ranking lacks a reliable basis and must be stricken.

Dr. Cockburn concedes that the Oracle engineers themselves were not able to differentiate (*i.e.*, further rank) the top 22 patents in terms of value to the project (Rpt ¶ 409). Dr. Cockburn, however, opines that because Google decided to infringe those three asserted patents (for damage purposes we must presume the jury will find infringement), then those three patents must have been the most valuable in 2006. This logic is too thin to support the huge weight piled thereon. There is nothing in Dr. Cockburn's report to show that Google planned in 2006 to incorporate those particular functionalities covered by the three patents into Android. Moreover, as Dr. Cockburn himself writes elsewhere in his report, patents in a single portfolio derive value from complementing each other to prevent design around, meaning that unasserted patents are valuable because they prevent design around asserted patents (Rpt ¶ 335). In addition, Dr. Cockburn's reasoning is internally inconsistent because three *other* asserted patents — the '702, '520, and '476 patents — do not even rank in his top 22 patents in terms of value.

Thus, the "upper bound" of the patent ranking and the reasonable royalty calculation derived from it are **STRICKEN**. Specifically, Dr. Cockburn can only opine on his "lower bound" calculation, in which each patent in his top 22 has equal value to each other. The calculation of dollar values will be spelled out in the next step of the analysis.

B. Patent-Value Studies.

Building on the ranking by Oracle engineers, Dr. Cockburn performs additional steps to calculate the dollar value of the now-ranked patents. He begins by relying on three patent-value studies to estimate the relative value distribution of the now-ranked patents in the 2006 bundle. A. GAMBARDELLA, P. GIURI, AND M. MARIANI, "THE VALUE OF EUROPEAN PATENTS — EVIDENCE FROM A SURVEY OF EUROPEAN INVENTORS," FINAL REPORT OF THE PATVAL EU PROJECT, January 2005; D. HARHOFF, F. SCHERER, K. VOPEL, "CITATIONS, FAMILY SIZE, OPPOSITION AND THE VALUE OF PATENT RIGHTS," RESEARCH POLICY 32, October, 2002; J. BARNEY, "A STUDY OF PATENT MORTALITY RATES: USING STATISTICAL SURVIVAL ANALYSIS TO RATE AND VALUE PATENT ASSETS," AIPLA QUARTERLY JOURNAL, VOL. 30, NO. 3, Summer

2002. For his specific numerical calculation, however, Dr. Cockburn only uses numbers from the so-called PatVal study. Each of the cited studies concludes that the distribution of value among patents in the portfolios studied is highly skewed, *i.e.*, that a handful of patents accounted for a large percentage of the value of all patents in a sample set. Based on the results of these studies, Dr. Cockburn concludes that the top 22 patents in Sun's Java mobile patent portfolio, which consisted of 569 patents in total, were worth 77.1% of the 2006 patent portfolio's overall value, and the combined value of the six patents in suit were worth between 10.2% and 32.7% (Rpt ¶¶ 408, 412, Exh. 36).

In his report, Dr. Cockburn opines that based on his experience dealing with technology licensing and his academic work, the observed value-distribution curves from the cited studies are applicable to the expected value distribution of Sun's Java mobile patent portfolio (Rpt ¶ 404, 412 fn 420). The PatVal study calculated a value-distribution curve for European patents based on approximately 10,000 survey responses from inventors covering nearly 10,000 patents across countries and technology areas. The Harhoff study was based on 394 survey responses covering 772 German patents across technology areas. And the Barney study extrapolated a lognormal distribution curve based on maintenance rates for 70,000 U.S. patents across technology areas.

Google argues that the cited studies are inapplicable to patent portfolios of a single technology company based in the United States, such as Sun in 2006. In his declaration herein, Dr. Cockburn further explains the studies' applicability to the facts of this action. Dr. Cockburn explains that the value-distribution curve of a single company's distribution would be similar to that of a broader sampling of industries and countries because the same distribution curve is seen time and time again in a variety of contexts (Cockburn Decl. ¶¶ 4–12). As support, he appends a study where the value-distribution curve of patents owned by Harvard is similar to broader country-wide sample sets of U.S. patents and German patents (Cockburn Decl. Exh. A). He also cites other studies that have also reported similar value distributions for patents limited to specific product areas (Cockburn Decl. ¶ 8). He also describes his own personal experience evaluating patent values in single portfolios where the value distribution was similar to the three studies

(Cockburn Decl. ¶ 9–12). Google has not submitted opposing studies to suggest otherwise. Dr. Cockburn's explanations are sufficient, for the purposes of *Daubert*, to rebut Google's objections.

