EXHIBIT D

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
NORFOLK DIVISION

I/P ENGINE, INC., Plaintiff, v. AOL, INC., GOOGLE INC., IAC SEARCH & MEDIA, INC., GANNETT COMPANY, INC., and TARGET CORPORATION, Defendants.	§ §	Civil Action No. 2:11-cv-512-RAJ

<u>REBUTTAL EXPERT REPORT OF KEITH R. UGONE, PH.D.</u>

August 29, 2012

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Appendix A: *Georgia-Pacific* Analysis

REBUTTAL EXPERT REPORT OF KEITH R. UGONE, PH.D.

August 29, 2012

I. OVERVIEW OF ASSIGNMENT

1. I have been retained as an economics and damages expert for Google Inc. ("Google"), AOL, Inc. ("AOL"), IAC Search & Media, Inc. ("IAC"), Gannett Company, Inc. ("Gannett"), and Target Corporation ("Target") (collectively, "Defendants") in the matter of *I/P Engine, Inc., vs. AOL, Inc., et al.*[1] I/P Engine, Inc. ("I/P Engine") alleges that each Defendant has infringed the following two patents (collectively, the "Patents-in-Suit"):[2]

   a. U.S. Patent No. 6,314,420 ("the '420 Patent") entitled "Collaborative/Adaptive Search Engine" issued on November 6, 2001; and

   b. U.S. Patent No. 6,775,664 ("the '664 Patent") entitled "Internet Filter System Method for Integrated Content-Based and Collaborative/Adaptive Feedback Queries" issued on August 10, 2004.

2. Generally, I/P Engine alleges (and the Defendants dispute) that Google has "directly infringed, and continue[s] to infringe at least one claim" of each of the Patents-in-Suit by "making, using, providing, selling and/or offering for sale products, services, methods, and systems including without limitation, its search advertising systems."[3] AOL, IAC, Gannett, and Target are alleged to infringe the Patents-in-Suit by using Google's accused search advertising systems, AdWords and AdSense for Search.[4] As a result of the

[1] The full caption of this matter is *I/P Engine, Inc. vs. AOL, Inc., Google Inc., IAC Search & Media, Inc., Gannett Company, Inc., and Target Corporation.*

[2] Complaint filed September 15, 2011 ("Complaint"), p. 1; U.S. Patent No. 6,314,420; and U.S. Patent No. 6,775,664.

[3] Complaint, pp. 18 and 23. (Bracketed text added for clarification.)

[4] Complaint, pp. 12 and 15 – 17.

Defendants' alleged infringement, I/P Engine "seeks compensatory damages, past and future, amounting to no less than reasonable royalties."[5]

3. On July 25, 2012, I/P Engine submitted the expert report of Dr. Stephen L. Becker ("Dr. Becker") in support of its claimed damages.[6] Dr. Becker opined to a royalty rate of [redacted] to be applied to an "apportioned royalty base" calculated by Dr. Becker to "reflect the estimated incremental impact on Google's accused revenues of the implementation of the Smart Ads system and its utilization in the accused systems."[7] Contained in **Table 1** are I/P Engine's claimed royalty damages by Accused Product as calculated by Dr. Becker.[8]

[redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

4. I have been requested by counsel for the Defendants to evaluate the damages-related opinions contained in the Becker Report. In conducting my analyses, I have been asked to assume the Patents-in-Suit are valid, enforceable, and infringed by each Defendant

[5] Complaint, p. 1.

[6] Expert Report of Stephen L. Becker, dated July 25, 2012 ("Becker Report").

[7] Becker Report, p. 6.

[8] Becker Report, Exhibits SLB-2, SLB-6, SLB-8, and SLB-10. Claimed damages are calculated from [redacted]

[9] Dr. Becker also calculated a claimed damages amount of [redacted] associated with AOL Search Marketplace (i.e., a "white label" version of Google AdWords). (Becker Report, p. 5 and Exhibit SLB-2B.) It appears that Dr. Becker did not report this figure in his "reasonable royalty summary." (Becker Report, Exhibit SLB-1.)

(which each Defendant disputes).[10] My opinions and the bases for my opinions are contained in the remainder of this report.

