

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION**

I/P ENGINE, INC.,	§	
Plaintiff,	§	
v.	§	CIVIL ACTION NO.
AOL, INC.,	§	2:11-cv-00512-RAJ-FBS
GOOGLE INC.,	§	
IAC SEARCH & MEDIA, INC., and	§	
TARGET CORPORATION,	§	
Defendants.	§	

EXPERT REPORT OF STEPHEN L. BECKER, Ph.D.



STEPHEN L. BECKER, Ph.D.



DATE

INDEX TO EXHIBITS

EXHIBIT SLB-1	Reasonable Royalty Summary
EXHIBIT SLB-2	Reasonable Royalty Detail
EXHIBIT SLB-2A	Accused Revenue, Royalty Base and Reasonable Royalty Detail – AOL, Gannett, IAC and Target
EXHIBIT SLB-2B	AOL Proprietary Accused Revenue, Royalty Base and Reasonable Royalty Detail
EXHIBIT SLB-3	Google Inc. Accused Product U.S. Revenue Summary
EXHIBIT SLB-4	Google Inc. Accused Product Worldwide Revenue Summary
EXHIBIT SLB-5	Google Inc. AdWords Worldwide Revenue and Product Contribution Statements
EXHIBIT SLB-6	Google Inc. U.S. AdWords Revenue
EXHIBIT SLB-7	Google Inc. AdSense for Search Worldwide Revenue and Product Contribution Statements
EXHIBIT SLB-8	Google Inc. U.S. AdSense for Search Revenue
EXHIBIT SLB-9	Google Inc. AdSense for Mobile Search Worldwide Revenue and Product Contribution Statements
EXHIBIT SLB-10	Google Inc. U.S. AdSense for Mobile Search Revenue
EXHIBIT SLB-11	Google Inc. Operating Income
EXHIBIT SLB-12	Google Inc. U.S. Revenue
EXHIBIT SLB-13	Summary of Licenses and Agreements – I/P Engine
EXHIBIT SLB-14	Summary of Licenses and Agreements – Google Inc.
EXHIBIT SLB-15	Summary of Licenses and Agreements – Third Party
EXHIBIT SLB-16	Summary of Comparable Factor 12 License Agreements
EXHIBIT SLB-17	Royalty Base Apportionment Factors
EXHIBIT SLB-18	Royalty Base Apportionment Factor Calculation

I. NATURE OF INVOLVEMENT

1. I have been retained as an expert on behalf of I/P Engine, Inc. (“I/P Engine” or “Plaintiff”). I understand that I/P Engine alleges that AOL, Inc. (“AOL”), Google Inc. (“Google”), IAC Search & Media, Inc. (“IAC”), Gannett Company, Inc. (“Gannett”), and Target Corporation (“Target”) (referred to collectively as “the Defendants”) infringe U.S. Patent Nos. 6,314,420, entitled “Collaborative/Adaptive Search Engine” (“the ‘420 patent”) and 6,775,664, entitled “Information Filter System and Method for Integrated Content-Based and Collaborative/Adaptive Feedback Queries” (“the ‘664 patent”). I have been asked to offer expert opinions regarding financial and economic damages issues pertaining to this matter.
2. I am informed that the patented technology relates to the combination of content-based data and collaborative feedback data. I am informed that Google combines this data in its computation of a predicted click-through rate (pCTR) and/or “Quality Score.” The combined data is used by filters in the selection of advertisements to be shown in response to search queries submitted to Google.
3. For the purposes of this report and consistent with my understanding of applicable legal principles, I have assumed that the patents-in-suit are valid, enforceable and infringed by the Defendants as claimed by I/P Engine.

II. CREDENTIALS AND COMPENSATION

4. I am a founder and Director of Applied Economics Consulting Group, Inc. (“Applied Economics”) in Austin, Texas. Applied Economics conducts economic and financial analysis for a wide variety of clients across a number of industries. Prior to forming Applied Economics (and its predecessors), I was with the international management consulting firm Booz-Allen & Hamilton, where I was a member of the Strategy Practice. I have an undergraduate degree in Computer Science and Engineering from the Moore School of Electrical Engineering at the University of Pennsylvania, a Master of Business Administration degree with a concentration in Finance from the University of Texas at Austin, and a doctorate in Public Policy from the LBJ School of Public Affairs at the University of Texas at Austin. A copy of my professional resume is attached to this report as Appendix A.

5. I have significant experience with corporate financial analysis and the assessment of economic damages. I have been engaged to assist in the analysis of damages claims in intellectual property matters, to review and prepare evaluations of economic damage claims, to present written reports and provide deposition and trial testimony regarding these matters. I have relevant experience in and an understanding of the economic issues present in this matter and both my academic and professional experiences qualify me to present this report. Attached, as Appendix B, is a listing of cases in which I have testified in the last ten years. Applied Economics is being compensated at the rate of \$495 per hour for my work on this matter. My firm's fee is not contingent upon the outcome of this litigation or upon my reaching any particular conclusions or opinions.

III. INFORMATION REVIEWED

6. My opinions in this case are based upon my judgment and expertise in financial and damages analysis, review of the documents and other information produced thus far by the parties in this case, legal pleadings generated as part of this case, discussions I and my staff have had with I/P Engine's technical expert, Dr. Ophir Frieder. I have also reviewed deposition testimony, deposition exhibits, Plaintiff's and Defendants' websites, and other publicly available information.
7. A list of the information that I have reviewed and considered through the date of this report is attached as Appendix C. I may review additional information as it becomes available and reserve the right to supplement or amend this report based on this information as necessary.

IV. SUMMARY OF OPINIONS

8. In the event that the Defendants are found to have infringed the '420 and '664 patents, and the patents are found to be valid and enforceable, I/P Engine is entitled to "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..."¹
9. I have calculated the reasonable royalty damages to which I/P Engine is entitled should there be a finding of infringement of the patents-in-suit. In reaching my opinions, I have considered the

¹ 35 USC Sec. 284.

Defendants' allegedly infringing use of the patented technology and the economic benefits they receive from that use. I have also considered the factors or criteria set forth in *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970), as they relate to the issues involved in this case. The *Georgia-Pacific* factors are widely recognized and acknowledged by the federal courts and damages experts as an appropriate methodology to assist in the determination of reasonable royalty damages in patent infringement cases.

10. For the purposes of this report I assume that the patents-in-suit are valid, enforceable and infringed by the Defendants' accused products. I also assume that both I/P Engine² and the Defendants would have been aware of all relevant information regarding the patents at the time of the infringement and the parties are assumed to know and understand the relevant facts in the industry that would affect the hypothetical negotiation. In considering the hypothetical negotiations to determine a reasonable royalty, facts that occurred subsequent to the date of the hypothetical negotiation ought to be given proper weight as determined by the circumstances of each case.³
11. A summary of my opinions in this matter are as follows:
 - a. The accused systems are Google's AdWords, AdSense for Search, AdSense for Mobile Search systems, and AOL's Search Marketplace system. AOL, IAC, Gannett and Target use the accused Google AdSense for Search system pursuant to contractual agreements between the parties. AOL's Search Marketplace system is a "white label" version of Google AdWords that is maintained and managed by Google and uses the same technology as Google's AdWords.⁴
 - b. The hypothetical negotiation to determine a reasonable royalty would be conducted between Lycos, Inc. ("Lycos") and Google during the first quarter of 2004. The license that would result from this negotiation would be a non-exclusive license to practice the patents-in-suit in the United States. The license would cover not only Google, but Google customers, such as AOL, IAC, Gannett and Target, for whom Google served search-based ads through the accused Google systems.
 - c. Damages begin September 15, 2005, which is six years prior to the filing of the lawsuit.

² As will be discussed later in this report, the hypothetical negotiation would have occurred in Q1 2004 between Lycos and Google because Lycos was the owner of the patents-in-suit at the time.

³ See, for example, *Lucent Techs v. Gateway*, 580 F.3d 1301, 1333-34 (Fed. Cir. 2009), *Standard Manufacturing Co., Inc., et al. v. United States*, 42 Fed.Cl. 748, January 25, 1999; *Sinclair Refining Co. v. Jenkins Petroleum Process Co.*, 289 U.S. 689, 697-698 (1933); *Fromson v. Western Litho Plate & Supply Co.*, 853 F.2d 1568 (Fed. Cir. 1988).

⁴ AOL Launches Google-Powered Search Marketplace, Search Engine Watch, 04/07/2007; G-IPE-0265514 - 526 at -524.

- d. The royalty base for the license between Lycos and Google reflects the estimated incremental impact on Google's accused revenues of the implementation of the Smart Ads system and its utilization in the accused systems in 2004.⁵ This represents a reasonable apportionment of Google's revenues to arrive at a royalty base against which the royalty rate for the license to the patents-in-suit should be applied.
- e. [REDACTED]
- f. Reasonable royalty damages that result from application of this reasonable royalty rate to the aforementioned apportioned royalty base are summarized at Exhibit SLB-1.
12. All of the damage opinions summarized above and described in detail in the remainder of this report are before interest. In the event the jury renders a verdict in favor of I/P Engine and awards damages, it is my understanding that the court may award pre-judgment interest on such damages. Should that occur I may be asked to render an opinion regarding the reasonable calculation of such pre-judgment interest.
13. The remainder of this report describes in detail the opinions summarized above and the bases for those opinions.

V. BACKGROUND

A. Internet Search Advertising Industry

14. As use of the Internet has exploded over the past twenty years, the importance of search engines has increased to satisfy an ever-expanding number of users' needs to find the content they want in an ever-expanding population of websites.
15. Search engines have evolved toward better algorithms that can more accurately match a user's query with the content of a web page (or with an advertiser's listing.)⁶
16. Monetization of search engine results pages, first began in the mid-1990s as simple paid listings.⁷ By 2000, a more transparent, auction-based, pay-per-click model had become the standard,

⁵ Google refers to this system internally as "SmartASS," but for the purposes of this report, I will refer to it as "Smart Ads" or the "Smart Ad Serving System".

⁶ Battelle, John. The Search. The Penguin Group, New York, NY. 2005, pp.39-40.

driven by systems from Overture Services and Google's AdWords.⁸ Paid search is now the biggest revenue driver for most search engines.⁹

17. Early search advertising systems struggled, because opportunistic advertisers learned they could take advantage of the simplistic keyword matching technology search engines used at the time, and simply pepper their website with popular keywords (i.e., "Backstreet Boys") and get their ads—however irrelevant—displayed to a huge audience of search engine users, a tactic sometimes called "ad spam".¹⁰
18. The company GoTo.com ("GoTo") introduced two elements to paid search advertising that largely solved the advertising spam problem.¹¹ First, it created an auction-based system allowing advertisers to determine the maximum price they would pay to be displayed in response to the keywords they selected. Second, GoTo created the Cost-Per-Click ("CPC") model, whereby an advertiser only paid when a user actually clicked on one of their ads.¹² Before GoTo's CPC model, online advertising, including both banner or display ads and text-based search ads, was sold on a Cost-Per-Thousand-Impressions (Cost-Per-Mille or "CPM") model, whereby advertisers paid a set price per every thousand users who viewed an ad.¹³
19. Search engines compete for users and advertisers primarily on relevance.¹⁴ Improvements in the relevance of the search results and ads a search engine provides benefit the users, the advertisers, and the search engine itself, in what is known in the industry and especially by Google as a "virtuous cycle."¹⁵ More relevant search results lead to more use by more users, who represent a larger audience to whom advertising can be displayed. More relevant ad results lead to more clicks, which generates more revenue for both the advertiser and the search engine—

⁷ See, e.g., Sponsored Search - A Brief History, Bulletin of the American Society for Information Science and Technology, Dec-Jan 2006; Sponsored search: an overview of the concept, history, and technology, Int. J. Electronic Business, Vol. 6, No. 2, pp.114–131; A Brief History of Paid Search Advertising, searchengineland.com, 1/21/2010; G-IPE-0222749-487 at 776.

⁸ See, e.g., Sponsored Search - A Brief History, Bulletin of the American Society for Information Science and Technology, Dec-Jan 2006; Sponsored search: an overview of the concept, history, and technology, Int. J. Electronic Business, Vol. 6, No. 2, pp.114–131; A Brief History of Paid Search Advertising, searchengineland.com, 1/21/2010; G-IPE-0222193 at 222-223.

⁹ See, e.g., Sponsored Search - A Brief History, Bulletin of the American Society for Information Science and Technology, Dec-Jan 2006; Sponsored search: an overview of the concept, history, and technology, Int. J. Electronic Business, Vol. 6, No. 2, pp.114–131; A Brief History of Paid Search Advertising, searchengineland.com, 1/21/2010; G-IPE-0222193 at 221-223.

¹⁰ Battelle, John. The Search. The Penguin Group, New York, NY. 2005, p.104.

¹¹ Battelle, John. The Search. The Penguin Group, New York, NY. 2005, p.104; G-IPE-0222193 at 222.