At the hearing and in its briefs, Google objected to the fact only 569 patents were selected from many thousands then-owned by Sun as the sample set for plotting a distribution curve. Google argues that Dr. Cockburn should have applied the studies' distribution curves on all of Sun's patents, which was a much larger group. This argument will perhaps persuade the jury and it may persuade others trained in such matters but it is not enough to exclude the analysis from trial. As Dr. Cockburn and the Oracle engineers explain, the 569 patents were chosen based on an allegedly objective criteria of whether they would have been included in the 2006 bundle. Since the apportionment analysis attempts to apportion the value of the 2006 bundle, it is methodologically permissible to apply a value-distribution curve only to patents that would have been included in the 2006 bundle. Google has not shown a systemic bias in the selection of the 569 that would render the studies' distribution curves inapplicable. The selection criterion was merely relevance to smartphones, a criterion that has not been shown to misalign with the value-distribution curves.

Therefore, Dr. Cockburn can opine that the 569 patents that would have been included in the 2006 license bundle had a value-distribution curve similar to that observed in the three cited studies. Dr. Cockburn can also opine that three of the patents in suit, the '720, '205, and '104 patents, were among the 22 most valuable patents in the bundle (top four percent, calculated from 22 divided by 569) but cannot opine that those three patents were *the* most valuable of the 569 patents (top 0.5%, calculated from three divided by 569).

With the relative values of the 569 patents and the dollar amount of the adjusted start point, Dr. Cockburn uses an algebraic formula to calculate the dollar value of the patents. Under his "lower bound" calculation — in which, as discussed earlier, each patent in his top 22 has equal value to each other — each of the 22 top patents has a reasonable royalty of approximately $20 million (calculated by averaging or spreading evenly the total value, approximately $440 million, across the top 22 patents), before discounting for downward adjustments due to marking, non-accused devices, and extraterritorial infringement. As discussed in the previous section, Dr.

Cockburn can only opine on this "lower bound" calculation ($20 million per patent before offsets), and *not* the "upper bound" calculation.

Requiring Dr. Cockburn to use the average value of the top four percent of the patent portfolio (from the "lower bound" calculation), instead of using the extrapolated value of the top 0.5% (from the "upper bound" calculation), will largely obviate concerns of confidence interval and sample size addressed next.

C. The Court's Own Concerns Regarding the Value-Distribution Curves from the Cited Studies.

The Court itself has raised a criticism that will now be stated if only for the record. This criticism was not joined in by Google and therefore it will not be a ground for excluding the report. Nonetheless, the reader will appreciate that this aspect of Dr. Cockburn's approach is a concern, at least to this district judge.

No one should doubt that the distribution of value in any patent portfolio will be skewed. A few patents will typically represent a disproportionate share of the overall portfolio value. This accords with the familiar 80/20 "rule of thumb" in life that twenty percent of any group accounts for eighty percent of the results. In this case, however, the issue is the extent to which the skewness is even more lop-sided than 80/20 such that a tiny part of any randomly selected portfolio represents a very high percentage of the overall value of that portfolio.

Here, Dr. Cockburn selected three portfolios studied in the literature and examined the far right "tail" of each of the three distribution curves. For the top twenty percent, the results varied only slightly, showing 94.4 percent, 90.8 percent and 98.4 percent of the overall value was in the twenty-percent segment (*see* Rpt Exh. 34*)*. This is higher than the 80/20 rule of thumb but the three results were fairly close and averaged around 94 percent, so this is not the concern. By contrast, for the top one percent, the three sample portfolios varied widely: 52.6 percent, 42.1 percent, and 78.4 percent of the overall value of the three samples. When only three samples are taken and the results vary widely, our level of confidence in their predictive power is not very high. That is, we now have only three sample portfolios; what are the chances that a fourth portfolio randomly chosen will conform to the three? While it seems likely that the overall general shape of all the curves will be similar, it is only the tip of the right-hand tail that matters

for present purposes. For the tip of the tail — the far right one percent — the shapes vary widely among the three and there is little assurance that a fourth sample will even fall within the range of the one-percent data points associated with the three samples.

