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16	UNITED STATES DISTRICT COURT		
17	NORTHERN DISTRICT OF CALIFORNIA		
	SAN FRANCISCO DIVISION		
18			
19	ORACLE AMERICA, INC.	Case No. 3:10-cv-03561-WHA	
20		Honorable Judge William Alsup	
21	Plaintiff,	DECLARATION OF GREGORY K.	
22	v.	LEONARD, PH.D.	
23	GOOGLE INC.		
24	Defendant.		
25			
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27			
28			
	DECLARATION OF GRE	GORY K. LEONARD, PH.D.	
		CV 10-03561-WHA Dockets.J	
	1		

1 I, Gregory K. Leonard, Ph.D., declare as follows:

2 I. **QUALIFICATIONS**

3 1. I am a Senior Vice President at NERA Economic Consulting, 1 Front Street, Suite 4 2600, San Francisco, CA 94111. I received an Sc.B. in Applied Mathematics-Economics from 5 Brown University in 1985 and a Ph.D. in Economics from the Massachusetts Institute of 6 Technology in 1989. Prior to joining NERA, I was a senior vice president with Lexecon Inc.; 7 prior to that, I was a founding member and director of Cambridge Economics, Inc.; prior to that, 8 I was an assistant professor at Columbia University.

9 2. My specialties within economics are applied microeconomics, the study of the 10 behavior of consumers and firms, and econometrics, the application of statistical methods to 11 economics data. I have published a number of articles in scholarly journals, which are listed on 12 my curriculum vitae, attached as Exhibit A.

13 3. I have extensive experience with the economics of intellectual property. I have 14 published papers about intellectual property issues in the Journal of Econometrics, the Berkeley 15 Journal of Technology and Law, and les Nouvelles, among others. I co-edited a book entitled 16 Economic Approaches to Intellectual Property: Policy, Litigation, and Management and co-17 authored several of its chapters, one of which was recently cited by the Court of Appeals for the 18 Federal Circuit in its Uniloc v. Microsoft opinion. In February 2009, I served as a panelist by 19 invitation at a hearing on intellectual property issues held by the Federal Trade Commission 20 (FTC). In March 2011, the FTC issued a report, entitled *The Evolving IP Marketplace: Aligning* 21 Patent Notice and Remedies with Competition (March 2011), which cites my comments and 22 publications extensively.

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4. I have served as referee for numerous economic journals, and am currently an 24 associate editor of the American Bar Association publication Antitrust Law Journal. I have 25 given invited lectures at the FTC, the United States Department of Justice, the Fair Trade 26 Commission of Japan, and the Ministry of Commerce and Supreme People's Court of the 27 People's Republic of China. In 2007, I served as a consultant to and testified before the Antitrust

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Modernization Commission, which was tasked by Congress and the President with making
 recommendations for revising the antitrust laws of the United States.

- 5. I have served as an expert witness in a number of cases and have provided live
 testimony at trial in nine cases. A complete list of cases in which I have testified (in deposition
 or at trial) is provided in my curriculum vitae. NERA charges at an hourly billing rate of \$625
 for my work on this matter.
- 7 **III. ASSIGNMENT**
- 8 6. I have been asked by counsel for Google, Inc. ("Google") to review and comment 9 upon the methodologies employed in the Expert Report of Dr. Iain Cockburn ("Cockburn 10 Report") for the patents-in-suit and copyrights-in-suit. I understand that Rule 702 of the Federal 11 Rules of Evidence state that 12 If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as 13 an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon 14 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 15 the facts of the case. 16 7. I have been asked to comment on the extent to which Dr. Cockburn's report meets 17 the requirements of Rule 702, particularly the requirements that the report be based on sufficient 18 facts and the report apply the principles and methods of economics reliably to the facts of the 19 case. In addition to the Cockburn Report, I have reviewed the material cited by Dr. Cockburn, 20 the material cited in my declaration, and the exhibits to the Declaration of Scott T. Weingaertner 21 in Support of Google Inc.'s Daubert Motion, and I rely on my education and experience, in 22 coming to these conclusions. 23 DR. COCKBURN BASES HIS DAMAGES ANALYSIS ON THE III. 24 VALUE OF THE ENTIRE JAVA PLATFORM, NOT THE PATENTS-25 **IN-SUIT AND COPYRIGHTS-IN-SUIT** 26 8. Dr. Cockburn bases his analysis on the value of the entire Java platform even 27 though his role is to estimate the damages related to the infringement of only the seven patents 28 and the limited set of copyrights that have been asserted by Oracle America, Inc. ("Oracle") in

DECLARATION OF GREGORY K. LEONARD, PH.D. CIVIL ACTION NO. CV 10-03561-WHA this matter. His calculation of a reasonable royalty for all of the intellectual property associated
 with the Java platform is not relevant to determining the damages associated with the alleged
 infringement of the patents-in-suit and copyrights-in-suit.