II. SUMMARY OF OPINIONS[11]

5. My evaluation of I/P Engine's claimed royalty damages is based upon (a) my economics and damages quantification training and experience, (b) my review of the Becker Report, (c) documentary evidence, (d) deposition testimony, (e) standard damage quantification techniques, (f) a hypothetical negotiation framework in combination with an analysis of the non-exclusive 15 *Georgia-Pacific* factors, (g) guidance provided by various district court and Federal Circuit opinions,[12] and (h) other important business and economic considerations germane to an analysis of royalty damages.

A. Hypothetical Negotiation Date And Parties

6. It is my understanding that Google began to employ the Accused Functionality [redacted] predicted click-through rates ("pCTR"s) calculated by Smart Ads) in or around March 2004.[13] At this time, the Patents-in-Suit were owned by Lycos. Thus, the hypothetical negotiation for a license to the Patents-in-

[10] Should the trier of fact determine that the Patents-in-Suit are not valid, not enforceable, or not infringed, there would be no basis, from an economic perspective, to award damages.

[11] This Summary of Opinions is intended to be an overview. A full description of my opinions is contained throughout this report and the associated exhibits.

[12] These district court and Federal Circuit opinions include, but are not limited to: (a) *Georgia-Pacific Corp. v. United States Plywood Corp. ("Georgia-Pacific")*, (b) *Lucent Technologies, Inc., et al. v. Gateway, Inc., et al. and Microsoft Corporation ("Lucent")*, (c) *Cornell University v. Hewlett Packard Company ("Cornell")*, (d) *IP Innovation v. Red Hat, Inc. ("Red Hat")*, (e) *ResQNet, et al. v. Lansa, Inc. ("ResQNet")*, and (f) *Uniloc USA, Inc. v Microsoft Corporation ("Uniloc")*. The non-exclusive 15 *Georgia-Pacific* factors are summarized in **Appendix A** to my report.

[13] Google's first experiment with AdWords using SmartAds pCTR [redacted] was on March 9, 2004. Google launched AdWords using Smart Ads pCTR [redacted] for 50% of users on June 30, 2004 and 90% of users by July 1, 2004. [redacted] Ad *ranking* and *pricing* are determined by the auction (based upon a combination of pCTR, advertiser bids, and other factors). [redacted] The Accused Functionality will be described more fully later in my report.

Suit would have taken place in or around March 2004 between Lycos and Google. At the hypothetical negotiation, Lycos and Google would have negotiated a non-exclusive, freedom-to-operate, U.S. license to the Patents-in-Suit. The freedom-to-operate provision would cover not only Google but also Google's full use of the Patents-in-Suit (including allowing Google's technology that allegedly practices the claimed teachings of the Patents-in-Suit available to its partners such as AOL, IAC, Gannett, and Target).[14]

B. Negotiating Positions Of The Parties

7. The following facts provide guidance as to the royalty payment structure and royalty amount that would have been negotiated between Lycos and Google for a license to the Patents-in-Suit.

1. Lycos' Negotiating Position

8. Based upon documentary evidence, deposition testimony, and the economic analyses presented throughout my report, the following considerations would have guided Lycos' negotiating position with Google at the hypothetical negotiation.

a. Valid, Enforceable, And Infringed Patents. Lycos would have asserted that the Patents-in-Suit are valid, enforceable, and infringed by Google. Lycos would have asserted that a company wishing to implement an online search advertising platform utilizing filtering technology in accordance with the claimed teachings of the Patents-in-Suit would need a license from Lycos.[15]

b. Limited Benefits Associated With The Asserted Claims. Lycos would have been aware that Google used an auction-based system for selling advertisements. Also, the Accused Functionality was limited to Google's use of [redacted] Lycos would have been aware that the benefits to Google of a license to the Patents-in-Suit would not extend beyond those associated [redacted]. In particular, Lycos would have recognized that ad ranking and pricing

[14] Dr. Becker also assumed that the hypothetical negotiation would result in a license that covered Google's partners' use of its accused products. (Becker Report, p. 5.)