¹² Battelle, John. The Search. The Penguin Group, New York, NY. 2005, pp.104-109; G-IPE-0222193 at 222.

¹³ Preserving Competition in Multi-Sided Innovative Markets: How Do You Solve a Problem Like Google? Kristine Devine. North Carolina Journal of Law & Technology, Vol.10, Iss. 1: Fall 2008, p.71; G-IPE-0222193 at 222-223.

¹⁴ As described later in the report, my understanding of "relevance" here is how well ads match a user's query.

¹⁵ See, e.g., Click Tracking, Ads Quality, And A Virtuous Cycle At Google, searchengineland.com, 6/2/2008; G-IPE-0747411; G-IPE-0507853; G-IPE-0006684; G-IPE-0507881; G-IPE-0302085.

not to mention more satisfied users. Increasing relevance to generate more clicks by more users is considered the “holy grail” of Internet advertising.¹⁶

B. I/P Engine and Lycos

20. I/P Engine¹⁷ is a privately held, wholly-owned subsidiary of Innovate/Protect, Inc.,¹⁸ and owns the patents-in-suit.¹⁹ The co-inventors of the patents-in-suit, Andrew K. Lang and Donald Kosak, are the Chief Executive Officer and Technical Consultant for I/P Engine, respectively.²⁰
21. Mr. Lang’s professor and mentor at Carnegie Mellon, Michael Mauldin, encouraged Mr. Lang to start his own company, Empirical Media Corporation, later renamed WiseWire Corporation (“WiseWire”). WiseWire hired Donald Kosak as Director of Research and Development.²¹
22. Michael Mauldin went on to found Lycos, one of the first search engines websites, and “the first major engine to use links to a Web site as the basis of relevance.”²² In 1995, Carnegie Mellon sold the majority of its ownership of Lycos’ technology to founders Michael Mauldin and Bob Davis for \$2 million.²³ Lycos went public shortly afterward on April 2, 1996, raised \$48million upon first sale of its stock, and ended its first day of trading with a market capitalization of nearly \$300million.²⁴ The 10-month old firm was the youngest in NASDAQ history to go public.²⁵
23. Lycos fueled the proliferative growth of its Internet search business over the next several years with a string of acquisitions of firms like Tripod, GuestWorld, WhoWhere?, and HotBot.²⁶ In 1998, Lycos acquired WiseWire for \$39.75 million,²⁷ at which point Mr. Lang joined Lycos as Chief Technology Officer, and Mr. Kosak as its Senior Director of Engineering.²⁸ As part of the acquisition, Lycos also acquired a patent application (Application Number 08/627436) filed by Messrs. Lang and Kosak.²⁹ Both of the patents-in-suit relate to this application.³⁰

¹⁶ See, e.g., G-IPE-0803345; How Relevance Became the Holy Grail in Search, tech.fortune.cnn.com, 12/6/2011.

¹⁷ I/P Engine was formerly known as Smart Search Labs.

¹⁸ Innovate/Protect, Inc. was formerly known as Labrador Search Corporation. Innovate/Protect has merged with Vringo, Inc. (see, e.g. IPI-0000001-012, Agreement and Plan of Merger between Vringo, VIP Merger Sub and InnovateProtect, Inc.)

¹⁹ IPE 0013579; IPE 0021608-611.

²⁰ Complaint.

²¹ Complaint.

²² Battelle, John. *The Search*. The Penguin Group, New York, NY. 2005, p.53.

²³ Battelle, John. *The Search*. The Penguin Group, New York, NY. 2005, p.54.

²⁴ Lycos Case Study, KPMG & University of Illinois, 2003, p. 4; Lycos IPO bodes well for Net stock, CNET News, 04/03/1996.

²⁵ Lycos Case Study, KPMG & University of Illinois, 2003, p. 4.

²⁶ Lycos Inc. Form 10-KA 1998, p. 2 – 3; HotBot is heart of Lycos deal, CNET News, 10/06/1998.

²⁷ Lycos Acquires WiseWire, internetnews.com, 4/30/1998.

²⁸ Complaint, and also, e.g., LYCOS 0000246-321.

²⁹ LYCOS 0000246-321 at 285.

24. Lycos also signed a search provisioning deal with Microsoft,³¹ e-commerce deals with Barnes & Noble and CDNow,³² and engaged in a variety of other search and web portal content projects throughout the late 1990s.³³ By mid-1999 Lycos's website was visited by 51.8% of U.S. Internet users and the firm edged Yahoo in web-traffic with just over 32 million monthly visitors.³⁴ Over the same period Lycos's advertising revenues grew 20-fold from \$4.4 million in 1996 to over \$93.4 million in 1999.³⁵ Like its contemporaries,³⁶ the company operated at a loss throughout the late 1990s.³⁷
25. In May 2000, Lycos agreed to be acquired by Spanish telecom company Terra in an all-stock deal worth \$12.5 billion.³⁸ In October 2004, one of the largest Internet companies in South Korea, Daum Communications, Corp., acquired Lycos.³⁹

C. Google

26. Google is an online search engine company, incorporated in Delaware and headquartered in Mountain View, CA.⁴⁰
27. Google's primary business focus is on web search and online advertising.⁴¹ Google does not charge a fee for the use of its web search products; instead, it generates revenue primarily by delivering online advertisements. Over the 2004 to 2011 timeframe, Google derived 96% to 99% of its revenue from search advertising products.⁴² Google uses two primary, interrelated search advertising products, AdWords and AdSense for Search.⁴³ These products will be discussed in greater detail later in this report.

³⁰ U.S. Patent Nos. 6,314,420 and 6,775,664.

³¹ Lycos picked for Explorer channels, CNET News, 09/09/1997.

³² HotBot is heart of Lycos deal, CNET News, 10/06/1998; Lycos lights up search sector, CNET News, 08/27/1997; Lycos Case Study, KPMG & University of Illinois, 2003, p. 5.

³³ See, for example, Lycos launches auction search, CNET News, 10/29/1998; Lycos Pushed as Global Internet Media Company, Korea Times via highbeam.com, 11/24/1999.

³⁴ Lycos Tops Yahoo in Internet Ratings, Knight Ridder-Tribune via highbeam.com, 04/20/1999.

³⁵ Lycos Inc. Form 10-K 1999, p.12.

³⁶ See, e.g., Overture Services Inc. Form 10-K 1999, p. 20; Inktomi Corp. Form 10-K 1999, p. 11; Excite Inc. Form 10-KA 1998, p. 34; Yahoo Inc. Form 10-K 1999, p. 21.

³⁷ Lycos Inc. Form 10-K 1999, p.12.

³⁸ Lycos bought in first foreign portal deal, news.cnet.com, 05/16/2000.

³⁹ Battelle, John. The Search. The Penguin Group, New York, NY. 2005, p.54; Terra Networks SA Form 20-F, 2004, p. 60.

⁴⁰ 2011 Google Form 10-K; Our History in Depth, google.com, accessed July 5, 2012.

⁴¹ Frequently Asked Questions, investor.google.com, accessed June 12, 2012.

⁴² Google, Inc. 2005 Form 10-K, p. 45; Google, Inc. 2008, Form 10-K, p. 38; Google, Inc. 2011 Form 10-K, p. 26.

⁴³ Frequently Asked Questions, investor.google.com, accessed June 12, 2012.

28. Google's search engine has experienced significant growth in usage since its inception. In 1998, Google users conducted a total of 3.6 million searches. That number had grown to 22 billion and 438 billion by 2000 and 2007, respectively. In 2011, Google handled over 1.7 trillion searches.⁴⁴

D. AOL

29. AOL Inc. is a web services company, incorporated in Delaware and headquartered in New York, NY.⁴⁵ The firm was previously known as America Online and was a player in the internet industry in the 1990s and early 2000s.⁴⁶ AOL and Time Warner merged in 2001 and operated as AOL Time Warner through December 2009, at which time AOL again became an independent, publicly traded company.⁴⁷
30. Google and AOL have a long-standing strategic relationship. In 2002, Google and AOL entered into an agreement whereby AOL would use both Google's search technology and its AdSense for Search technology. In return Google guaranteed AOL "tens of millions of dollars in revenue" and a small equity stake in the company.⁴⁸
31. In late 2005, Google entered into a Letter Agreement with Time Warner, Inc. (the parent company of AOL) and AOL in which Google agreed to purchase a 5 percent equity stake in AOL for \$1 billion in cash.⁴⁹ At the same time, Google and AOL also entered into arms-length commercial agreements, pursuant to the Letter Agreement.
32. AOL's Search Marketplace is an ad serving program built on Google's AdWords technology.⁵⁰ The service is essentially a white-label version of AdWords by which advertisers can customize their ad campaigns to AOL-specific audiences while retaining and employing the full functionality of Google's technology.⁵¹ Search Marketplace was launched in April 2007⁵² and, in 2008 and 2009,

⁴⁴ Google Annual Search Statistics, statisticbrain.com, accessed June 25, 2012.

⁴⁵ Overview - AOL, aol.com accessed 07/18/2012; AOL, Inc. Form 10-K 2011.

⁴⁶ Overview - AOL, aol.com accessed 07/18/2012; AOL, Inc. Form 10-K 2011; AOL LLC Form 10-K 1999.

⁴⁷ Overview - AOL, aol.com accessed 07/18/2012; AOL, Inc. Form 10-K 2009, p.2.

⁴⁸ Battelle, John. The Search. The Penguin Group, New York, NY. 2005, p.144-145; AOL-01167773-855 at 784-785.

⁴⁹ Google Inc. Form 10-K for the period ending Dec. 31, 2005, p.100.

⁵⁰ AOL Launches Google-Powered Search Marketplace, Search Engine Watch, 04/07/2007; More On AOL's Search Marketplace, searchengineland.com, 04/07/2007; AOL Launches Search Marketplace, aol.com, 04/09/2007.

⁵¹ AOL Launches Google-Powered Search Marketplace, Search Engine Watch, 04/07/2007; More On AOL's Search Marketplace, searchengineland.com, 04/07/2007; AOL Launches Search Marketplace, aol.com, 04/09/2007.

⁵² AOL Launches Google-Powered Search Marketplace, Search Engine Watch, 04/07/2007; More On AOL's Search Marketplace, searchengineland.com, 04/07/2007; AOL Launches Search Marketplace, aol.com, 04/09/2007.

Google estimated that AOL earned 30% incremental revenue via its usage of Search Marketplace.⁵³

E. IAC

33. IAC, also known as InterActiveCorp, was incorporated in Delaware and headquartered in New York, NY.⁵⁴ IAC was formerly known as Silver King Communications, which renamed itself IAC in 2004 after a series of acquisitions and name changes.⁵⁵
34. IAC is an Internet company having a network of websites that receives over 954 million total monthly views, and ranks as the 6th largest network of websites in the world.⁵⁶ In 2004, IAC's revenue totaled approximately \$254.4 million dollars; this figure had increased to \$2.059 billion dollars in 2011.⁵⁷
35. IAC owns and operates a website called Ask.com. Ask.com is an Internet search engine designed to receive a question from a user, and return a concise answer to the question based on information available on the web. Ask.com generates revenue through paid advertisements, the majority of which are supplied by Google according to a paid listing supply agreement.⁵⁸

F. Target

36. Target is a retail corporation headquartered in Minneapolis, MN.⁵⁹ Target was originally Dayton Dry Goods Company, and was renamed the Target Corporation in 2000.
37. Target operates a total of nearly 1,770 retail stores in 49 states, and is currently expanding into Canada.⁶⁰ Target stores sell a variety of products, from clothing to furniture.⁶¹ Target had total revenues of approximately \$46.8 billion and \$69.9 billion in 2004 and 2011, respectively.⁶²
38. In 1999, Target began selling products online through its website, Target.com. Target.com allows a user to search for a particular product or product type, and then displays relevant merchandise

⁵³ G-IPE-0265514 - 526 at 524; G-IPE-0306971 - 7024 at 6989.

⁵⁴ 2011 IAC 10-K.

⁵⁵ IAC History, iac.com, accessed July 5, 2012.

⁵⁶ About IAC, iac.com, accessed July 5, 2012.

⁵⁷ 2008 IAC 10-K report, p. 22; 2011 IAC 10-K, p. 26.

⁵⁸ 2011 IAC 10-K, p. 4.

⁵⁹ 2011 Target 10-K.

⁶⁰ Our Stores, target.com, accessed July 5, 2012.

⁶¹ Target.com Home Page, target.com, accessed July 5, 2012.

⁶² 2008 Target 10-K report, p. 16; 2011 Target 10-K report, p. 20.

on a results page. In addition, the Target.com search results page displays Google ads based on the search terms used.⁶³

G. Gannett

39. Gannett is a corporation headquartered in McLean, VA.⁶⁴ It is a media and marketing company⁶⁵ owning several well-known newspapers, websites, and local TV stations, such as USA Today and CareerBuilder.com.⁶⁶
40. In 2011, Gannett reported total revenues of approximately \$5.24 billion dollars. Nearly half of this revenue was derived from advertisements associated with Gannett's print and online publications.⁶⁷ These advertisements include Google advertisements displayed on Gannett-owned websites, such as USAToday.com.