9. Furthermore, Dr. Cockburn states that his damages analysis would not change
even if some of the patents-in-suit or copyrights-in-suit are found to be invalid or not infringed.
Such a statement is economically unjustified, absent a showing that each individual patent-in-suit
and copyright-in-suit was essential to the development of Android. However, neither Dr.
Cockburn nor Oracle makes such a showing. Dr. Cockburn only asserts without support that the
intellectual property in this case is "significant or essential" (Cockburn Report, Paragraphs 9.1,
126, 129-133).

11 10. Dr. Cockburn goes on to inappropriately compare his bundling of the entire Java
12 platform with the practices of a patent pool which generally licenses patents essential to meeting
13 standards, which is not a relevant consideration here. It is also notable that patent pools often
14 allow licensees to license individual patents rather than the entire bundle.

15 11. Dr. Cockburn's assertion that it is Oracle's practice "not to license particular
patents" (Cockburn Report, Paragraph 23) is not a reliable basis for asserting that only the entire
Java platform will be licensed. Moreover, regardless of Oracle's practices, it is inappropriate to
calculate damages on the basis of the entire Java platform when the matter at hand concerns only
the limited number of patents and copyrights that have been asserted.

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12. Dr. Cockburn ignores, misinterprets, or fails to give appropriate weight to relevant
 market transactions that indicate a much lower value for the intellectual property at issue in this
 case. Economists recognize that arm's length market transactions generally provide important

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 ¹ Statement of Baryn S. Futa, CEO and Manager, MPEG LA, LLC, Before the United States Department of Justice
 Antitrust Division and the Federal Trade Commission Joint Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, pp. 4-6.

1 indicators of value. License agreements and transactions that involve the intellectual property at 2 issue in this case are available and are among the facts upon which Dr. Cockburn should have 3 relied, e.g., the license agreement between Oracle and Sun Microsystems, Inc. ("Sun") 4 $(1/11/06)^2$ and other measures of value mentioned in Google, Inc.'s Brief in Support of Daubert 5 Motion, such as the purchase price of Sun and Sun's annual revenues. The fact that these license 6 agreements and transactions indicate very different values for the intellectual property at issue in 7 this case than the value estimated by Dr. Cockburn further indicates that his analysis is not 8 consistent with the facts.

9 13. Economists also recognize that valuations undertaken by third parties in the 10 regular course of business can provide important indicators of value. In the documents Dr. 11 Cockburn has reviewed, there are valuations of assets that include the intellectual property at 12 issue in this case. These valuations differ substantially from the value estimated by Dr. 13 Cockburn. For example, Oracle estimated the value of all of Sun's software-related Core 14 Technology, which includes but is not limited to its Java-related Core Technology, at about 15 \$68.8 million.³ As the patents-in-suit and copyrights-in-suit are just a subset of the Java-related Core Technology, the value of the intellectual property at issue must be much less than \$68.8 16 17 million. The very large disparity between this value and Dr. Cockburn's results for a small 18 subset of the overall portfolio of Sun's intellectual property indicates that his analysis is not 19 consistent with the facts in this case.