[15] While Google (and the other Defendants) deny these assertions, the assertions are assumed (as required) within the construct of the hypothetical negotiation.

were determined by the results of the auction and were beyond the scope of the Accused Functionality.

c. Lycos' Lack Of Commercialization Or Licensing Efforts Related To The Patents-In-Suit. At the hypothetical negotiation, both Lycos and Google would have been aware that Lycos had not undertaken any commercialization or licensing efforts specifically related to the Patents-in-Suit. Lycos had neither sought to license nor received requests to license the '420 and '664 Patents. In fact, Lycos had shifted its business focus and ceased investing in search technologies as early [redacted]

d. A Bare (I.E., Naked) Patent License. Lycos would have recognized that Google would be obtaining a bare (or naked) patent license to the Patents-in-Suit. No technical information or know how would be transferred with the license agreement. Significant contributions would be required by Google to implement the Accused Products (allegedly containing the Accused Functionality), including hardware infrastructure and software programming. Additionally, a license to the Patents-in-Suit would not provide Google with the specific method of computing the pCTRs that allegedly are used in the Accused Functionality.

e. Lycos' Business Difficulties. Until 2009, Lycos had remained unprofitable for a number of years, including around the time of the hypothetical negotiation. Specifically, Lycos was not profitable from 2004 through 2008. Additionally, as of February 2004, Lycos had laid off 20% of its U.S. work force and began closing offices.

f. Lycos' Awareness That Licensing To Google Would Be Beneficial. At the time of the hypothetical negotiation, Lycos would have been aware that licensing to Google would be advantageous. Lycos would have acknowledged, among other considerations, its existing relationship with Google related to Google's AdSense for Content and AdSense for Search products and Google's strong brand name as two significant incentives for entering into a license agreement with Google related to the Patents-in-Suit.

   i. As of April 2004, "Lycos's advertising based revenue structure was largely dependent on Google AdWords" and "Lycos [was] the largest network serving Google contextual AdWords advertising." Lycos would have had strong incentives to license the Patents-in-Suit on favorable terms to Google because the advertising revenue Lycos generated from AdSense for Search (i.e., an Accused Product) was an important revenue stream for Lycos.

   ii. Lycos also would have had a strong incentive to enter into a reasonable license with Google because Lycos was dependent upon revenue it generated from

[16] [redacted] was filed – that it would not launch a commercial product based on the technology of the Patents-in-Suit.

Google's AdSense for Content product (which is not accused). Lycos continues to use Google's AdSense for Content product today.

g. Lycos' Willingness To Accept A Lump-Sum Royalty Payment Structure. Lycos did not have a preference for a lump-sum or a running royalty payment structure. However, Lycos' willingness to accept a lump-sum payment structure is supported by the licensing offers and settlement license agreements that Lycos entered into with (i) [redacted]

Lycos' position at the hypothetical negotiation would have been known by the parties.

2. Google's Negotiating Position

9. Based upon documentary evidence, deposition testimony, economic analyses, and discussions held with Google personnel and Google's technical expert as presented throughout my report, the following considerations would have guided Google's negotiating position with Lycos at the hypothetical negotiation.

a. Google Made Substantial Contributions To The Commercial Success Of The Accused Products Independent Of The Patents-In-Suit. Prior to implementing the Accused Functionality, Google had achieved significant commercial success in Internet search and search advertising. At the hypothetical negotiation, Lycos and Google would have acknowledged that Google had made and would continue to make substantial contributions to the Accused Products, including but not limited to Google's web search technology, numerous features and benefits of the Accused Products unrelated to the Patents-in-Suit, significant investments in hardware and software infrastructure, and Google's auction system.

i. Google Achieved Commercial Success Prior To The First Alleged Infringement. Prior to the hypothetical negotiation, Google had established a large user base and network of advertisers and partnership sites that would drive Google's accused advertising revenues independent of the Patents-in-Suit. At the hypothetical negotiation, Lycos and Google would have acknowledged that Google would continuously introduce new and improved products, services, features, and functionalities unrelated to the Patents-in-Suit to maintain and enhance its installed base of users and advertisers.