H. Patents at Issue

41. The '420 patent issued on November 6, 2001 from an application filed December 3, 1998.⁶⁸ I understand I/P Engine asserts claims 10, 14, 15, 25, 27, and 28 of the '420 patent.
42. The '664 patent issued on August 10, 2004 from an application filed October 22, 2002.⁶⁹ I understand I/P Engine asserts claims 1, 5, 6, 21, 22, 26, and 28 of the '664 patent.
43. I am informed the patented technology generally relates to using a combination of content-based data and collaborative feedback data in filtering items for relevance to a query from a user.⁷⁰

I. Accused Products

AdWords

44. AdWords is Google's original and primary advertising product [REDACTED]

⁶³ Search, target.com, accessed July 5, 2012.

⁶⁴ 2011 Gannett 10-K report; Gannett Loses Globe, Wins Little, underconsideration.com, accessed July 5, 2012.

⁶⁵ Our Company, gannett.com, accessed July 5, 2012.

⁶⁶ Gannett Brands, gannett.com, accessed July 5, 2012.

⁶⁷ 2011 Gannett 10-K, p. 52.

⁶⁸ U.S. Patent No. 6,314,420.

⁶⁹ U.S. Patent No. 6,775,664.

⁷⁰ Discussion with Dr. Frieder.

⁷¹ Exhibit SLB-3 and Exhibit SLB-4.

AdSense for Search

45. Google launched AdSense for Search in 2005.⁷² AdSense for Search allows website owners to place Google Custom Search boxes on their websites. When a user searches the Internet or the website with the search box, Google shares the advertising revenue it makes from those searches with the website owner, referred to as a “publisher.”⁷³ AdSense for Search does not pay publishers for regular searches, but only pays a publisher when an advertisement on a page is clicked by a user.

AdSense for Mobile Search

46. Google introduced the first iteration of AdSense for Mobile Search in 2006.⁷⁴ This product allows publishers to embed a Google search box on their mobile portals and web sites.⁷⁵ Like AdSense for Search, AdSense for Mobile Search allows mobile operators and website owners to share in the ad revenue generated by searches originating from their sites.⁷⁶
47. By November 2006, Google’s Ad Sense for Mobile Search was number 1 in mobile web search and SMS search in the U.S., and “steady advertiser adoption has driven surging mobile revenues.”⁷⁷

Smart Ads Serving System

48. It is my understanding that the accused functionality is based on Google’s “Smart Ad Serving System” or “Smart Ads” an its utilization in the accused systems. Evidence indicates Smart Ads was initially implemented by Google in the first quarter of 2004, and by July 2004 was serving 100% of ads on the accused Google systems.⁷⁸ [REDACTED]
- [REDACTED] According to Google, “[Smart Ads] provides the infrastructure for analyzing huge quantities of data on ad performance and predicting CTRs (click-through rates) at an even more fine-grained level.⁸⁰”

⁷² G-IPE-0865313.

⁷³ G-IPE-0796947.

⁷⁴ Mobile Messages Make AdSense to Google, Tech News World, 09/18/2007.

⁷⁵ Calling all Carriers - Introducing AdSense for mobile search, googlemobile.blogspot.com, 2/10/2009.

⁷⁶ Calling all Carriers - Introducing AdSense for mobile search, googlemobile.blogspot.com, 2/10/2009

⁷⁷ G-IPE-0340604-655 at -646 and -648, respectively.

⁷⁸ See, e.g., G-IPE-0476688-89 at -89; G-IPE-0518677-96 at -93 and -95.

⁷⁹ [Rough] Deposition of Jonathan Alferness for Google Inc., dated June 21, 2012, pp.20-21. [REDACTED]

⁸⁰ G-IPE-0476688-89 at -89.

49. It is my understanding, through conversations with Dr. Frieder, that the asserted claims of the patents-in-suit generally relate to filtering items based on a combination of content-based data about the items and collaborative feedback data about the items.
50. It is also my understanding that Google’s Smart Ads system, and its utilization in the accused systems combines the elements described above when it calculates a predicted click-through rate or “pCTR” (a term used internally at Google to identify Quality Score), and that the pCTR is used to filter items for relevance to a query from a user. Google uses the term “Quality Score” to communicate aspects of pCTR to the public including its customers, and, [REDACTED]
- [REDACTED]
- [REDACTED]

VI. BASIS FOR OPINIONS

51. As noted earlier, I/P Engine is entitled to no less than a reasonable royalty.⁸² In certain circumstances, a patent holder is entitled to recover lost profits on the defendant’s sales of infringing products. I do not find that those circumstances exist in this matter and thus, lost profits damages are not applicable in this case.
52. In arriving at my opinion on a reasonable royalty I have relied upon my experience and expertise and have considered evidence in this case that “carefully tie[s] proof of damages to the claimed invention’s footprint in the marketplace.”⁸³

A. Accused Products

53. The first step in determining the damages attributable to the alleged infringement of Defendants in this matter is to identify the base of the accused products. Supported by the opinions of its technical expert, Dr. Frieder, I/P Engine accuses Google’s AdWords, AdSense for Search, and AdSense for Mobile Search systems, and AOL’s Search Marketplace system of infringing the patents-in-suit.

⁸¹ See, e.g., [Rough] Deposition of Jonathan Alferness for Google Inc., dated June 21, 2012, pp. 11-12, 13-17-17-2; 31-9-32.5; 101:17-108:23; IPE 0022875-877; G-IPE-0264611; G-IPE-0261638-761; G-IPE-0219104-219 at -130 (pp. 104-105 of deposition).

⁸² 35 USC § 284.

⁸³ *Uniloc USA* (Fed. Cir. 2011) at 46, quoting *ResQNet*, 594 F.3d at 869.

B. Reasonable Royalty - Structure

54. There are two primary approaches to specifying a patent royalty: the lump-sum approach and the running royalty approach. In the running royalty approach, a licensee makes continuing, periodic payments based on the extent of use made of the licensed patents during a period of time. The extent of use during each accounting period can be measured either by the number of licensed units made, used or sold, by the revenue received from the sale of licensed units, or some combination of both. If the number of units made, used or sold is used as the royalty base, the royalty rate is typically expressed as a fee for each unit. If sales revenue is used as the royalty base, the royalty rate is typically expressed as a percentage of the net revenue from the sale of the accused products.
55. In some cases a royalty is measured by a lump-sum payment by the defendant for a paid-up license to use the asserted patents. This approach is particularly useful in patent cross-license agreements between companies because it provides a business solution that gives both parties operational freedom during the term of the license.⁸⁴ If necessary, the parties can negotiate a fair "balancing" payment over the term of the license, taking into consideration the relative strength of each party's patents, and relative revenue base covered by the licenses. Lump-sum payments are less appropriate in one-way patent license situations where the extent of use of the patented technology over the life of the license agreement is relatively uncertain. Therefore, due to this uncertainty, more of the risk typically lies with the licensor than the licensee, making the lump-sum structure generally less desirable for the licensor.
56. As discussed later in this report, it is my opinion that a running royalty is the appropriate structure to be used in the determination of damages in this case.

C. Royalty Base

57. The accused revenues include U.S. revenue of three Google advertising systems: AdWords, AdSense for Search and AdSense for Mobile Search. The accused revenues also include AOL's Search Marketplace.
58. It is my understanding that upon proof of infringement, I/P Engine is entitled to recover damages related to Defendants' alleged use. The information from which I have derived the royalty base

⁸⁴ See, for example, G-IPE-0220581 - 600.

is based upon seven documents identified by Google as relating to “Google’s U.S. Based Properties.”⁸⁵

59. [REDACTED]

[REDACTED]

[REDACTED]

62. The accused revenues described above are based on information available to me as of the date of this report. [REDACTED] Should Google clarify or produce additional or updated information after the issuance of this report, I reserve the right to revise my calculation of the royalty base as necessary.

63. The Google revenues described above represent revenues that were generated by Google using the accused AdWords, AdSense for Search and AdSense for Mobile Search systems. As such, all

⁸⁵ Defendant Google Inc.’s Objections and Responses to Plaintiff I/P Engine, Inc.’s Fourth Set of Interrogatories; Nos. 15 and 16. Google identified the following seven documents upon which I rely: G-IPE-0218431-448; G-IPE-0218778-781; G-IPE-0867397; G-IPE-0867398; G-IPE-0867399; G-IPE-0867400; and G-IPE-0867401-403.

⁸⁶ G-IPE-0218778 – 781; also, see Confidential Videotaped Deposition of Sanjay Datta, June 12, 2012, at pages 51-52.

⁸⁷ G-IPE-0218436-438; and Defendant Google Inc.’s Objections and Responses to Plaintiff I/P Engine, Inc.’s Fourth Set of Interrogatories; Nos. 15 and 16.

⁸⁸ G-IPE-0867399 and G-IPE-08673400; and Defendant Google Inc.’s Objections and Responses to Plaintiff I/P Engine, Inc.’s Fourth Set of Interrogatories; Nos. 15 and 16.

⁸⁹ G-IPE-0218778 – 781; also, see Confidential Videotaped Deposition of Sanjay Datta, June 12, 2012, at pages 51-52.

⁹⁰ Defendant Google Inc.’s Objections and Responses to Plaintiff I/P Engine, Inc.’s Fourth Set of Interrogatories; Nos. 15 and 16. G-IPE-0218778-781; G-IPE-0867401-403; G-IPE-0218437-438; G-IPE-0867397; and G-IPE-0867398.

⁹¹ The information upon which I rely has been identified by Google as related to its U.S. Based Properties in Defendant Google Inc.’s Objections and Responses to Plaintiff I/P Engine, Inc.’s Fourth Set of Interrogatories; Nos. 15 and 16; G-IPE-0218431-439.

⁹² Confidential Videotaped Deposition of Sanjay Datta, June 12, 2012, at page 101.

of the revenues described above represent revenues that were earned by Google using the infringing systems.

64. Similarly, with respect to AOL's Search Marketplace, AOL's revenues from that system represent revenues earned using an infringing system. These revenues and the sources thereof are presented at Exhibit SLB-2B.

65. As will be discussed in more detail at Factor 13, I have determined that a reasonable apportionment of the accused revenues in this matter should be performed. [REDACTED]

[REDACTED]

66. Exhibit SLB-18 summarizes my estimation of reasonable apportionment factors based on the aforementioned Google quantifications of the impact of Smart Ads and related accused filtering functionality. As reflected in the exhibit, I calculate an apportionment factor for each quarter from the third quarter of 2004 through the second quarter of 2009.⁹⁷ In my opinion, this analysis provides a reliable and tangible basis to apportion the accused AdWords, AdSense for Search and AdSense for Mobile Search revenues and to limit the royalty base to revenues most closely associated with Google's alleged infringement of the patents-in-suit. The apportionment described in this report specifically excludes elements of Google's revenues from these systems that are attributable to capabilities present in Google's accused systems prior to Google's implementation of Smart Ads as well as improvements to Google's accused systems that

⁹³ Based on discussions with Dr. Frieder, it is my understanding that in addition to Smart Ads, "Disabling" and "Promotion" are features of the accused system that are accused of infringing the patents-in-suit. As such, I include incremental improvements in RPM associated with "Disabling" and "Promotion" in my overall apportionment of the royalty base.

⁹⁴ G-IPE-0224366, slide 7 of 44.

⁹⁵ See, for example, G-IPE-0561465; See also, G-IPE-0484319-386 at slides 37-38.

⁹⁶ G-IPE-0484319-386, Slide 37. See also G-IPE-0224366, slide 10 of 44.

⁹⁷ [REDACTED] If additional data is provided to me, I expect to update my exhibits, including the estimates of the quarterly apportionment factors.

occurred during and after the implementation of Smart Ads that is unrelated to the accused filtering functionality.

67. The apportioned royalty base for Google is presented at Exhibit SLB-2. The apportioned royalty base for co-defendants AOL, Gannett, IAC and Target is presented at Exhibit SLB-2A.

VII. *Georgia-Pacific* Factor Analysis

68. The *Georgia-Pacific* decision established fifteen factors that should be considered when determining an appropriate royalty rate in a patent infringement case. Each of the factors can have an effect on the potential royalty rate. All fifteen factors do not necessarily apply in each case, and the importance of each factor may vary depending on the unique case facts. I have identified information in this case that I currently consider relevant to these factors. However, the factors are not necessarily mutually exclusive. Certain issues discussed below within one factor may also relate to other factors, and certain items discussed above may also relate to these factors.

FACTOR 1

The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.

69. When the patent owner has licensed the patents-in-suit to others, this can provide valuable information about what might be used as a reasonable royalty.