V. DR. COCKBURN ATTEMPTS TO RECOVER LOST PROFITS AS PART OF A REASONABLE ROYALTY ANALYSIS

1	Exhibit 26). He does this by including, as part of the hypothetical negotiation called for in
2	Georgia Pacific Factor 15, profits from Oracle's unrealized forecasts of sales of its mobile
3	operating system, Acadia. Purported lost sales associated with Acadia also enter into his analysis
4	of Georgia Pacific Factor 5, "The commercial relationship between the licensor and licensee,
5	such as whether they are competitors" (see Appendix C to Cockburn Report).
6	15. In addition, based on my experience in testifying on patent damages matters, lost
7	profits are explicitly awarded only after a showing that certain economic conditions are satisfied,
8	conditions described in the <i>Panduit</i> , <i>Mor-Flo</i> , and other decisions. ⁴ Dr. Cockburn does not
9	undertake the economic analysis required to show that these conditions are satisfied. Indeed, he
10	attempts to avoid having to conduct such an analysis and instead get lost profits "in the through
11	the back door" of the reasonable royalty analysis. 5
12	16. Dr. Cockburn's report is made additionally unreliable by his failure to examine
13	other possible reasons
14	then there is no basis
15	for a lost profits claim.
15 16	VI. DR. COCKBURN FAILED TO ADEQUATELY CONSIDER NON-
	VI. DR. COCKBURN FAILED TO ADEQUATELY CONSIDER NON- INFRINGING ALTERNATIVES THAT GOOGLE COULD HAVE
16	VI. DR. COCKBURN FAILED TO ADEQUATELY CONSIDER NON- INFRINGING ALTERNATIVES THAT GOOGLE COULD HAVE CONSIDERED
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16 17 18 19 20	 VI. DR. COCKBURN FAILED TO ADEQUATELY CONSIDER NON- INFRINGING ALTERNATIVES THAT GOOGLE COULD HAVE CONSIDERED 17. To economists, a crucial element in determining the appropriate reasonable royalty is the availability of non-infringing alternatives. However, Dr. Cockburn does not <u>4</u> "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition," Federal Trade
16 17 18 19 20 21	 VI. DR. COCKBURN FAILED TO ADEQUATELY CONSIDER NON- INFRINGING ALTERNATIVES THAT GOOGLE COULD HAVE CONSIDERED 17. To economists, a crucial element in determining the appropriate reasonable royalty is the availability of non-infringing alternatives. However, Dr. Cockburn does not 4 "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition," Federal Trade Commission, March 2011, p. 151.
 16 17 18 19 20 21 22 	 VI. DR. COCKBURN FAILED TO ADEQUATELY CONSIDER NON- INFRINGING ALTERNATIVES THAT GOOGLE COULD HAVE CONSIDERED 17. To economists, a crucial element in determining the appropriate reasonable royalty is the availability of non-infringing alternatives. However, Dr. Cockburn does not <u>4</u> "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition," Federal Trade
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 16 17 18 19 20 21 22 23 24 25 26 27 	 VI. DR. COCKBURN FAILED TO ADEQUATELY CONSIDER NON- INFRINGING ALTERNATIVES THAT GOOGLE COULD HAVE CONSIDERED 17. To economists, a crucial element in determining the appropriate reasonable royalty is the availability of non-infringing alternatives. However, Dr. Cockburn does not 4 "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition," Federal Trade Commission, March 2011, p. 151. 5 See "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition," Federal Trade Commission, March 2011, p. 151. 5 See "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition," Federal Trade Commission, March 2011, p. 20: First, compensatory damages for the strict liability offense of infringement are not meant to be punitive. Second, arguments that the patentee would have rejected the maximum amount the infringer would have paid are based on assumptions that the patentee could have made more by not licensing. The patentee may have been better if selling the invention or a competing product exclusively. In that case, however, the patentee should be entitled to damages based on lost profits. The law must be flexible in allowing the patentee to prove its lost profits in order to provide adequate compensation. But a patentee who has failed or chosen not to do so should not be allowed to use unproven arguments of direct losses to inflate a reasonable royalty award

consider any non-infringing alternatives to the individual patents and copyrights at issue in this
 case.

18. Even if he is correct that the hypothetical negotiation would be over the entire
Java platform, Dr. Cockburn fails to undertake a comprehensive analysis of the full range of
alternatives to utilizing the entire Java platform. He does not, for instance, undertake an analysis
of non-infringing alternatives to the use of Java such as C++, C, or other platforms.⁶ In fact, he
hardly mentions these alternatives.

8 19. Among the reasons that Dr. Cockburn claims Google needed a license to the Java 9 platform is that Android would have operated at a lower speed, although he does not indicate the 10 size of the purported reduction in speed. Dr. Cockburn does no analysis to show that a "slower" 11 non-infringing Android would have been commercially unacceptable or even been faced with 12 decreased consumer demand. An important principle of economics is that consumers will make 13 trade-offs in deciding what products to buy or services to use. There is evidence that users of the 14 Android platform make such trade-offs. For example, the Android platform has historically had 15 fewer applications or "apps" than the iPhone available to consumers, yet consumers still have chosen to buy Android phones in large numbers.⁷ Ultimately, many characteristics drive 16 demand for Android phones.⁸ Dr. Cockburn has not shown how much just one of these 17 18 characteristics, speed, would have been sacrificed or how such a sacrifice in speed would have 19 affected end-user demand. Economists have available a set of tools that can measure the 20 importance of these trade-offs and the size of the impact of an alleged change in speed.

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DECLARATION OF GREGORY K. LEONARD, PH.D. CIVIL ACTION NO. CV 10-03561-WHA

 ⁶ Andrew E. Rubin testified that Google had considered other programming languages for Android, including C, C++, Microsoft C Sharp, Lua, and Python ("Deposition of Andrew E. Rubin," April 5, 2011, pp. 22-23) and had platform technology partnership discussions with companies such as

^{(&}quot;Deposition of Andrew E. Rubin," April 5, 2011, pp. 107-108).

 ²⁴ Z The number and ability to run such applications have become increasingly important to consumers. See, for example, "Smart Phone Wars: Is It the Device or The Apps that Matter Most?" *The Globe and Mail*, October 19, 2009: "For smart phone makers – and, indeed, for an increasing number of electronics makers designing everything from radios to televisions – the emphasis is quickly shifting away from hardware design and toward the type and

²⁶ variety of applications that users can download and run."

 ²⁷ B For example, in 2009, JD Power and Associates surveyed consumers based on a number of factors, including: (1) operation; (2) physical design; (3) features; and (4) battery function of various smart phones. ("As Customer Satisfaction with Feature-Rich Smartphones Continues to Increase, Satisfaction with Traditional Mobile Phones Declines." *ID Power and Associates Press Release*. October 9, 2009, available at

²⁸ Declines," *JD Power and Associates Press Release*, October 9, 2009, available at http://businesscenter.jdpower.com/news/pressrelease.aspx?ID=2009224.)