The reason that the one-percent results vary more widely seems clear — the one-percent segment deals with very few data points within each sample portfolio, so few data points in fact, that one must ask if the extreme right of the distribution curves should be disregarded as "outliers." But even if all the data points are fully credited (meaning that the outlier problem is ignored), the fact remains that they produce widely varying results as among only three sampled portfolios, a circumstance that counsels in favor of analyzing more portfolios until enough of a pattern emerges as to the one-percent segment that would allow reasonably firm conclusions to be drawn as to that tip-of-the-tail segment. Again, for the twenty-percent case, with so many more data points factored in, the results are sufficiently close that we can have confidence in the more compact range, even with only a sample of three. The opposite applies, however, to the one-percent case with correspondingly fewer data points and far more volatility in the results. This may be important in determining reliability when such large extrapolations are predicated, as here, on such a small sample size.

This problem was raised *sua sponte* by the Court and addressed at the March 7 hearing. Counsel for Google, however, conceded that the far right of the curve would be as suggested by Dr. Cockburn and did not adopt this criticism. The Court, therefore, will merely note the criticism for the record, lest it be said later, that this district judge approved this use of patent-value distribution curves over this reservation.

D. Patent-by-Patent Instead of Claim-by-Claim.

Dr. Cockburn's report does not break out the value of the unasserted claims of the patents in suit versus the asserted claims (Cockburn Dep. at 90). Nevertheless, this order finds that a claim-by-claim apportionment is not required under current patent law. Admittedly, this conclusion retreats from prior suggestions by the Court that apportionment should be on a claim-by-claim basis.

The reasonable royalty statute requires that the patentee is awarded "a reasonable royalty for the use made of the *invention* by the infringer." 35 U.S.C. 284 (emphasis added). Under current USPTO guidelines, there is a presumption that each issued patent contains only one independent and distinct invention. MPEP 802; *see* 35 U.S.C. 121, 37 C.F.R. 1.141. If each patent covers only one invention, then each claim represents merely different shades of the same invention and it is reasonable to require — in the hypothetical negotiation — that the infringer license the entire patent. Thus, Dr. Cockburn is not required to apportion damages on a claim-by-claim basis.

E. Apportionment of Unasserted Copyrights.

Google argues that Dr. Cockburn fails to adequately discount the value of unasserted copyrights. Admittedly, Dr. Cockburn does not separately evaluate unasserted copyrights, such as source code implementing the virtual machine and all class libraries not in dispute (Cockburn Dep. at 151–52). Instead, Dr. Cockburn opines that the value of all copyrighted materials other than the APIs at issue, *i.e.*, source code, is subsumed into the $86 million reduction for Sun's projected engineering expenses because Sun engineers would have written all the necessary code for Google (Rpt ¶¶ 362–86). Put another way, Dr. Cockburn opines that Google, in 2006, would not have placed any value on Sun's source code *in addition* to the value of work Sun engineers would do under the 2006 licensing agreement to implement Java on Android.

Dr. Cockburn is wrong on this one. If, during a hypothetical negotiation in 2006, Sun had taken its engineering know-how off the negotiation table, then Google would have subtracted $86 million from its adjusted starting-point offer, per Dr. Cockburn's calculation. There would, however, have still been value associated with the source code and other copyrighted items that Google would have received the option to use even through Google wound up electing not to do so in the actual event.

The value of the unasserted copyrights should not be subsumed into the reduction for engineering costs. Dr. Cockburn shall adjust his group-and-value calculation by deducting $37 million, his calculated value of the unasserted copyrights, from the adjusted starting point of $598

million. Accordingly, $561 million shall be the total value of the copyrights in suit and 569 patents in Sun's Java mobile patent portfolio.