70. [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

⁹⁹ [REDACTED] Complaint, *Lycos v TiVo, et al*, Civil Action No. 1:07-cv-11469-MLW.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁰⁰ *Fenner Investments, Ltd. v. Hewlett-Packard Co.*, 2010 WL 1727916 (E.D. Tex.), p. 6.

¹⁰¹ See, for example, How Are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes, Jay Kesan and Gwendolyn Ball, Illinois Law and Economics Working Paper Series, p. 238 and 35 U.S.C. § 271(a).

[REDACTED]

FACTOR 2

The rates paid by the licensee for the use of other patents comparable to the patent in suit.

- 77. It is useful to review licenses entered into by a defendant for information that may be relevant to determining the reasonable royalty rate. When a defendant has taken a license for a comparable patent or portfolio of patents, these licenses may be considered as evidence in determining a reasonable royalty. When the licensor is seeking a running royalty rate, any agreements evaluated for Factor 2 must be of a like kind (i.e., they must also be running royalties) or require conversion to a running royalty rate equivalent.¹⁰⁴

- 78. In the course of this litigation, Google has produced a number of agreements that I have reviewed. The agreements I reviewed under this factor are summarized at Exhibit SLB-14. With the exception of the Overture settlement described below, it is my opinion that none of these agreements provide information that informs the hypothetical negotiation for a license to the patents-in-suit.

¹⁰³ [REDACTED]

¹⁰⁴ *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F3d 1301 (Fed. Cir. 2009).

79. Other than the Overture settlement which is discussed below, [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
80. [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Yahoo! and Overture Services, Inc. - Google

82. On August 9, 2004, Yahoo! (“Yahoo”), Overture Services, Inc. (“Overture”) and Google entered into a Confidential Settlement Agreement and Release.¹¹¹ The parties entered into the Agreement to resolve two primary issues. The first was an alleged “under allocation of shares” by Google to Yahoo in connection with the June 2003 conversion of Yahoo’s June 2000 Warrant to Purchase Up to [REDACTED].¹¹² The second dispute related to Google’s alleged infringement of Overture’s intellectual property, Civil Case No. C 02-01991 JSW (EDL).¹¹³ The Agreement was structured to resolve both issues concurrently. Under

¹⁰⁵ See, for example, G-IPE-0220751-766 and [Rough] 30 (b)(6) Deposition of James Maccoun for Google, dated June 19, 2012, pp.55-57; G-IPE-0220832-841 and [Rough] 30 (b)(6) Deposition of James Maccoun for Google, dated June 19, 2012, pp. 77 and 91; and G-IPE-0220821-831 and [Rough] 30 (b)(6) Deposition of James Maccoun for Google, dated June 19, 2012, pp. 77 and 91.

¹⁰⁶ See, for example, G-IPE-0868071-083; G-IPE-0220871-875 and [Rough] 30 (b)(6) Deposition of James Maccoun for Google, dated June 19, 2012, pp. 32-34; and G-IPE-0221071-095.

¹⁰⁷ See, for example, G-IPE-0220532-546 and [Rough] 30 (b)(6) Deposition of James Maccoun for Google, dated June 19, 2012, p. 122; and G-IPE-0220722-750 and G-IPE-0220767-768.

¹⁰⁸ See, for example, G-IPE-0220876-1052 and G-IPE-0221054-071.

¹⁰⁹ See, for example, [Rough] 30 (b)(6) Deposition of James Maccoun for Google, dated June 19, 2012, pp. 29-30.

¹¹⁰ See, for example, IAC-IPE-0015244; GAN IPE 0000024; GAN IPE 0000025; TAR IPE 0000114-115; TAR IPE 0000166-185; TAR IPE 0000186-205; TAR IPE 0000206-211; G-IPE-0868084-468; [REDACTED]

[REDACTED] See, e.g., Yahoo Acquires Overture Services, latimes.com, 10/8/2003.

¹¹¹ G-IPE-0220601-637.

¹¹² G-IPE-0220601-637 at 601.

¹¹³ G-IPE-0220601-637 at 601.

the terms of the Agreement, Google granted 2,700,000 shares of Google stock to Yahoo in return for an irrevocable, fully paid-up, non-exclusive, [REDACTED] license to U.S. Patent 6,269,361 (“the ‘361 patent”) [REDACTED]¹¹⁴ [REDACTED]
[REDACTED]

83. [REDACTED]
[REDACTED] In the warrants dispute with Yahoo, Google had taken the position that no additional shares were owned.¹¹⁵ Similarly, in the patent dispute, Google had taken the position that it did not infringe the ‘361 patent or any other Overture/Yahoo patents.¹¹⁶ [REDACTED]
[REDACTED]
84. Although the settlement agreement itself cannot be relied upon for the reasons described above, other licenses for the ‘361 and related patents inform the hypothetical negotiation for a license to the patents-in-suit as will be discussed in Factor 12.

FACTOR 3

The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.

85. When the license is exclusive, the royalty rate is typically higher. When restrictions in scope are placed on the license, the royalty would typically be lower.
86. In the present case, I assume the hypothetical license would be a non-exclusive license to use the patented technology in the United States.
87. [REDACTED]
[REDACTED] In the present case, the license granted and its associated royalty base would be limited to Google’s U.S. revenue.
88. The effect of this factor on the reasonable royalty rate would be neutral.

¹¹⁴ G-IPE-0220601-637.

¹¹⁵ G-IPE-0220601-637 at 601.

¹¹⁶ G-IPE-0220601-637 at 601.

¹¹⁷ See, for example, [Rough] 30 (b)(6) Deposition of James Maccoun for Google, dated June 19, 2012, pp. 133-134.
[REDACTED]

FACTOR 4

The licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.

89. In circumstances where a patent owner has the intent to maintain a monopoly, a higher reasonable royalty is justified. This commonly occurs when the patent owner itself manufactures and/or sells the patented product and seeks to maintain its market position.
90. While Lycos has established that it will pursue litigation with parties it believes to infringe its patents (i.e., *Lycos v. TiVo, et al.* as described under Factor 1), I am not aware of any evidence that Lycos would have withheld a license to Google for the patents-in-suit.
91. The effect of this factor on the reasonable royalty is neutral.

FACTOR 5

The commercial relationship between the licensor and the licensee, such as, whether they are competitors in the same territory in the same line of business or whether they are inventor and promoter.

92. When parties to the hypothetical negotiation are competitors, the amount of royalty may be higher to take into account the direct competition between the parties. That is, by granting a license to a competitor, the licensor may be losing sales it might otherwise make. Accordingly, it would require a higher royalty amount to compensate it for potential lost sales and product market opportunities. This effect is mitigated, however, in situations where there is little or no strategic value to withholding the invention. If the nature of the invention is such that licensing the technology will not be reasonably expected to diminish sales opportunities for the licensor or, stated in the converse, that withholding the license from an actual or potential competitor is not likely to increase sales for the licensor, then there would be no economic incentive for the patent holder to withhold a license to a competitor.¹¹⁹ In fact, in situations in which a patent holder is actively seeking to license technology, the patent holder may recognize an alternative benefit from licensing the technology with the hopes that it might speed adoption of the technology.

¹¹⁹ Roman L. Weil, Peter B. Frank, Kevin D. Krebs, and Michael J. Wagner, *Litigation Services Handbook, Fourth Edition – 2009 Cumulative Supplement*, §22.6(b).

93. In 1999, there were eleven primary search engines, each with independent search technology that collectively covered most of the Internet.¹²⁰ The search industry consolidated over the next five years in such a way that by 2004 there were two primary search engines – Google and Yahoo (owner of Inktomi, All The Web, Overture, and AltaVista) – which powered the search services of the majority of the market.¹²¹
94. Lycos' parent company at the time of the hypothetical negotiation, Terra, considered Google a direct competitor over the 2002 – 2004 time period.¹²² Lycos accounted for 94%, 62% and 52% of Terra's U.S. advertising/e-commerce revenues in 2002, 2003 and 2004, respectively.¹²³ While under Terra's ownership, Lycos also made agreements with most of the contemporary search firms: Google began providing context-relevant ads to Lycos Europe in mid-2003,¹²⁴ and Lycos's search service was powered in part by Google, AskJeeves' Teoma, and Yahoo's Inktomi and AlltheWeb.¹²⁵ Nonetheless, Terra still considered all of these firms to be direct competitors over the 2002 to 2004 time period.
95. Lycos would have known that by August of 2003, Google was the leader when it came to share of searches with 32% of total searches by Internet users.¹²⁶ Google was already attracting a third more unique visits by users than Lycos in February 2004.¹²⁷ Among the segment of At-Home and At-Work Internet users, Google had an audience over two times the size of Lycos and those visitors were spending over three times as much time on the Google site as they were on Lycos.¹²⁸
96. Because of its strong brand recognition, extensive network of advertisers using its AdSense and AdWords programs and growing Internet audience, Lycos would have viewed Google as an attractive partner, granting Lycos access to a much broader market than it would otherwise be able to reach. Consideration of these circumstances warrants a downward adjustment to the reasonable royalty.

¹²⁰ Giles, CL and Lawrence, S. Accessibility of information on the web. *Nature* (400), July 1999, p. 107 – 109.

¹²¹ Van Couvering E. New media - The political economy of Internet search engines. Communication Technology Policy Section of the IAMCR 2004, p. 9.

¹²² Terra Networks SA Form 20-F, 2004, p. 43; Terra Networks SA Form 20-F, 2003, p. 49; Terra Networks SA Form 20-F, 2002, p. 50.

¹²³ Terra Networks SA Form 20-F, 2004, p. 62.

¹²⁴ Google to provide context-relevant ads to Lycos, *New Media Age* via highbeam.com, 06/12/2003;

¹²⁵ Van Couvering E. New media - The political economy of Internet search engines. Communication Technology Policy Section of the IAMCR 2004, p. 9.

¹²⁶ US Online—Access, Demographics & Usage, eMarketer, June 2004, p. 195.

¹²⁷ US Online—Accessing, Demographics & Usage, eMarketer, June 2004, p. 173.

¹²⁸ US Online—Access, Demographics & Usage, eMarketer, June 2004, p. 176.

FACTOR 6

The effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales.

97. In situations where the sale of a patented product results in additional sales of other products, it is appropriate to consider those additional sales in determining the reasonable royalty for the patented product. These additional sales are often called convoyed sales, collateral sales or pull-through sales.
98. It is my opinion that convoyed sales are not a factor in this case.
99. The effect of this factor on the reasonable royalty is neutral.

FACTOR 7

The duration of the patent and the term of the license.

100. If the term of the license or the duration of the patent is less than the expected life span of the accused product, it could have the effect of lowering a reasonable royalty.
101. The term of a hypothetical license agreement between Lycos and Google for the patents-in-suit would last until the expiration of the patents-in-suit in 2016.¹²⁹ I note that this is consistent with the license grants for the '361 patent and other patents discussed at Factor 12.¹³⁰
102. The effect of this factor on the reasonable royalty is neutral.

FACTOR 8

The established profitability of the product made under the patent; its commercial success; and its current popularity.

103. To the extent that the patented product is demonstrated or reasonably foreseen to be profitable, commercially successful and popular with customers at the time of the hypothetical negotiations, the reasonable royalty rate may be higher. To the extent that these considerations under Factor 8 are uncertain or negative, that may tend to indicate a lower reasonable royalty rate.

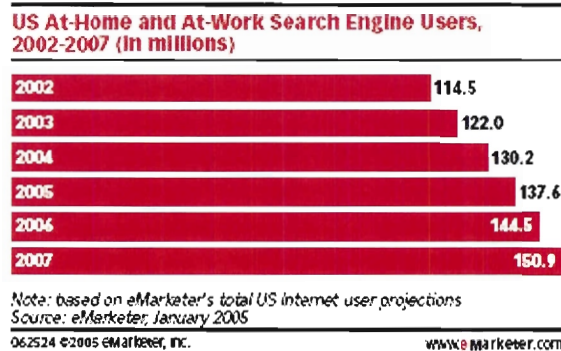
¹²⁹ U.S. Patent Nos. 6,314,420 and 6,775,664. Note that both patents-in-suit are subject to terminal disclaimers.

¹³⁰ See, for example, YAHOO-000001-012 at 004, YAHOO-000084-092 at 086, YAHOO-000119-127 at 121 and YAHOO-000147-155 at 149.

104. As will be discussed below, at the time of the hypothetical negotiation in early 2004, the paid search advertising market was well-established and highly profitable, and was expected to continue growing strongly. Since 2004, Google's revenues and profits from its search advertising products (AdWords, AdSense for Search, and AdSense for Mobile Search) have grown dramatically.