1	20. Another relevant alternative scenario that is not considered by Dr. Cockburn	
2	would be for Google to license a Java-compatible Android. In that case, Dr. Cockburn's	
3	damages would be significantly reduced	
4	Dr. Cockburn's heavy reliance	
5	on his assumption that the hypothetical negotiation would have been for a license that allowed an	
6	allegedly Java-incompatible Android further renders his conclusions unreliable.	
7	21. There is other relevant evidence that Dr. Cockburn ignores in his claim that	
8	Google "needed" to base Android on Java. As Steve Jobs said in 2007, "Java's not worth	
9	building in. Nobody uses Java anymore. It's this big heavyweight ball and chain." ⁹ Apple's	
10	iOS does not support Java, and Apple has been immensely successful without Java. There is no	
11	reason that Google could not have taken a similar path. Dr. Cockburn's entire analysis is	
12	contrary to this basic market fact.	
13	VII. DR. COCKBURN FAILED TO CONSIDER THAT A LARGE	
14	PROPORTION OF ANDROID HANDSETS ARE SOLD AND USED OUTSIDE OF THE UNITED STATES	
15	OUTSIDE OF THE UNITED STATES	
16	22. Documents that Dr. Cockburn reviewed indicate that a large proportion of	
17	Android handsets are sold and used outside the United States. 10 I understand that the patents-in-	
18	suit and copyrights-in-suit only apply within the United States, so that Google would have been	
19	able to supply Android for handsets outside the United States without infringing.	
20	23. Dr. Cockburn undertook no analysis of the implications of this for his damages	
21	analysis and, instead, appears to have assumed that the intellectual property at issue extends	
22	beyond the United States.	
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27	⁹ "Ultimate iPhone FAQs List, Part 2," David Pogue's Blog on the <i>New York Times</i> , January 13, 2007, available at http://pogue.blogs nytimes.com/2007/01/13/ultimate-iphone-faqs-list-part-2/.	
28	$\frac{10}{10}$ For example, as of May 2010, percent of Android users were outside of the United States. ("AdMob Mobile Metrics," May 2010, GOOGLE-00305222 at 43).	
	7 DECLARATION OF GREGORY K. LEONARD, PH.D.	
	CIVIL ACTION NO. CV 10-03561-WHA	

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VIII. DR. COCKBURN IMPROPERLY APPLIED THE MOR-FLO METHODOLOGY

24. Dr. Cockburn improperly applied a "Mor-Flo" methodology to determine smart phone market shares in a "but for" world without Android. Even if all of Android's worldwide sales were found to infringe the patents at issue, Dr. Cockburn failed to recognize important differences in market shares across geographies that invalidate the use of the Mor-Flo methodology. These market share differences are driven by, among other things, different tastes of consumers for the products offered by different vendors in various markets.<u>11</u>

9 25. Dr. Cockburn improperly assumes that, in the but-for world without Android,

10 sales of Android phones would have been allocated based on *worldwide* market shares. In

11 particular, he assumes a large portion of the sales of Android phones would have gone to Nokia's

- 12 Symbian-based phones. For example, Dr. Cockburn's estimates imply that 34.6 percent of
- 13 Android sales in 2011 would have gone to Symbian-based phones. 12
- 1426. Dr. Cockburn's calculations ignore the substantial variation across regions in the15market shares of smart phone manufacturers. For example, Symbian's sales and market shares16are substantially higher outside of the US than in the US.13 In March 2011, Symbian's market17share was reported to range from 11.4 to 46.9 percent in four European countries.14 At the same18time, Symbian's market share was reported to be *less than 2 percent* in the US market.15 Dr.
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 $25 || \frac{13}{13}$ See, for example, GOOGLE-00305222 at 229.

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²³ $\begin{vmatrix} 12 \\ \text{See Exhibit 16 and 23 of Cockburn Report. Dr. Cockburn allocates the Android installed base for each year to non-Android platforms based on sales for the same year. For 2011, the percentage of Symbian sales is calculated from Exhibit 16 as sales of Symbian-based phones divided by all non-Android phones (94,621,500) <math>\div$ (94,621,500 + 24 (67,202,900 + 24,835,600 + 71,047,100 + 15,856,300) = 34.6 percent.

^{26 14 &}quot;Nokia and RIM Bleeding Smartphone Share While Android Cleans Up," *guardian.co.uk*, April 18, 2011, available at http://www.guardian.co.uk/technology/2011/apr/18/smartphone-market-android-win-nokia-rim-lose/print.