2. INDEPENDENT-SIGNIFICANCE APPROACH.

Dr. Cockburn advances an alternative method for calculating reasonable royalty. Under the so-called independent-significance approach, Dr. Cockburn opines that at least 25% of the 2006 licensing bundle would have been attributable to the patent claims in suit. This opinion is based on "his expertise" and (1) documents in 2006 on the importance of characteristics such as processing speed, memory, and number of applications to Android, (2) documents in 2006 on the availability of non-infringing alternatives to a Java license, (3) opinions of Oracle's technical expert on the importance of the patent claims to Android, and (4) benchmarking studies conducted in 2011 to determine the performance benefits of the patent claims on Android's performance (Rpt ¶¶ 5, 60–68; Cockburn Dep. at 135–37). The independent-significance approach does *not* consider the econometric study, conjoint analyses, or a breakdown of value for each component of 2006 licensing bundle (*e.g.*, value of Oracle engineers, value of the copyrights not in suit, and value of the non-asserted patents that would have been in the 2006 license bundle) (Rpt ¶¶ 67, 325).

In rejecting Dr. Cockburn's prior attempt at apportionment, the January 9 order held, "[i]f the $100 million offer in 2006 is used as the starting point . . . then a fair apportionment of the $100 million as between the technology in suit and the remainder of the technology then offered must be made." In Dr. Cockburn's latest report, the independent-significance approach makes no attempt to do so.

Instead, the independent-significance approach relies on evidence that the patents in suit would have been important to Google in 2006 to derive an apportionment of the 2006 licensing bundle, without any analysis of the remainder of technology offered in the bundle. Under this approach, Dr. Cockburn attributes at least 37.5% of the value of the 2006 offer to the patent claims and copyrights in suit, leaving no more than 62.5% percent to be spread over the many thousands of other know-how items included in the 2006 offer.

Just like the rejected apportionment methodology in the prior report, the fatal flaw in the independent-significance approach is that the universe of know-how included in Android during 2008–2011 was different from the universe of know-how included in the 2006 offer. The January 9 order has already explained this apples-and-oranges problem (Dkt. No. 685 at 8):

> Android today undoubtedly represents some Java know-how, some technology owned by strangers to this litigation (presumably licensed), and a fair dose of Google's own engineering. The 2006 offer, in contrast, represented thousands of Java-related features, many of which never made it into Android but nonetheless would have had value. Dr. Cockburn failed to account for this disconnect.

While the evidence considered by the independent-significance approach arguably shows that the patents in suit would eventually contribute to the success of Android, the fact remains that the rest of the 2006 bundle does not bear any relationship to the rest of the Android. Reasonable parties in 2006 might well have viewed the rest of the 2006 bundle as worth far more than the patents and copyrights asserted in this action.

Oracle argues that the independent significant approach is similar to the damages methodology approved by the court of appeals in *Finjan, Inc. v. Secure Computing Corp*., 626 F. 3d 1197 (Fed. Cir. 2010). In that decision, the jury had found that defendant infringed three software patents related to proactive scanning (techniques for defending against computer viruses) and awarded reasonable royalty damages based on the testimony of patentee's expert. At trial, the patentee's expert had invoked the entire market value rule and opined that after (1) eliminating expenses not related to the patented functionality, such as research and development expenses for the accused product and litigation costs, and (2) relying on evidence that the patented technology was fundamentally important to the infringing product, among other factors, the proper royalty rate was between 8%–18% of infringer's actual revenue. The court of appeals upheld the damages award. *Id.* at 1207–12.

Finjan is inapposite to the situation here. The expert in that action derived an apportionment percentage of the infringing product's revenue after discounting non-patented value *in that product*, such as R&D expenses. Here, the independent-significance approach attempts to derive an apportionment percentage of the 2006 licensing bundle without discounting

the value of non-asserted intellectual property *in that bundle*. This apportionment methodology is flawed and shall be **STRICKEN**.

3. CONJOINT ANALYSIS.

Throughout his reasonable royalty analysis for each patent and copyright, Dr. Cockburn cites Dr. Steven Shugan's conjoint analysis for an estimate of Android's increase in market share due to infringement (*see* Rpt Exhs. 6–11). Moreover, in the group-and-value approach, Dr. Cockburn expressly relies on the conjoint analysis for his assumption that the copyrights in suit are worth half the value of the patents in suit. This ratio of one to two is critical to his deriving an algebraic equation to do the apportionment (as explained below).