The Internet Advertising Industry

105. Around the time of the hypothetical negotiation, publically available information indicated that Internet search engine use had experienced significant growth and was expected to continue to grow. Evidence indicates that industry participants like the parties in the present litigation, as well as other major search engine executives, believed that this growth would continue.¹³¹ For example, around 8 million new users started using search engines in 2005, the year following the hypothetical negotiation.¹³²



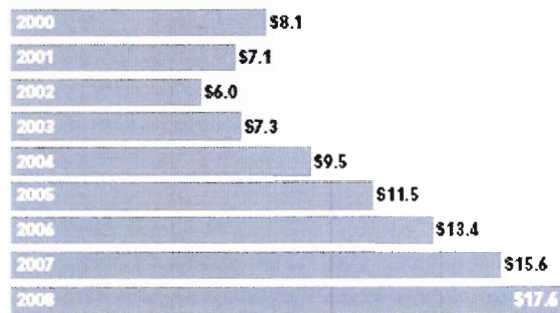
106. The market for Internet advertising was also experiencing rapid growth. In 2000, total online ad spending was \$8.1 billion, and was expected in 2005 to increase to \$17.6 billion in 2008.¹³³ Estimates of expected growth rates for online ad spending for the years following 2003 ranged from 30.7% to 12.8%.¹³⁴

¹³¹ See Greg Jarboe, Online Ads & Search: Looking Back, Looking Forward, Search Engine Watch (Jan. 16, 2005); Eric Auchard, Google sees advertisers devote more budget online, Reuters (Nov. 30, 2005); Patricia Hursh, Divining the Future of Search Engine Advertising, Search Engine Watch (Apr. 17, 2006); The Long Trail, Wired Blog Network (Feb. 12, 2005); Danny Sullivan, Search Publishers Not Friends of Agencies, SEMs, Search Engine Watch (Dec. 29, 2004; see also G-IPE-0347048; IAC-IPE-0031329-353 at -339.

¹³² Search Engine Marketing: Search Users and Usage, eMarketer, February 2005, page 16.

¹³³ Search Engine Marketing: Search Users and Usage, eMarketer, February 2005, page 8.

¹³⁴ Search Engine Marketing: Search Users and Usage, eMarketer, February 2005, page 9.

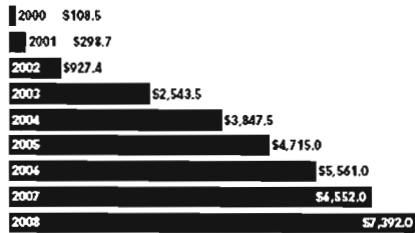
Online Ad Spending in the US, 2000-2008 (In billions)

Note: eMarketer benchmarks its US online ad spending projections against the Interactive Advertising Bureau (IAB) - PricewaterhouseCoopers (PwC) data, for which the last full year measured was 2003
Source: eMarketer, January 2005

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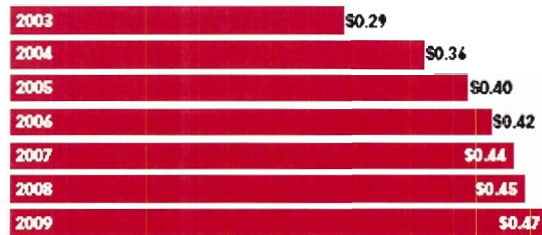
107. Paid search ad spending also increased steadily, to around \$4.7 billion per year in 2005.¹³⁵ Annual paid search ad spending was expected to increase to more than \$7.3 billion by 2008.¹³⁶ Price-per-click was also increasing, becoming a driver of growth in paid search revenue that was forecasted to grow:¹³⁷

Paid Search Ad Spending in the US, 2000-2008 (in millions)

Note: includes paid search, paid inclusion and contextual search; eMarketer benchmarks its US online ad spending projections against the Interactive Advertising Bureau (IAB) - PricewaterhouseCoopers (PwC) data, for which the last full year measured was 2003
Source: eMarketer, January 2005

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Average Price per Click for Paid Search in the US, 2003-2009

Source: Jupiter Research, August 2004 appeared in Morgan Stanley presentation, September 2004

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www.emarketer.com

108. Expectations of continued growth of the paid search market were shared throughout the industry. Just before the time of the hypothetical negotiation, several established analyst firms shared the belief that paid search advertising spending would double from 2004 levels by

¹³⁵ IAB Internet Advertising Revenue Report, PricewaterhouseCoopers, 2002, page 7.

¹³⁶ IAB Internet Advertising Revenue Report, PricewaterhouseCoopers, 2002.

¹³⁷ Search Engine Marketing-Search Users and Usage, eMarketer, February 2005.

2008.¹³⁸ Robust growth was expected in the short term, too. The projected 2005 search ad spending growth rate ranged from 22.5% to 35.0%.¹³⁹

Comparative Estimates: Paid Search Ad Spending in the US, 2002-2008 (in billions)

	2002	2003	2004	2005	2006	2007	2008
eMarketer, January 2005	\$0.93	\$2.54	\$3.85	\$4.72	\$5.56	\$4.55	\$7.39
Forrester Research, October 2008	-	\$1.92	\$2.77	\$3.59	\$4.37	\$5.07	\$5.62
JupiterResearch, July 2004	-	\$1.90	\$2.60	\$3.20	\$3.80	\$4.40	\$5.00
Piper Jaffray, June 2004	\$1.19	\$2.36	\$3.30	\$4.37	\$4.98	\$6.06	\$7.01
SEMPO, December 2004	-	-	\$3.52	-	-	-	-
Smith Barney, June 2004	\$1.09	\$1.89	\$2.68	\$3.62	\$4.71	\$5.88	\$7.21

Note: includes paid search and paid inclusion
Source: eMarketer, January 2005; various, as noted, 2003 & 2004
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109. For most of the 2000s, and particularly around the time of the hypothetical negotiation, paid search dominated online ad spending.¹⁴⁰ From 2001 to 2007, paid search ad spending growth rates exceeded online ad spending growth rates without search.¹⁴¹

Paid Search Ad Spending in the US, 2000-2008 (as a % of total online ad spending)

2000	1.3%
2001	4.2%
2002	15.4%
2003	35.0%
2004	40.5%
2005	41.0%
2006	41.5%
2007	42.0%
2008	42.0%

Note: includes paid search, paid inclusion and contextual search;
eMarketer benchmarks its US online ad spending projections against the Interactive Advertising Bureau (IAB) - PricewaterhouseCoopers (PwC) data, for which the last full year measured was 2003
Source: eMarketer, January 2005
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Online Ad Spending Growth in the US, with and without Paid Search, 2001-2008 (as a % increase/decrease vs. prior year)

	Total	Paid search	Total without search
2001	-11.8%	175.3%	-14.3%
2002	-15.8%	210.5%	-25.6%
2003	20.9%	174.3%	-7.1%
2004	30.7%	51.3%	19.7%
2005	21.1%	22.5%	20.0%
2006	16.5%	17.9%	15.5%
2007	16.4%	17.8%	15.4%
2008	12.8%	12.8%	12.8%

Note: eMarketer benchmarks its US online ad spending projections against the Interactive Advertising Bureau (IAB) - PricewaterhouseCoopers (PwC) data, for which the last full year measured was 2003
Source: eMarketer, January 2005
062494 ©2005 eMarketer, Inc. www.eMarketer.com

¹³⁸ Search Engine Marketing-Search Users and Usage, eMarketer, February 2005, page 8.

¹³⁹ Search Engine Marketing-Search Users and Usage, eMarketer, February 2005, page 8.

¹⁴⁰ Search Engine Marketing-Search Users and Usage, eMarketer, February 2005, page 8.

¹⁴¹ Search Engine Marketing-Search Users and Usage, eMarketer, February 2005, page 9.

Profitability of Accused Google Systems

[REDACTED]

111. As will be discussed in Factor 12, the Overture/Yahoo license agreements to Marchex and others, which form my starting point for determining a reasonable royalty rate, were also related to paid search advertising. At the time of the hypothetical negotiation Google was highly profitable, while Marchex was operating at a loss.¹⁴⁵

112. The effect of this factor would increase the reasonable royalty rate.

FACTOR 9

The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.

FACTOR 10

The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor, and the benefits to those who have used the invention.

FACTOR 11

The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.

113. Due to their similarities with respect to the facts of this case, Georgia-Pacific Factors 9, 10, and 11 will be discussed together.

The Google Business Model in Particular – How Does Google Make Money?

[REDACTED]

¹⁴² Calculated from Exhibit SLB-5.

¹⁴³ Calculated based on revenue net of TAC from Exhibit SLB-7.

¹⁴⁴ Exhibit SLB-11.

¹⁴⁵ Exhibit SLB-11 and Marchex, Inc. 2005 Form 10KSB.

¹⁴⁶ G-IPE-0338219-274 at G-IPE-0338235.



115. [REDACTED]

[REDACTED]

117. Google’s success, at least in part, depends on automating the selection and placement of ads from a pool of many millions that are relevant to the user’s query. The technology described by the patents-in-suit enables Google to dramatically improve the relevance of advertisements to a user’s query and therefore the quality of the ads it serves, which is fundamental to Google’s success and market share.

¹⁴⁷ See, for example, G-IPE-0338219-274 at G-IPE-0338235 and 30(b)(6) Deposition of Sanjay Datta for Google Inc., dated June 12, 2012, pp. 22, 67-69.

¹⁴⁸ See, for example, G-IPE-0347087-108, G-IPE-0294094-105, G-IPE-0306419-429 and the 30(b)(6) Deposition of Sanjay Datta for Google Inc., dated June 12, 2012, pp. 60-62.

¹⁴⁹ 30(b)(6) Deposition of Sanjay Datta for Google Inc., dated June 12, 2012, pp. 60.

¹⁵⁰ 30(b)(6) Deposition of Sanjay Datta for Google Inc., dated June 12, 2012, pp. 60.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

119. As will be discussed below, the launch of the Smart Ads system, and its utilization in the accused systems was a major change in the way Google served advertising on search results page, and [REDACTED]

The Importance of the Patented Technology in the Search Industry

120. The Internet search business model is built upon on a basic formula of driving the total volume of search queries and monetizing those queries (typically expressed as revenue per thousand queries or RPM). This business model can be enhanced by increasing the relevance of both search results and the ads served along with them, a formula which was well-understood by the search industry at the time of the hypothetical negotiation.

121. For example, according to 23.6% of respondents to a 2004 survey conducted by Enquiro:

Next to trust in the search result, relevance is the next most important cause for a click. A strong relationship between paid search ads and the keywords used to call them up helps create relevant results. And more than 70% of

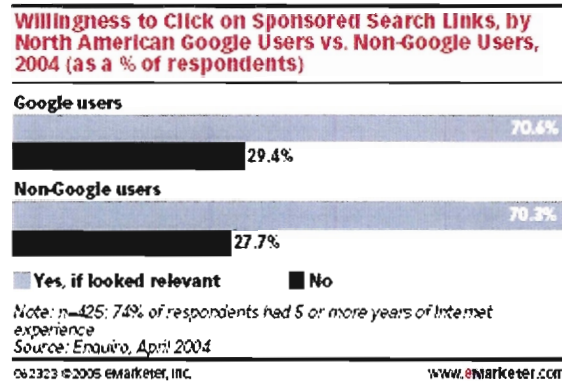
¹⁵¹ See, e.g., G-IPE-0264232-233 at -233.

¹⁵² G-IPE-0248210-241.

¹⁵³ G-IPE-0063864.

¹⁵⁴ See, e.g., G-IPE-0767210; G-IPE-0537274-295 at -289 (3/18/09); G-IPE-0538962-990 at -978 (5/13/09); G-IPE-0539377-553 at -393 (5/27/09); G-IPE-0539554-578 at -563 (6/3/09); G-IPE-0539601-624 at -610 (6/10/09); G-IPE-0540148-171 at -157 (6/24/09); G-IPE-0540551-585 at -569 (7/1/09); G-IPE-0540771-815 at -795 (7/8/09); G-IPE-0540942-984 at -962 (7/15/09); G-IPE-0541199-255 at -220 (7/22/09); G-IPE-0541635-677 at -657 (7/29/09); G-IPE-0541717-761 at -742 (8/5/09); G-IPE-0541850-888 at -872 (8/12/09); G-IPE-0541988-2027 at -2011 (8/19/09); G-IPE-0542282-322 at -306 (8/26/09).

Internet users are ready to click on relevant sponsored search links, no matter if they're Google or non-Google users.¹⁵⁵



122. As shown above, Google users are more likely to click on paid search links if they appear relevant.¹⁵⁶ Google wants its ads to be valuable to users. In paid search, “relevance” and “value” are largely synonymous.

Ong big question is: what is our goal?

- Ultimately, we want to maximize long-term revenue
- We believe that maximizing long-term revenue involves maximizing the value of the ads that we serve to users

Source: G-IPE-0015698

123. Google’s success has been built on a foundation of determining how well ads match a user’s query (i.e. “relevance”):

“There are infinite reasons why Google has been successful, but the most basic is that it has always focused first on relevancy. This has allowed the company to capitalize on the concept that ads are actually part of the content, not simply a negative externality. Ads served with search results on Google are in some cases more valuable to the searcher than organic results. Ads served by Google on a publisher’s Web page add value to the publisher’s content through relevancy.”¹⁵⁷

124. Relevance impacts the Google business model directly in several ways, and “[t]he belief that more customers lead to more revenue is unquestioned.”¹⁵⁸ If search users perceive search results to be more relevant, they are more satisfied, which in turn makes them likely to be more loyal,

¹⁵⁵ Search Engine Marketing-Search Users and Usage, eMarketer, February 2005, p.28.