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1	Cockburn's methodology improperly allocates too large of a share to Symbian phones in the US.	
2	Because the majority of Google's Android phones are sold in the US, $\frac{16}{16}$ this methodology	
3	necessarily leads to the incorrect calculation of the incremental profit associated with Android,	
4	even leaving unchanged the rest of Dr. Cockburn's assumptions.	
5	27. By over-allocating Android sales to Symbian, Dr. Cockburn substantially	
6	overstates the incremental profit that Google earns from Android phones. This is because, by Dr.	
7	Cockburn's own estimates, Google earns far less per device on Symbian phones than it does on	
8	Android and Apple iOS phones.	
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13	Allocating a large share to Nokia's Symbian-	
14	phones thus improperly results in large losses to Google when, in fact, using US market shares	
15	would substantially reduce the incremental losses to Google. <u>19</u>	
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21	16 For example, as of May 2010 percent of Android users in the United States. ("AdMob Mobile Metrics," May	
22	2010, GOOGLE-00305222 at 243.)	
23	17 Cockburn Exhibit 22, "Net revenue per device (after TAC)." 18 See Android's net revenue per device, see "Net Revenue per Device (after TACs)" for 2011 for Exhibit 19 to the	
24	Cockburn Report. For Apple iOS's net revenue per device, see Cockburn Exhibit 22, "Net revenue per device (after TAC)."	
25	$\frac{19}{19}$ Note also that, Dr. Cockburn's analysis is unlikely to "average out" such that Google would earn a higher	
26	incremental profit outside of the US that would cancel out the lower incremental profit in the US. The majority of Android sales occur in the US where Nokia's sales are low and the largest portion of Nokia's sales occur in Asian	
27	countries (see Nokia 20-F, for period ending December 31, 2010, filed on March 11, 2011, p. 104) where Android's sales are low (see "AdMob Mobile Metrics," May 2010, GOOGLE-00305222 at 243.)	
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	9	
	DECLARATION OF GREGORY K. LEONARD, PH.D. CIVIL ACTION NO. CV 10-03561-WHA	

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IX. DR. COCKBURN INCLUDES FUTURE DAMAGES IN HIS "PAST" DAMAGES CALCULATION, THEREBY LEADING TO DOUBLE RECOVERY

28. Dr. Cockburn concludes that the hypothetical negotiation would have resulted in a
combined lump sum/running royalty structure. He includes the entire lump sum payment as
"past" damages, even though a portion of this lump sum corresponds to future sales. Thus, Dr.
Cockburn improperly shifts what are actually future damages into his "past" damages
calculation.

29. Since Oracle has stated that it will seek an injunction if it prevails on liability, Dr.
Cockburn's lump-sum damages award based upon future damages will result in double recovery
for Oracle. It will receive an award for damages based upon future sales at a time that Google
will be forced out of the market by an injunction.

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X.

DR. COCKBURN DOES NOT PERFORM ANY ANALYSIS OF THE COPYRIGHT INFRINGEMENT DAMAGES

30. Dr. Cockburn does not separate out damages due to copyright infringement from 15 damages due to patent infringement. I understand that, in a copyright matter, it is the copyright 16 owner's responsibility to identify its lost profits and the alleged infringer's gross revenue due to 17 infringement. It is the alleged infringer's responsibility to deduct appropriate expenses and 18 profits attributable to factors other than copyrighted material. Dr. Cockburn provides inadequate 19 basis for reviewing unjust enrichment or lost profits claims due to copyright infringement. Dr. 20 Cockburn's placement of copyright infringement into the same hypothetical negotiation as all of 21 the patents-in-suit in this case makes this an inappropriately difficult egg to unscramble. 22

Executed on June 14, 2011 in San Francisco, California.

My K2l

Gregory K. Leonard

10 DECLARATION OF GREGORY K. LEONARD, PH.D. CIVIL ACTION NO. CV 10-03561-WHA

Exhibit A

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Gregory K. Leonard SENIOR VICE PRESIDENT

Dr. Leonard is a Senior Vice President in NERA's Antitrust and Intellectual Property Practices. His areas of expertise are applied microeconomics and econometrics. He has extensive experience analyzing competition and estimating damages in a wide variety of contexts. Dr. Leonard has provided written and oral testimony and presentations before federal and state courts, government agencies, and arbitration panels on issues involving antitrust, damages estimation, statistics and econometrics, surveys, valuation, and labor market discrimination.

Prior to joining NERA, Dr. Leonard was a Senior Vice President at Lexecon Inc., a founding member and Director of Cambridge Economics, Inc., and an Assistant Professor at Columbia University, where he taught statistics, econometrics, and labor economics.

Dr. Leonard has experience in a broad range of industries, including pharmaceuticals, telecommunications, airlines, semiconductors, hedge funds, securities, commercial and recreational fishing, medical devices, professional sports, credit card networks, payment systems, information services, computer software, computer hardware, chemicals, plastics, flat glass, retailing, advertising, beef processing, fertilizers, printing, petroleum, steel, beer, cereals, cosmetics, athletic apparel, film, milk, canned fish, vitamins, animal feed supplements, tissue, paperboard, industrial gas, concrete, automobiles, contact lens cleaners, sports beverages, soft drinks, diapers, tobacco products, graphite and carbon products, and modems, among others.