For the conjoint analysis, Dr. Shugan used a web-based survey to measure the relative importance to consumers of seven smartphone features: application multitasking, application startup time, availability of third-party applications, mobile operating system brand, price, screen size, and voice command capabilities (Shugan Rpt at 10). The survey asked respondents to choose between side-by-side comparisons of different smartphone "profiles." Each profile was a written list of varied levels of functionality in each of the seven features — for example, one phone might be described as (1) an Android phone with (2) a 4.5-inch screen that (3) can run five apps at once (4) with a startup time of 2 seconds, (5) 300,000 available apps, and (6) voice dialing and texting (7) available for a sale price of $200. Respondents were instructed to assume that every feature other than the seven listed features remained constant (Shugan Rpt App. E at E12–E20). After collecting the respondents' selections, Dr. Shugan ran a regression analysis to determine the relative importance of each feature to overall consumer product preference. This estimate was then used by Dr. Cockburn in the group-and-value approach to allocate the value of the 2006 bundle between the patents in suit and copyrights in suit. Dr. Shugan also calculated changes in Android market share if the patented functionalities were removed. This estimate was used by Dr. Cockburn in his reasonable royalty calculations for each patent and copyright in suit.

A. Conjoint Surveys Generally.

Consumer surveys are not inherently unreliable for damages calculation. *See Lucent Technologies, Inc. v. Gateway, Inc*., 580 F.3d 1301, 1333–34 (Fed. Cir. 2009). Google's own

damages expert has written that conjoint surveys are appropriate for damages calculation in litigation (Dkt. No. 738 at Exh. I).

Google argues that Dr. Shugan's conjoint analysis is too simplistic because "if 20% of consumers value application start time more than other tested features, an increase in application start time on Android phones would mean 20% drop in Android market share" (Br. 15). This is a misunderstanding of Dr. Shugan's conjoint analysis. As illustrated by Exhibits 3–4 in Dr. Shugan's report, the market-share estimate is based on changes in Android preference shares after varying a particular product feature, holding all other features constant among different Android models.

This order, however, need not decide the broad question of whether conjoint analyses are rigorous enough for predicting changes in market share. As the following section explains, Dr. Shugan's conjoint analysis in this particular instance is an unreliable predictor of market share.

B. Unreliable Market Share Calculation.

Google argues that Dr. Shugan's conjoint survey results are unreliable because the features selected to be surveyed, only seven in total, were purposely few in number and omitted important features that would have played an important role in real-world consumers' preferences. Google argues that this inappropriately focused consumers on artificially-selected features and did not reliably determine real-world behavior. This order agrees — on this record for this application.

Dr. Shugan's own focus-group research discovered 39 features that real-world consumers said they would have considered when purchasing a smartphone, including battery life and cellular network (Shugan Rpt Exh. 1). But instead of testing 39 features in his conjoint analysis, Dr. Shugan selected seven features to be studied, three of which were covered by the patented functionality. It is highly likely that study participants would have placed greater importance on a feature like startup time if it were shown with six other features as opposed to 38 other features. In the first scenario, participants in the study were artificially forced to focus on startup time even if in the real world, startup time was unimportant to them. If Dr. Shugan had instead showed 39

different features to a study participant, then startup time (*i.e.*, the patented functionality) may have been drowned out by the multitude of other features that are considered by real-world consumers. In the real world, a consumer is faced with many features when making a decision to purchase, not artifically focused on a particular feature. This problem is exacerbated by the fact that important product features, such as battery life, WiFi, weight, and cellular network, all of which were not covered by the patented functionalities, were purposely left out and replaced with an arguably unimportant feature, voice dialing. Dr. Shugan had no reasonable criteria for choosing the four non-patented features to test; instead, he picked a low number to force participants to focus on the patented functionalities, warping what would have been their real-world considerations.

In response to this concern, Oracle explains that it is not necessary in a conjoint analysis to test every distinguishing feature that may matter to consumers because study participants are told to hold all other features constant (Shugan Decl. ¶ 25, 38). That may be true in theory. But here, the conjoint study's own irrational results shows that study participants did not hold all other, non-tested features constant. Specifically, the results show that one quarter of all participants preferred (9%), or were statistically indifferent between (16%), a smartphone costing $200 to a theoretically identical smartphone costing $100 (Zimmer Decl. Ex F at 114, Shugan Decl. ¶ 39; Shugan Reply Rep. 19). The likely explanation for this irrational result is that survey respondents were not holding non-specified features constant and instead placing implicit attributes on features such as price.