¹⁵⁶ Search Engine Marketing-Search Users and Usage, eMarketer, February 2005, p.28.

¹⁵⁷ Brand Advertising and Google - Relevancy vs. Targeting, mediapost.com, Sep. 2006.

¹⁵⁸ Is Relevance Relevant? Journal of Computer-Mediated Communication, 12(3), 2007.

which gives Google a greater share of the overall market for search queries. Greater ad relevancy increases the probability that a user will click on an ad (higher CTR) and also increases the amount an advertiser is willing to pay to place that ad (higher CPC).

125. Additional examples of the impact of relevance on revenue include the following:

“And since Google is better at matching ads with users, the system is more efficient for advertisers, too, creating a sort of virtuous circle that gives Google a powerful edge.”¹⁵⁹

“We believe that interest-based ads will create the same virtuous cycle, by giving users more relevant ads, while generating higher returns for advertisers and publishers.”¹⁶⁰

126. [REDACTED]

Google’s Smart Ad Serving System

127. Smart Ads’ calculation of each ad’s pCTR, improving the relevance of the ads displayed along with the search results generated in response to a user’s query, was a major improvement.

128. Externally, Google uses the term “Quality Score” to communicate aspects of the pCTR computed by Smart Ads to advertisers and partners to explain how Google’s search ads auction works, and also as a way to represent the overall quality of a particular ad.¹⁶²

129. [REDACTED]

¹⁵⁹ A Long-Delayed Ad System Has Yahoo Crossing Its Fingers, New York Times, Feb. 2007.

¹⁶⁰ Official Google Blog: “Making Ads More Interesting”. Googleblog.blogspot.com.

¹⁶¹ G-IPE-0747407-422 at G-IPE-0747411; See also, e.g., G-IPE-0507853.

¹⁶² [Rough] Deposition of Jonathan Alferness for Google Inc., dated June 21, 2012, pp.3-4 and pp.11-12; History of AdWords Quality Score and Periodic Changes, ppchero.com, accessed 6/26/2012.

¹⁶³ G-IPE-0224366, slides 7 and 10 of 44.

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

- According to a January 2011 article profiling former Google CEO Eric Schmidt, “Google will tell you that its quality score setup improves the ‘relevance’ of the ads it posts to its search engine. And it does. But it also ends up making Google much more money.”¹⁶⁹

¹⁶⁴ See, e.g., G-IPE-0224366 (Video); G-IPE-0561465-501; G-IPE-0554456-460;

¹⁶⁵ G-IPE-0224366 (Video).

¹⁶⁶ See, e.g., G-IPE-0561465-501, at 467.

¹⁶⁷ G-IPE-0222661-720 at -668.

¹⁶⁸ G-IPE-0484319-386 at -355.

¹⁶⁹ G-IPE-0554456-460 at -457.

131. [REDACTED]

[REDACTED]

132. [REDACTED]

133. Evidence indicates that prior to the introduction of Quality Score, Google faced problems with irrelevant or misleading ads.¹⁷² As described in this report, Google cares deeply about overall user satisfaction with search results, even after the user leaves Google’s website.

134. The user experience with search advertisements consists of two distinct stages: the first, before clicking on an ad, and the second, after the click. Quality Score has improved the user experience on both dimensions. [REDACTED]

¹⁷⁰ G-IPE-0018963-68 at -63.

¹⁷¹ Alferness Deposition at 13:17-17:2, 101:17-108:23.

¹⁷² David Wallace, Doorway Pages or Advertising Pages, What is the Difference?, Search Engine Guide (Mar. 17, 2004); Greg Linden, Unfortunate AdWords, Geeking with Greg (Dec. 18, 2004); John Leyden, Botnets strangle Google Adwords campaigns, The Register (Feb. 3, 2005); Jennifer Slegg, Analyzing the Google AdWords Landing Page Algorithm, Search Engine Watch (July 24, 2006); Matt Cutts, More details on Web 2.0 story, Gadgets, Google, and SEO (Oct. 5, 2005); Andrew Goodman, December 2005 Google AdWords Update – A Supplement to the Google AdWords Handbook (Dec. 8, 2005); John Lamping, On the internet, nobody knows you’re a dog, Google (2005).

¹⁷³ G-IPE-0244991-121 at -081; G-IPE-0063660-664 at -663.

[REDACTED] By introducing keyword relevancy requirements, Quality Score makes it more costly for advertisers to put irrelevant ads into rotation, improving the user experience and increasing click through rates.

135. Even if an advertisement appears “good”– i.e., appears relevant and does not impact user experience negatively – the post-click user experience may still suffer if the destination website (landing page) fails to match the user’s expectations based on the content of the ad. Quality Score improves post-click user experience by promoting ads that link to more relevant destination landing pages. In this way, Quality Score intensifies competition among advertisers on the quality of the content. Because Quality Score ranks ads based on quality rather than exclusively on the advertiser’s bid amount, Google has created strong incentives for advertisers to invest in better content.¹⁷⁴

136. Google’s popularity and market position were established in large part due to the improvements in relevancy realized after launching Quality Score.¹⁷⁵ For example:

Gaining a few extra bucks is just a short term tactic, but Google has shown time after time that they think in decades, not years. The true value of quality score is that it optimizes the paid search results so that they are almost as (and sometimes even more) relevant than the natural results. This makes their Search Engine Results Page (SERP) even that much more germane to the user’s query and helps secure Google’s search engine as the top choice for most of the world’s searches.¹⁷⁶

Extent of Use of the Patented Invention

137. [REDACTED]
[REDACTED] Google currently averages over 4 billion searches per day.¹⁷⁸

138. [REDACTED]
[REDACTED]
[REDACTED]

¹⁷⁴ Andy Beal, Google AdWords Landing Page Standards Explored, Marketing Pilgrim (July 11, 2006).
¹⁷⁵ See e.g., What is Quality Score, softwareprojects.com, 5/25/2007; Definitive Answers On Quality Score - Q&A With Click Equations' Craig Danuloff, searchengineland.com, 6/10/2011; Quality Score, RSO-Consulting.com, 10/14/2011; Compete Says Bing's Combined U.S. Market Share Grew to 29 in Dec, techcrunch.com, 1/3/2011.
¹⁷⁶ Definitive Answers On Quality Score - Q&A With Click Equations' Craig Danuloff, searchengineland.com, 6/10/2011.
¹⁷⁷ See, e.g., G-IPE-0476688 -89 at -89; G-IPE-0518677-96 at pp.17 and 19.
¹⁷⁸ Google Annual Search Statistics, StatisticBrain.com, accessed 6/25/2012.
¹⁷⁹ "Life of a Dollar" G-IPE-0008829-884 at 875.

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

Non-Infringing Alternatives to the Patents-in-Suit

139. Dr. Frieder informs me that Google’s accused system would not be able to provide the benefits described above without the technology described by the ‘420 and ‘664 patents.¹⁸¹ He further informs me that he has not been able to identify a means of designing around the patents-in-suit that would provide Google with comparable results.¹⁸²

140. In considering Lycos’ and Google’s positions at the hypothetical negotiation, I have considered my discussions with Dr. Frieder concerning the absence of comparable or adequate non-infringing substitutes to the patent-in-suit, as well as the variety of methods used by Google as described above.

141. Consideration of these factors would increase the reasonable royalty rate.

FACTOR 12

The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

142. As described at Factor 2, Google licensed the ‘361 patent from Yahoo/Overture Services as part of a settlement agreement with Yahoo in August 2004. It is my understanding through discussions with Dr. Frieder that the patented technology described by the ‘361 patent is sufficiently comparable to the ‘420 and ‘664, such that in my opinion this agreement provides an indication of a reasonable royalty range applicable to the patents-in-suit.

[REDACTED]

[REDACTED]

¹⁸⁰ “Life of a Dollar” G-IPE-0008829-884 at 872-873.

¹⁸¹ Discussions with Dr. Frieder.

¹⁸² Discussions with Dr. Frieder.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Overture Services – Marchex, Inc.

144. Overture Services, Inc. (“Overture”) licensed [REDACTED] including the ‘361 patent, to Marchex, Inc. (“Marchex”) [REDACTED] [REDACTED]. I am informed by Dr. Frieder that the licensed patented technology generally relates to the selection and positioning of items on a search results page in response to a search query.
145. Overture was a global leader in commercial Internet search services.¹⁸⁴ It was acquired by Yahoo in 2003 in a transaction announced to be worth \$1.63 billion.¹⁸⁵ Overture had revenues for the first six months of 2003 of almost \$500 million.¹⁸⁶ It had acquired the Alta Vista and Fast Search and Transfer businesses during 2003 and it launched “...Content Match, our new contextual advertising product that places our search results on relevant content pages of our distribution partner’s Web sites.”¹⁸⁷ After the acquisition, Yahoo was expected to incorporate Overture’s Content Match.¹⁸⁸
146. Marchex is a search and performance-based advertising company primarily focused on small and medium-sized business customers. Its products, Marchex Adhere and Marchex Connect, are advertising programs that are performance-based with a focus on placement of local search results. With the Marchex Pay-for-Call product, potential customers call advertisers via special, track-able phone numbers and a location-specific search engine, OpenList.¹⁸⁹ Marchex reported revenue of \$66.8 million for periods from inception through December 31, 2004.¹⁹⁰ Substantially all of its revenue was from performance-based advertising services.¹⁹¹

¹⁸³ [REDACTED]

¹⁸⁴ Overture Services, Inc. Form 10-Q for the quarter ended June 30, 2003; page 6.

¹⁸⁵ Yahoo in Deal for Overture, an Internet Listing Service, The New York Times, 7/15/2003.

¹⁸⁶ Overture Services, Inc. Form 10-Q for the quarter ended June 30, 2003; page 14.

¹⁸⁷ Overture Services, Inc. Form 10-Q for the quarter ended June 30, 2003; pages 6 and 16.

¹⁸⁸ Yahoo in Deal for Overture, an Internet Listing Service, The New York Times, 7/15/2003.

¹⁸⁹ See, for example, Marchex Reports Fourth Quarter and Full Year 2004 Financial Results, www.investors.marchex.com, accessed 6-28-12.

¹⁹⁰ Marchex, Inc. Form 10-KSB for the year ended December 31, 2004, Consolidated Statements of Operations.

¹⁹¹ Marchex, Inc. Form 10-KSB for the year ended December 31, 2004, page 32.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

150. [REDACTED]

[REDACTED]

[REDACTED]

Overture Services – Interchange Corporation

151. Overture Services licensed [REDACTED] to Interchange Corporation (“Interchange”), including the ‘361 patent, [REDACTED]. The technology licensed generally relates to the selection and positioning of items (such as advertisements) on a search results page in response to a search query.

152. Founded in 1999, Interchange originally offered a software-based and later a web-based, search engine product.²⁰⁷ It went public in 2004.²⁰⁸ In 2005, Interchange announced plans to acquire the Local.com domain name and in 2006 officially changed its name to Local.com.²⁰⁹ Local.com is an online search engine that allows users to search for businesses in specific locations, such as the city in which the user lives.²¹⁰ The company’s strategy is to build market share by increasing traffic to the site primarily through search engine marketing. It serves over 1,000,000 consumers a day.²¹¹

153. [REDACTED]

²⁰² [REDACTED]

²⁰⁷ Local Corporation, Our Story, www.localcorporation.com, accessed 6-28-12.

²⁰⁸ Local Corporation, Corporate Overview, June 2012, page 3.

²⁰⁹ Local Corporation, 10/27/12, Form 8-K.

²¹⁰ Local Corporation, Our Value, www.localcorporation.com, accessed 6-28-12.

²¹¹ Local Corporation, Corporate Overview, June 2012, page 3.

²¹² U.S. Patent Nos. 6,269,361 and 6,078,866. See YAHOO-000085.

²¹³ YAHOO-000086.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

160. Adknowledge is a privately owned online advertising company whose business model relies heavily on behavioral targeting and customization in order to display more relevant advertising.²²¹ Adknowledge expanded its offerings by actively acquiring both competing and complementary advertising and social networking websites such as Super Rewards, Cubics and Lookery. Adknowledge's recent focus has been on penetrating the social networking advertising market on websites such as Facebook and MySpace.²²²

[REDACTED]

[REDACTED]

[REDACTED]

²²¹ Adknowledge, Inc., Company Overview, www.adknowledge.com, accessed 6/28/12.

²²² Adknowledge, Inc., Company Overview, www.adknowledge.com, accessed 6/28/12.