Dr. Leonard has published widely on the issues of antitrust, industrial organization, labor economics, and econometrics. His publications have appeared in the RAND Journal of Economics, the Journal of Industrial Economics, the Journal of Econometrics, the International Journal of Industrial Organization, the Journal of Public Economics, Annales Economie et de Statistique, the Journal of Labor Economics, the International Journal of the Economics of Business, Antitrust Law Journal, Antitrust, Antitrust Source, the Journal of Economic Analysis & Policy, Journal of Competition Law and Economics, the Journal of Economic Surveys, 法学家 (Jurists' Review), Antitrust Chronicle, the Berkeley Technology Law Journal, the European Competition Law Review, les Nouvelles, Landslide, Managing Intellectual Property, Legal Issues of Economic Integration, and the George Mason Law Review. Dr. Leonard co-authored two chapters in the American Bar Association Section of Antitrust Law (ABA) volume Issues in Competition Law and Policy, co-authored the "Econometrics and Regression Analysis" chapter of the ABA volume Proving Antitrust Damages, and was a contributor to the ABA volume Econometrics. He co-edited Economic Approaches to Intellectual Property: Policy, Litigation, and Management and authored or co-authored three of its chapters. One of these chapters (coauthored with Lauren J. Stiroh) was cited by the Court of Appeals for the Federal Circuit in its Uniloc decision. Dr. Leonard is an Associate Editor of the Antitrust Law Journal and a co-editor

of the ABA Section of Antitrust Law Economics Committee newsletter, and has served as a referee for numerous economics journals.

Dr. Leonard was invited to speak on merger simulation at the 2004 US Department of Justice and Federal Trade Commission (FTC) Merger Workshop, the econometrics of evaluating competition in local retail markets at the 2008 FTC Retail Mergers Workshop, and the calculation of patent damages at the 2009 Hearings on the Evolving IP Marketplace. The 2011 FTC report resulting from the latter hearings cited Dr. Leonard extensively. In 2005, Dr. Leonard served as a consultant on the issue of immunities and exemptions to the Antitrust Modernization Commission (AMC), which was tasked by Congress and the President with developing recommendations for changes to the US antitrust laws. He testified before the AMC in December 2005.

Dr. Leonard has extensive experience with international antitrust and intellectual property issues, particularly in Asia. He has given invited presentations at the Anti-Monopoly Bureau of China's Ministry of Commerce (MOFCOM), the Supreme People's Court of China, Renmin University, the Chinese Academy of Social Sciences, and the University of Political Science and Law. He was a member of ABA and US Chamber of Commerce delegations to joint workshops with the Chinese antitrust agencies, MOFCOM, NDRC, and SAIC, and served on the working groups of the ABA's Sections of Antitrust Law and International Law that prepared comments on MOFCOM's and SAIC's draft regulations. Dr. Leonard has also given presentations to the Japan Fair Trade Commission and the India Competition Commission.

Dr. Leonard received an ScB in Applied Mathematics-Economics from Brown University and a PhD in Economics from the Massachusetts Institute of Technology, where he was a National Science Foundation Graduate Fellow and an Alfred P. Sloan Foundation Fellow.

Education

Massachusetts Institute of Technology

PhD, Economics, 1989 Alfred P. Sloan Foundation Fellowship, 1988-1989 National Science Foundation Graduate Fellowship, 1985-1988

Brown University

ScB, Applied Mathematics-Economics, 1985 Rohn Truell Memorial Premium in Applied Mathematics, 1985

Professional Experience

NERA Economic Consulting

- 2008- Senior Vice President
- 2004-2008 Vice President
- 1990-1991 Senior Analyst

2000-2004	Lexecon Inc. Senior Vice President
1991-2000	Cambridge Economics, Inc. Director
1989-1990	Columbia University Assistant Professor Teaching Areas: Econometrics, Statistics, Labor Economics

Papers and Publications

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Discussant, "New Developments in Antitrust" session, AEA meetings, January 7, 2000.

"In Defense of Merger Simulation," Department of Justice and Federal Trade Commission Merger Workshop, Unilateral Effects Session, February 18, 2004.

Discussant, "Proving Damages in Difficult Cases: Mock Trial & Discussion," NERA Antitrust & Trade Regulation Seminar, July 10, 2004.

"Network Effects, First Mover Advantage, and Merger Simulation in Damages Estimation," LSI Workshop on Calculating and Proving Patent Damages, July 16, 2004.

"Early Exchange of Documents," LSI Workshop on Pre- and Early Stage Patent Litigation, July 23, 2004.

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"Early Exchange of Documents," LSI Workshop on Pre- & Early-Stage Patent Litigation, July 22, 2005.

"Issues to Consider in a Lost Profits Damages Analysis," Patent Litigation 2005, Practicing Law Institute, September 30, 2005.

"Antitrust Issues in Standard Setting and Patent Pools," Advanced Software Law and Practice Conference, November 3, 2005.