Oracle responds to this concern by arguing that irrational results, such as this, are acceptable as long as those participants were consistent in their irrationality for each product combination (Shugan Decl. ¶ 33):

> When respondents implicitly attribute aspects of other attributes to price or brand name, that is not inconsistent with holding constant all other variables that are not included in the conjoint study. There is no reason to believe that respondents who do enrich the value of the price or brand with variables not included in the conjoint study vary their evaluation of price or brand between the 16 choice sets from which they choose their preferred smartphones. Therefore, even if respondents enrich the value of price or brand, [Dr. Shugan is] still able to isolate the incremental benefit of the features at issue accurately. In other words, the meaning of price and brand may

> differ slightly for some consumers, but each individual consumer can be expected to have a constant view of the meaning of price and brand. That is all that this survey requires.

This post-hoc explanation is not persuasive. There is no reason to think that study participants believed that a $100 price increase for an iPhone has the same implicit attributes as a $100 price increase for an Android or Blackberry. Moreover, it is likely that Dr. Shugan has created this problem for himself. If the conjoint analysis had been expanded to test more features that were important to smartphone buyers (instead of the four non-patented features selected for litigation purposes), then the study participants may not have placed implicit attributes on the limited number of features tested. The conjoint analysis' determination of market share is **STRICKEN**.

C. Relative Preference Between Application Startup Time and Availability of Applications.

The above-described flaw, however, is not fatal to the conjoint analysis' calculation of the relative preference between "application startup time" and "availability of applications." The study participants were unlikely to infer implicit attributes onto these two features. The calculated relative preference between these two features is sufficiently reliable for the purposes of *Daubert*. Thus, Dr. Cockburn's use of this relative preference for his apportionment calculation is not stricken. Mathematically, Dr. Cockburn requires this ratio of 2:1 in order to allocate the adjusted starting point of $598 million (now $561 million) between the patents in suit, copyrights in suit, and patents not in suit using an algebraic formula with only one variable to solve. Dr. Cockburn uses the following equation to solve for the value of the patents in suit (Rpt ¶ 414):

$$\text{Value of the Patents In Suit} = \frac{\$561 \text{ million}}{(1.5 + A)} \text{, where } A = \frac{1 - \%\text{ of patent portfolio attributable to patents in suit}}{\%\text{ of patent portfolio attributable to patents in suit}}$$

And per the conjoint analysis, the value of the copyrights in suit are worth half the value of the patents in suit.

The reader may well reel in disbelief at this equation and wonder how the judge could let it be presented to the jury. While it is *sui generis* and will not be found in the textbooks, the equation is merely an arithmetical statement of the components previously allowed, such as the assumption that the 2006 value of the copyrights in suit would have been half the 2006 value of

the six patents in suit. The jury may well raise a skeptical brow over the seemingly convoluted testimony but that is not the test for *Daubert*.

4. ECONOMETRIC ANALYSIS.

Throughout the reasonable royalty analysis for each patent and copyright in suit, Dr. Cockburn's report cites his econometric analysis for an estimate of Android's increased market share due to infringement (*see* Rpt Exhs. 6–11).

For his econometric analysis, Dr. Cockburn sampled 2010 and 2011 eBay auction data for smartphones. This data included, for each auction, the maximum bid, equated to "willingness to pay," and the sales price. Aside from the eBay data, Dr. Cockburn also collected data about the attributes of each auctioned smartphone, such as speed, battery life, and storage space. Using both data sets, Dr. Cockburn conducted a regression analysis to predict "a consumer's willingness to pay" based on a smartphone's features. From this, Dr. Cockburn calculated the decrease in a consumer's willingness to pay for Android phones after removing the patented features (Rpt App. C1–C5).

Using calculated decreases in willingness to pay, Dr. Cockburn extrapolated the predicted decrease to Android's market share after removing the patented features. This was done by looking at the data for bidders who place bids on multiple smartphone models and calculating consumer surplus for each smartphone bid (Rpt App. C12–C13). By comparing each bidder's newly calculated consumer surplus for a slower Android (*i.e.*, Android without the patented features) and unchanged consumer surplus for other smartphones, Dr. Cockburn determined whether that bidder would have purchased the slower Android, purchased another smartphone they had bid on previously, or would not have purchased a smartphone at all.