²²⁴ ValueClick, Inc., Overview, www.valueclick.com, accessed 6/28/12.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Assessment of Comparability and Conclusion

[REDACTED]

[REDACTED]

	[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

168. I am further informed by Dr. Frieder that the '361 is technologically comparable to the patents-in-suit in the sense that it relates to search advertising technology used in AdWords.

169. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

170. [REDACTED]

FACTOR 13

The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

171. As part of the hypothetical negotiation regarding a reasonable royalty for the '420 and '664 patents, the parties would recognize that Google has implemented many elements and other factors that have contributed to the commercial success of the accused products.

172. Prior to implementing the accused functionality in the Smart Ads system, and its utilization in the accused systems, Google was very successful in the Internet search and search advertising markets. For example:

- a. Prior to the time of the hypothetical negotiation, Google was commercially successful and had amassed a growing base of users and advertisers. Google was serving more than 20 million search queries per day as early as 2000.²²⁸
- b. Google had become a recognized brand, particularly with respect to Internet search, prior to allegedly implementing the patented Lycos technology into its search advertising products.²²⁹
- c. Google has satisfied a growing volume of queries by investing in its hardware and software infrastructure.²³⁰
- d. There were an estimated 200,000 advertisers using Google's paid listing programs around the time of the hypothetical negotiation.²³¹
- e. In late 2004, Google was the top ranked search engine by U.S. and North American Internet users.²³²

²²⁸ Google Launches Self-Service Advertising Program, google.com, 10/23/2000.

²²⁹ See, e.g., Google Annual Report, 2004; Google Builds World's Largest Advertising and Search Monetization Program, google.com, 3/4/2003; Brand of the Year Survey Results 2003, brandchannel.com, accessed 7/15/2012; Google Inc. Form 10-K, for the year ended December 31, 2004, page 1.

²³⁰ Google Inc. Form 10K, Year Ending 2004, p.11.

²³¹ Google - 1 Million Advertisers in 2007, More Now, The New York Times, Jan. 8, 2009.

²³² eMarketer, "Search Engine Marketing: Search Users and Usage," February 2005, p. 20.

173. These elements of Google’s success are unrelated to the patented invention and, thus, must be taken into account in determining the reasonable compensation for Google’s use of the patented invention. As discussed in detail throughout this report, however, the evidence indicates that the patented invention plays an extremely important role in driving revenues and profits at Google.

174. When the patented invention is not the sole driver of the value of the accused system(s), the courts have indicated that the accused revenues should be “apportioned” to create a royalty base that separates, to the extent possible, the economic value of the patented invention from other features.²³³ [REDACTED]

[REDACTED]

²³³ *Uniloc USA, Inc. v. Microsoft Corp.*, 632 S.3d 1292 (Fed. Cir. 2011).

²³⁴ Based on discussions with Dr. Frieder, it is my understanding that in addition to Smart Ads, “Disabling” and “Promotion” are features of the accused system that are accused of infringing the patents-in-suit. As such, I include incremental improvements in RPM associated with “Disabling” and “Promotion” in my overall apportionment of the royalty base.

²³⁵ G-IPE-0224366, slide 7 of 44.

²³⁶ See, for example, G-IPE-0561465; See also, G-IPE-0484319-386 at slides 37-38.

²³⁷ G-IPE-0484319-386, Slide 37.

[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

²³⁸ G-IPE-0484319-386, Slide 38.

[REDACTED]

[REDACTED]

[REDACTED]

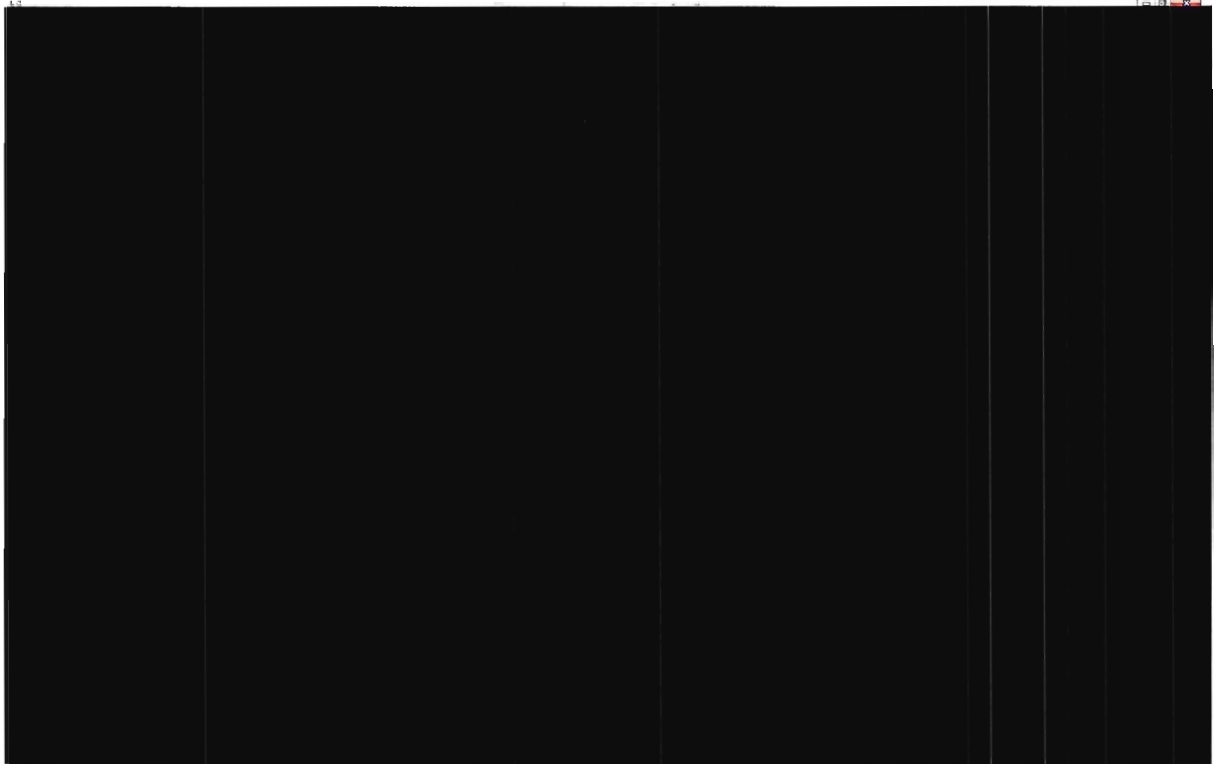


[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



177. Exhibit SLB-18 summarizes my calculation of reasonable apportionment factors based on the aforementioned Google quantifications of the impact of Smart Ads and related accused functionality. As reflected in the exhibit, I calculate an apportionment factor for each quarter from the third quarter of 2004 through the second quarter of 2009.²⁴⁰ In my opinion, this analysis provides a reliable and tangible basis to apportion the accused AdWords and AdSense revenues and to limit the royalty base to revenues most closely associated with Google's alleged infringement of the patents-in-suit. This apportionment specifically and conservatively excludes elements of Google's revenues from these systems that are attributable to capabilities present in Google's ad serving systems prior to Google's implementation of Smart Ads as well as improvements to Google's systems that occurred during and after the implementation of Smart Ads that are unrelated to the accused functionality.

²⁴⁰ [REDACTED] If additional data is provided to me, I expect to update my exhibits, including the estimates of the quarterly apportionment factors.

178. This factor provides the basis for apportionment of the royalty base. Since its effect has been taken into account in the royalty base, no adjustment to the royalty rate is indicated by this factor.

FACTOR 14

The opinion testimony of qualified experts.

179. In addition to the facts and factors discussed above, I will review and consider the reports and testimony of other experts related to this case as they become available.

FACTOR 15

The amount that a licensor (such as the patentee) and a licensee (such as the accused infringer) would have agreed upon (at the time the alleged infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee – who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention – would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.

180. The central construct of a *Georgia-Pacific* analysis of the reasonable royalty rate is a hypothetical negotiation between the patent holder as licensee and the accused infringer as licensor. Each is assumed to enter the negotiation as a willing party to a license for the patent-in-suit. Each is assumed to consider the patent-in-suit to be valid and infringed by the accused products.

181. As part of the hypothetical negotiations, Lycos and Google would have considered many of the points discussed earlier in this report as well as several of the issues addressed in *Georgia-Pacific* factors 1 through 13.

A. Time of Hypothetical Negotiations and Date Damages Begin

182. The timing of the hypothetical negotiation is important, as it defines the market conditions and circumstances of the parties as well as the facts and circumstances that inform the bargaining positions of the two sides. [REDACTED]

[REDACTED]

[REDACTED] Thus, the hypothetical negotiation is assumed to occur in the first quarter of 2004. At that time, the patents-in-suit were owned by Lycos, which indicates that the parties to the hypothetical negotiation are Lycos as licensor and Google as licensee. Lycos and Google would have been aware of all relevant

²⁴¹ See, for example, G-IPE-0817067 and G-IPE-0518693.

information regarding the patents-in-suit and the parties are assumed to know and understand the relevant facts in the industry that would affect the negotiations.

183. In some cases it may be appropriate to also consider facts that occurred subsequent to the date of hypothetical negotiations, in particular to test the reasonableness of the resulting royalty rate.²⁴²

B. Starting Point for the Negotiation

184. [REDACTED]

185. [REDACTED]

C. Adjustments to the Starting Point Royalty

186. Since the circumstances of the hypothetical negotiation would not have been identical to the Overture Services patent license transactions that form the basis for the starting point royalty rate, adjustments must be made to arrive at a reasonable royalty outcome for the Lycos-Google

²⁴² See, for example, *Sinclair Refining Co. v. Jenkins Petroleum Process Co.*, 289 U.S. 689, 697-698 (1933); *Fromson v. Western Litho Plate & Supply Co.*, 853 F.2d 1568, 1575-76 (Fed. Cir. 1988); *Interactive Pictures Corp. v. Infinite Pictures, Inc.*, 274 F. 3d 1371, 1384 (Fed. Cir 2001); *Riles v. Shell Exploration and Prod. Co.*, 298 F.3d 1302, 1313 (Fed. Cir. 2002); and *Honeywell Int'l v. Hamilton Sundstrand Corp.*, 378 F. Supp. 2d 459, 468 (D. Del. 2005).

²⁴³ For example, Overture Services sued Google for infringement of the '361 patent in April 2002. See, "Overture files patent infringement law suit against Google," Internet Business News, April 8, 2002. Lycos was aware of the '361 patent no later than January 22, 2004, when Overture Services Inc. accused Lycos of infringing the '361 patent. See Defendants Answer, Counter-Claims and Third-Party Claims, Civil Action No. 03-12012 RWZ, filed January 22, 2004.

²⁴⁴ [REDACTED] Use of a lump-sum royalty structure can provide some advantages, in particular for a licensee such as Google, such as ease of administration and protection of confidential business information that otherwise might need to be revealed to the licensor in periodic royalty reporting. I note, however, that the structure of the license, as lump-sum versus running royalty, does not alter the economic value of the patented technology. Different license structures merely represent different allocation of some of the economic costs and risks of licensing the patented technology. Many of the advantages of a lump-sum favor the licensee and, hence, would tend to increase the licensee's willingness to pay.

negotiation. Consideration of the various *Georgia-Pacific* factors discussed above provides the framework to discuss these various adjustments. As in most cases, not every *Georgia-Pacific* factor is relevant to the particular facts and circumstances of every case. As discussed in the prior sections of this report, the following factors have downward or upward influences on the outcome of the negotiation between Lycos and Google.

<i>Georgia-Pacific</i> Factor Summary	
Factor 1	N/A
Factor 2	N/A
Factor 3	Neutral
Factor 4	Neutral
Factor 5	Decrease
Factor 6	Neutral
Factor 7	Neutral
Factor 8	Increase
Factor 9	Increase
Factor 10	Increase
Factor 11	Increase
Factor 12	████████████████████
Factor 13	Provides Basis for Apportionment of the Royalty Base

187. As discussed at *Georgia-Pacific* Factor 5, despite the fact that Lycos and Google were competitors at the time of the hypothetical negotiation, it is reasonable to assume that Lycos would have viewed Google as a very attractive licensee. By early 2004 Google controlled a significant share of the Internet search and paid search advertising markets. Licensing the technology of the patents-in-suit to Google would have provided Lycos with an efficient means to access the large market served by Google. Thus, Lycos would have been willing to license the patents-in-suit to Google on attractive terms.
188. Consideration of *Georgia-Pacific* Factors 8, 9, 10 and 11 indicate increases to the reasonable royalty rate. These increases are driven by the significance of the Smart Ads system, and its utilization in the accused systems and the associated Quality Score-related functionality to the

success and profitability of Google's search advertising business. These issues are discussed in detail at factors 8, 9, 10 and 11.

189. As discussed in Factor 13, an apportionment of Google's U.S. AdWords and AdSense revenues is necessary to arrive at a royalty base that most closely reflects the revenues attributable to the accused system implemented by Google in 2004. Exhibit SLB-17 summarizes the apportionment factors by quarter for the time period covered by the royalty base.