"New Technologies for Calculating Lost Profits," LSI Workshop on Calculating & Proving Patent Damages, February 27, 2006.

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"Comparison of the Almost Ideal Demand System and Random Coefficient Models for Use With Retail Scanner Data," Pacific Rim Conference, Western Economic Association, Beijing, People's Republic of China, January 12, 2007 (with F. Deng).

Discussant, "Applied Economics" Session, Pacific Rim Conference, Western Economic Association, Beijing, People's Republic of China, January 12, 2007.

"Balancing IPR Protection and Economic Growth in China," International Conference on Globalization and the Protection of Intellectual Property Rights, Chinese University of Political Science and Law, Beijing, People's Republic of China, January 20, 2007. "The Use and Abuse of Daubert Motions on Damages Experts: Lessons from Recent Cases," LSI Workshop on Calculating & Proving Patent Damages, February 27, 2007.

"Will Your Licenses Ever be the Same? Biotechnology IP Strategies," BayBio 2007 Conference, April 26, 2007.

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"Issues to Consider in a Lost Profits Damages Analysis," Patent Litigation 2007, Practicing Law Institute, September 25, 2007.

Discussant, "Dominance and Abuse of Monopoly Power" Session, China's Competition Policy and Anti-Monopoly Law, J. Mirrlees Institute of Economic Policy Research, Beijing University, and the Research Center for Regulation and Competition, Chinese Academy of Social Sciences, Beijing, People's Republic of China, October 14, 2007.

"Opening Remarks," Seminar on China's Anti-monopoly Law and Regulation on Abuse of Intellectual Property Rights, Beijing, People's Republic of China, April 26, 2008.

"Issues to Consider in a Reasonable Royalty Damages Analysis," Patent Litigation 2008, Practicing Law Institute, October 7, 2008.

"Econometric Evaluation of Competition in Local Retail Markets," Federal Trade Commission and National Association of Attorneys General Retail Mergers Workshop, December 2, 2008

"Merger Review Best Practices: Competitive Effects Analysis," International Seminar on Anti-Monopoly Law: Procedure and Substantive Assessment in Merger Control, Beijing, People's Republic of China, December 15-17, 2008.

"The Use of Natural Experiments in Antitrust," Renmin University, Beijing, People's Republic of China, December 18, 2008.

"China's Antimonopoly Law: An Economist's Perspective," Bloomberg Anti-Monopoly Law of China Seminar, January 29, 2009.

Panelist, "Standards for Assessing Patent Damages and Their Implementation by Courts," FTC Hearings on the Evolving IP Marketplace, February 11, 2009.

"Economic Analysis of Agreements Between Competitors" and "Case Study: FTC Investigates Staples' Proposed Acquisition of Office Depot," Presentation to Delegation of Antitrust Officials from the People's Republic of China, Washington, DC, March 23, 2009.

"Reasonable Royalties in the Presence of Standards and Patent Pools," LSI Workshop, April 20, 2009.

Presentations on Unilateral Effects, Buyer Power, and the Intellectual Property-Antitrust Interface to Delegation from the Anti-Monopoly Bureau of MOFCOM of the People's Republic of China, Washington, DC, May 10-11, 2009.

Panelist, "The Use of Economic and Statistical Models in Civil and Criminal Litigation," Federal Bar Association, San Francisco, May 13, 2009.

"Trends in IP Rights Litigation and Economic Damages in China," Pursuing IP in the Pacific Rim, May 14, 2009.

Presentation on the Economics of Antitrust, National Judicial College of the People's Republic of China, Xi'an, People's Republic of China, May 25-26, 2009.

"Case Study: The Use of Economic Analysis in Merger Review," Presentation to the Anti-Monopoly Bureau of MOFCOM, Beijing, People's Republic of China, May 27, 2009.

"Economics and Antitrust Law," China University of Political Science and Law, Beijing, People's Republic of China, September 21, 2009.

"Case Study: Economic Analysis of Coordinated Interaction," Presentation to the Anti-Monopoly Bureau of MOFCOM, Beijing, People's Republic of China, September 22, 2009.

"Relevant Market Definition," 4th Duxes Antitrust Law Seminar, Beijing, People's Republic of China, September 26, 2009.

"Expert Economic Testimony in Antitrust Litigation," Supreme People's Court, Beijing, People's Republic of China, February 2, 2010.

"New Case Law for Patent Damages," Law Seminars International Telebriefing, April 28, 2010.

"China/India: Sailing in Unchartered Waters: Regulating Competition in the Emerging Economies – New Laws, New Enforcement Regimes and No Precedents," The Chicago Forum on International Antitrust Issues, Northwestern University School of Law Searle Center, May 20, 2010.

"Antitrust and Intellectual Property," Supreme People's Court, Beijing, People's Republic of China, May 26, 2010.

"Cartel Enforcement Trends in the United States," 2nd Ethical Beacon Anti-Monopoly Summit, Beijing, People's Republic of China, May 27, 2010.