Dr. Cockburn's determination of market-share impact was unreliable. Specifically, Dr. Cockburn's calculation of Android market share using consumers' willingness to pay was questionable. In his calculation of market-share change, Dr. Cockburn assumed that the sales prices of Android smartphones sold on eBay would remain constant even though he had previously determined that bidders would be less willing to pay for a slower Android.

Dr. Cockburn calculated market share by comparing the adjusted maximum bid (willingness to pay for a slower Android) to the unadjusted price at which the Android smartphone actually sold on eBay (sales price of the normal Android). The flaw in the analysis was that the sales price should also have been adjusted because the sales price in Dr. Cockburn's counterfactual was determined by the second highest bidder, whose willingness to pay would have also decreased if Android were slower. Put another way, in the counterfactual with a slower Android smartphone, if the winning bid was decreased because of a drop in consumers' willingness to pay, then every bid should have been decreased, leading to a decrease in the sales price of a slower Android smartphone. By not adjusting sales prices for Android, Dr. Cockburn likely overestimated the decrease in Android market share and thus, overestimated the revenue impact to Google of an Android smartphone without the patented features.

Oracle responds by explaining that for most Android smartphones, Google had no influence over the price at which OEMs sold phones or the extent to which carriers subsidized them (Cockburn Decl. ¶¶ 13–16). This explanation is not persuasive. It is unclear how prices set by OEMs and carriers for new Android phones would impact the sales price for eBay-auctioned Android phones. Dr. Cockburn does not contend in his report that OEMs and wireless carriers set minimum-bid prices for all or most of the eBay Android smartphones sold. The sales prices for eBay-auctioned Android smartphones were set by the winning bid. Indeed, Oracle's explanation highlights the disconnect between Dr. Cockburn's methodology and real-world predictions.

Thus, Dr. Cockburn's econometric calculation of the change in Android market share is **STRICKEN**.

5. POTENTIAL ISSUES NOT ADDRESSED BY THE PARTIES.

At the hearing, the undersigned judge raised the question of whether Dr. Cockburn's report provides a way for the jury to calculate damages in the event that Oracle prevails on fewer than all patents in suit. Now the only two remaining patents in suit are the '520 and the '104 patents. The Court understands how Dr. Cockburn's group-and-value methodology could arrive at a value for the '104 patent. But in light of the rulings in this order, it seems to the Court that there is no remaining methodology to place a value on the '520 patent. While this was briefly

discussed at the hearing, the parties shall also address how this affects, if at all, the copyright allocation, and how the one-half formula will be presented to the jury if Oracle only asserts one-third of the original denominator, the *three* patents in suit. By **NOON ON MARCH 19**, each side shall submit ten-page statements on this issue.

The undersigned judge also raised the question of whether the 2006 negotiations, on which Dr. Cockburn's hypothetical negotiation inquiry is based, entailed a fully paid-up license or only a three-year term license for the intellectual property at issue. Dr. Cockburn does not opine on this issue in his report. At the hearing, the parties disagreed with each other on the answer to this question. The Court itself believes this will be important for determining injunctive relief and ongoing royalties. However, since neither party has raised the issue, it will not delay trial, and both sides must take their chances on this one at trial.

CONCLUSION

For the reasons stated, the independent-significance approach is **STRICKEN**. The econometric analysis is **STRICKEN**. The conjoint analysis' determination of market share is **STRICKEN** in both Dr. Shugan's and Dr. Cockburn's reports. However, the conjoint analysis' determination of relative importance between application startup time and availability of applications is not stricken. The "upper bound" calculation in the group-and-value approach is **STRICKEN**. The "lower bound" calculation in the group-and-value approach shall be adjusted by deducting $37 million for the value of the unasserted copyrights from the adjusted starting point of $598 million. Therefore, $561 million shall be the total value of the copyrights in suit and 569 patents in Sun's Java mobile patent portfolio. Both parties shall please advise the Court how Dr. Cockburn's report could calculate a reasonable royalty for each individual patent in light of the items stricken by this order. The parties shall submit ten-page statements on this by **NOON ON MARCH 19**.

In allowing most of the study to be presented to the jury, the Court merely holds that those passages pass a minimum threshold without necessarily suggesting that the methods used are persuasive or the best method to address the problem. No expert witness shall say in the jury's presence that the Court has (or has not) approved any approach.

IT IS SO ORDERED.

Dated: March 13, 2012.

WILLIAM ALSUP
UNITED STATES DISTRICT JUDGE