190.

[REDACTED]

This royalty rate should be applied to the apportioned base of Google's accused U.S. AdWords, AdSense for Search and Mobile Search and AOL's Search Marketplace revenues. It is also my opinion that this royalty structure and royalty rate provides reasonable compensation to I/P Engine for Google's infringement of the patents-in-suit.

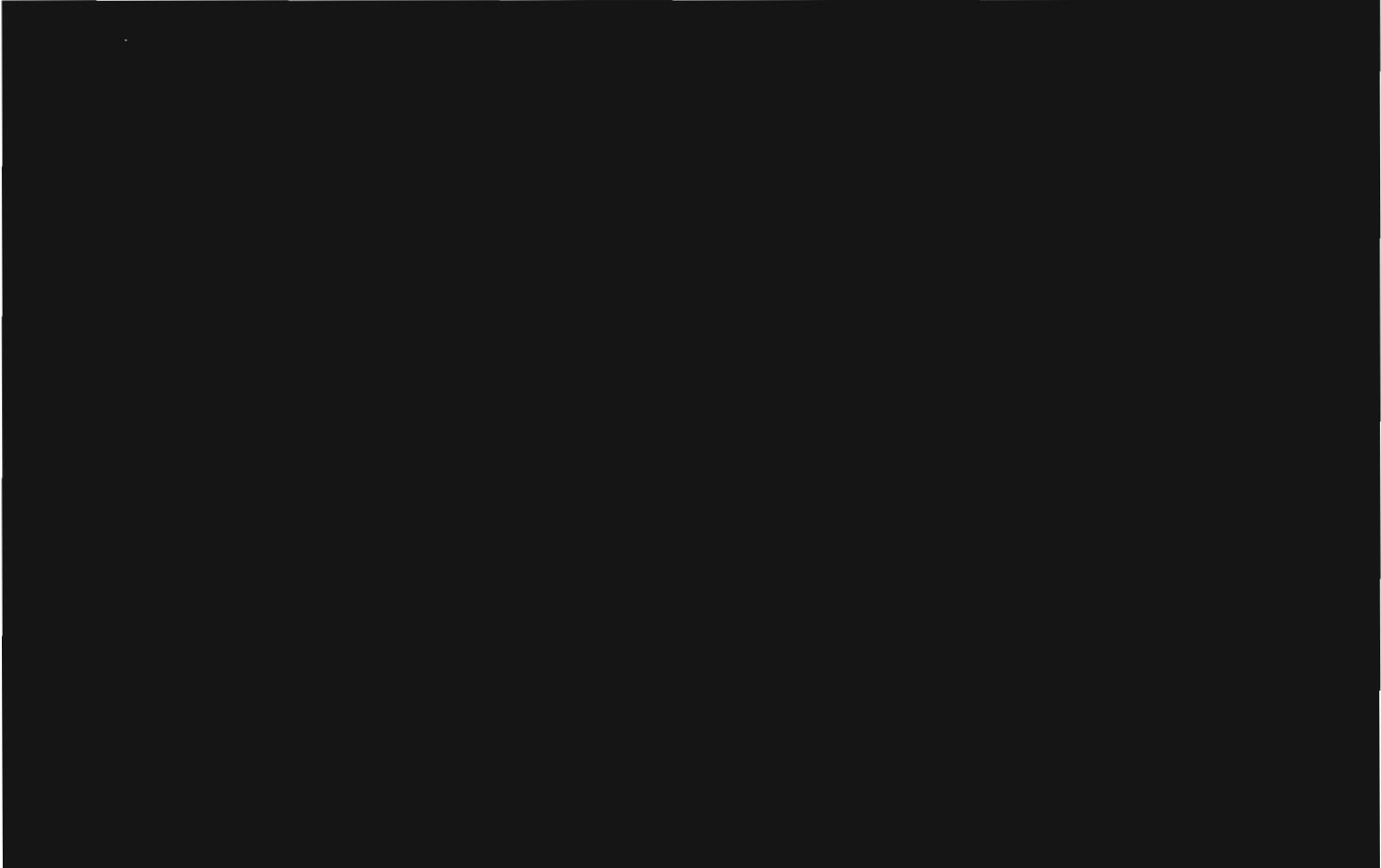
191. Exhibit SLB-1 provides a summary of the damages that result from application of the reasonable royalty rate to the apportioned royalty base. The damages reflected in Exhibit SLB-1 represent damages related to Defendants' infringement and are inclusive of AdSense for Search revenues (and associated damages) that Google shares with publisher websites such as co-defendants AOL, IAC, Gannett and Target. Exhibit SLB-2a provides a detail of the damages attributable to the portion of the revenues that Google shared with co-defendants AOL, IAC, Gannett and Target.²⁴⁵

VIII. OTHER ISSUES

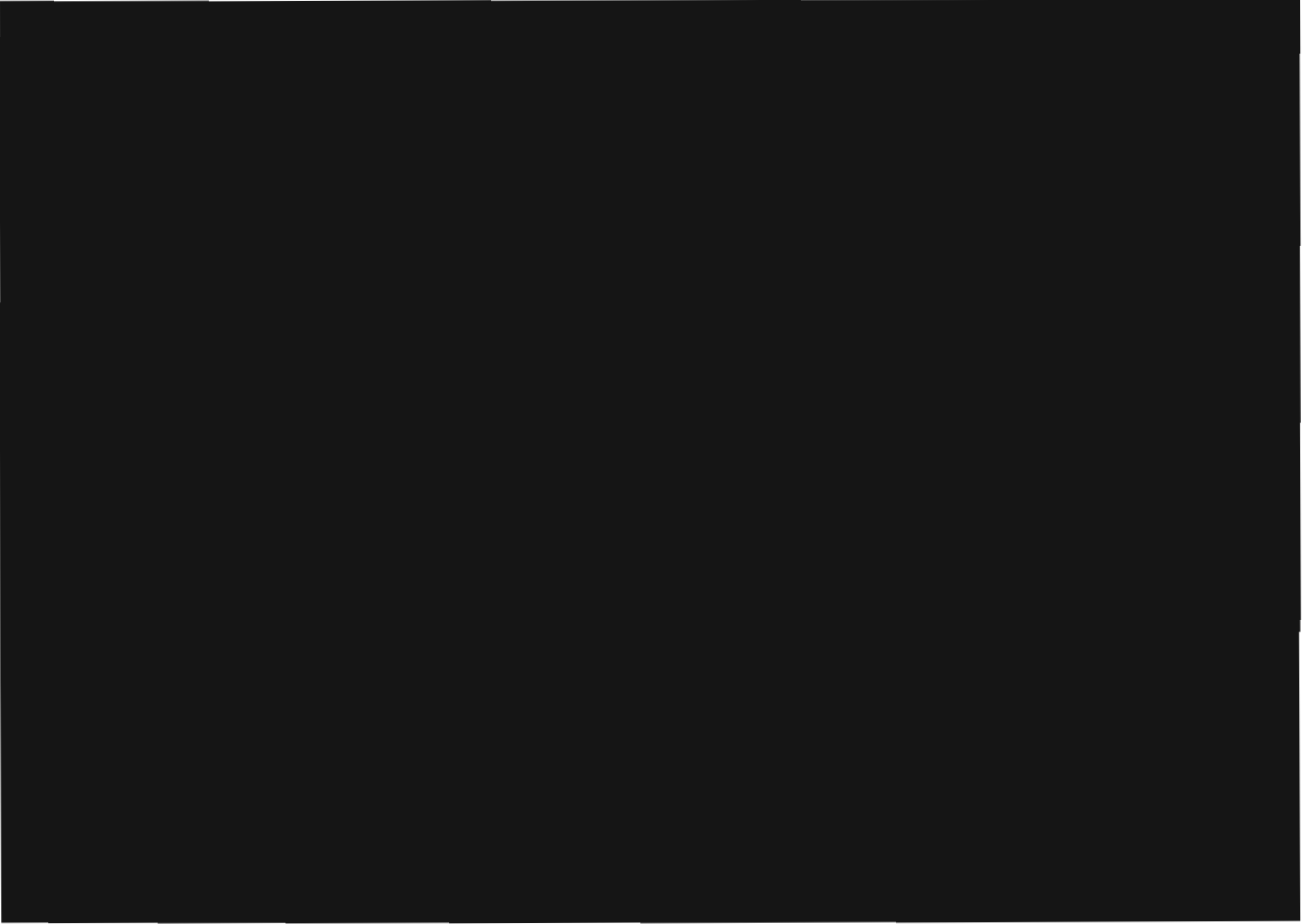
192. This report represents my analysis, opinions and conclusions at this time and is based on information available to me as of the date above. I understand that discovery in this case is ongoing. If additional information or testimony becomes available to me, I may revise or supplement my analysis, opinions and conclusions, and I thus reserve the right to modify or supplement my report as necessary. I may testify at trial regarding any related matter raised by

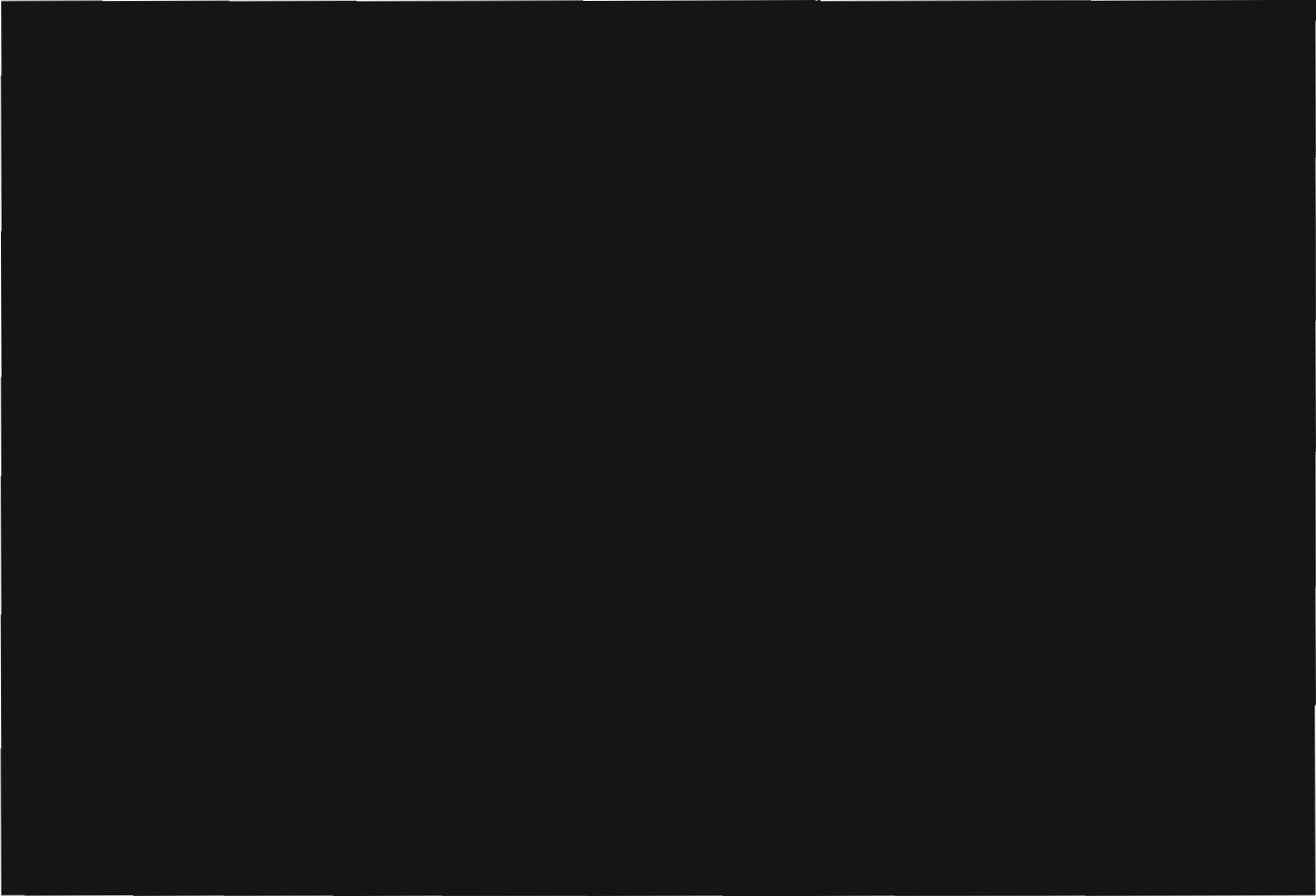
²⁴⁵ Note that the damages reflected in Exhibit SLB-2a are not additive with the overall damages reflected in Exhibit SLB-1.

either party after the date of this report, if asked to do so by the Court or the parties' attorneys. I may also be asked to develop additional exhibits for trial purposes related to my analysis, opinions and conclusions. This report is intended solely for use in the above-referenced litigation and is not to be used for any other purpose.



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