Panelist, "The Future of Books and Digital Publishing: the Google Book Settlement and Beyond," 2010 American Bar Association Annual Meeting, August 7, 2010.

"Coordinated Effects" and "Non-Horizontal Mergers," Presentations to Delegation from India Competition Commission, US Chamber of Commerce, Washington, DC, October 26, 2010.

"UPP and Merger Simulation," Annual Conference of the Association of Competition Economics, Norwich, UK, November 11, 2010.

"Uniloc v. Microsoft: A Key Ruling For Patent Damages," Law Seminars International Telebriefing, January 21, 2011.

"Correlation, Regression, and Common Proof of Impact," New York City Bar Association, January 19, 2011.

"Private Litigation Under China's New Antimonopoly Law," Bar Association of San Francisco, February 17, 2011.

"Competition Law and State Regulation: Setting the Stage and Focus on State-Owned Enterprises," Competition Law and the State: International and Comparative Perspectives, Hong Kong, People's Republic of China, March 18, 2011.

Professional Activities

Member, American Economic Association

Member, Econometric Society

Member, American Bar Association

Contributor, www.antitrust.org

Contributor, ABA Section of Antitrust Law, Econometrics, 2005

Associate Editor, Antitrust, 2007-2010

Associate Editor, Antitrust Law Journal, 2010-

Co-Editor, ABA Section of Antitrust Law Economics Committee Newsletter, 2009-

- Member, ABA Delegation to International Seminar on Anti-Monopoly Law: Procedure and Substantive Assessment in Merger Control, Beijing, People's Republic of China, December 15-17, 2008
- Member, Working Group for drafting the "Joint Comments of the American Bar Association Section of Antitrust Law and Section of International Law on the MOFCOM Draft Guidelines for Definition of Relevant Markets," 2009
- Member, Working Group for drafting the "Joint Comments of the American Bar Association Section of Antitrust Law and Section of International Law on

the SAIC Draft Regulations on the Prohibition of Acts of Monopoly Agreements and of Abuse of Dominant Market Position," 2009.

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- Referee: Econometrica, Review of Economics and Statistics, International Journal of Industrial Organization, Review of Industrial Organization, Journal of Sports Economics, Journal of Environmental Economics and Management, Research in Law and Economics, Labour Economics, Eastern Economic Journal, Journal of Forensic Economics, Antitrust, Antitrust Law Journal, Journal of Competition Law and Economics

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In the Matter of CERTAIN WIRELESS COMMUNICATION DEVICES, PORTABLE MUSIC AND DATA PROCESSING DEVICES, COMPUTERS AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-745, 2011 (Report).

Selected Merger Experience

R.R. Donnelley/Meredith Burda (1990-1993): Merger of printing companies. Reviewed by the FTC. Preliminary Injunction Hearing. Part III Hearing.

Kimberly-Clark/Scott (1995): Merger of manufacturers of tissue products. Reviewed by the DOJ and the European Commission.

Staples/Office Depot (1996-1997): Proposed merger of office supply retailers. Reviewed by the FTC. Preliminary injunction hearing.

IMC/Western Ag (1997): Merger of mining companies. Reviewed by the DOJ.

Dow/Union Carbide (1999-2001): Merger of chemical manufacturers. Reviewed by the FTC.

Volvo/Scania (2000): Merger of truck manufacturers. Reviewed by the European Commission.

First Data/Concord (2003-2004): Merger of companies involved in merchant acquiring and payment networks. Reviewed by the DOJ.

Bumble Bee/Connors (2004): Merger of canned seafood manufacturers. Reviewed by the DOJ.

Sonaecom/Portugal Telecom (2006): Merger of telecommunications companies. Reviewed by the Portuguese Competition Authority.

Graphic Packaging/Altivity (2007-2008): Merger of paperboard manufacturers. Reviewed by the DOJ.

Inbev/Anheuser-Busch (2008): Merger of beer manufacturers. Reviewed by the DOJ, the UK Competition Commission, and China's MOFCOM.

Serta/Simmons (2009): Merger of mattress manufacturers. Reviewed by the FTC.

Coty/OPI (2010): Merger of nail polish manufacturers. Reviewed by the DOJ.

Other Supporting Documents

<u>3:10-cv-03561-WHA Oracle America, Inc. v. Google Inc.</u> ADRMOP, AO279, E-Filing, PRVADR, REFDIS

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Case Name:Oracle America, Inc. v. Google Inc.Case Number:3:10-cv-03561-WHAFiler:Google Inc.Document Number:173

Docket Text: Declaration of Gregory K. Leonard in Support of [171] MOTION To Exclude Expert Opinions and Testimony (Daubert) filed byGoogle Inc.. (Related document(s)[171]) (Sabnis, Cheryl) (Filed on 6/14/2011)

3:10-cv-03561-WHA Notice has been electronically mailed to:

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The following document(s) are associated with this transaction:

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