ii. Google Ecosystem: The Dependence Of Advertising Upon Google Search. Google was founded as a search engine company. As one its founding philosophies, Google stated that "It's best to do one thing really, really well" and "we do search." Google constantly innovates to improve the quality of its search results. At the hypothetical negotiation, Lycos and Google would recognize that the success of Google Search allows Google to establish a trusted network of users and consequently establish an ecosystem of users, advertisers, and third-party publishers to drive the accused advertising revenues.

iii. Google's Accused Products Offer Many Features Unrelated To The Patents-In-Suit. Google's Accused Products offer features and benefits that drive demand and contribute to their success independent of the claimed teachings of the Patents-in-Suit. These features and benefits include keyword-based search advertising, account management features, additional services for large advertisers, an effective return on investment, and an extremely fast display of advertisements (which has been achieved through Google's extensive infrastructure investment).

iv. Google's Investment In Infrastructure. In order to provide search results and targeted advertisements nearly instantaneously to Google's users, Google has made considerable investments in its software and hardware infrastructure. Google's investment in its infrastructure enables significant improvement in its search and advertising results delivery, allows for the storage and processing of large amounts of data, shortens Google's product development cycle, and allows Google to pursue innovations more cost effectively.

v. Google's Auction System. As early as 2002, when most online businesses were advertising in traditional ways, Google implemented an auction-based system for selling advertisements. Google's auction system is considered the "most successful business idea in history" and drives the accused advertising revenues independent of the claimed teachings of the Patents-in-Suit. Google's shift in 2002 from a pay-per-impression system to a pay-per-click system, combined with its use of an auction system that incorporated both bid amount and predicted click-through rate in the ranking of ads, was a significant improvement over prior search advertising systems.

b. The Claimed Benefits Of The Patents-In-Suit To Google Are Limited. At the hypothetical negotiation, Google would have emphasized that the claimed benefits Google would receive from a license to the Patents-in-Suit would be limited.

i. [redacted]. Google and Lycos would have recognized that the Accused Functionality was limited [redacted]. Thus, the claimed benefits to Google of a license to the Patents-in-Suit would not extend beyond those associated with [redacted].

ii. [redacted]. Google and Lycos would have recognized that ad ranking and pricing were beyond the scope of the Patents-in-Suit and that the Accused Functionality [redacted].

iii. Specific Computation Of pCTR Not Covered By The Patents-In-Suit. Google and Lycos also would have recognized that significant contributions beyond a bare license to the Patents-in-Suit were required for Google to implement the Accused Products. A license to the Patents-in-Suit would not provide Google with any of the practical requirements for implementing the Accused Products or the Accused Functionality, including necessary hardware infrastructure or software programming. In particular, although the Accused Functionality relates to the [redacted], the actual specific computation of pCTR is not covered by the Patents-in-Suit, and a license to the Patents-in-Suit would not provide Google with the specific method of computing the pCTRs required to implement the Accused Functionality. Google and Lycos would be aware that even the use of the claimed invention of the Patents-in-Suit [redacted] was not specifically disclosed in the Patents-in-Suit; instead, the Patents-in-Suit simply refer to "filtering."

iv. Enhancements. Google and Lycos would have acknowledged that Google would make significant enhancements to the Accused Functionality beyond the claimed teachings of the Patents-in-Suit.

c. The Success Of Google's Search Advertising Systems Is Not Attributable To The Technology Claimed By The Patents-In-Suit. The filtering technology claimed by the Patents-in-Suit does not guarantee the success of a search advertising system asserted to practice the claims of the patents. For example, in addition to Google's search advertising systems, AOL's "Advertising.com Sponsored Listings" has been accused of infringing the Patents-in-Suit. However, there is a significant variation in the levels of success of different search advertising systems alleged to employ the same patented technology (i.e., Google's systems vs. AOL's). Thus, the success of the Google's search advertising systems is driven by Google-specific contributions.

d. Google's Strong Preference For A Lump-Sum Royalty Payment Structure. When Google enters into in-bound patent license agreements, Google prefers a lump-sum royalty payment structure. From an economic perspective, it would have been Google's position at the hypothetical negotiation that it is Google's products and efforts that create recurring value and revenue, and no nexus can be isolated between the claimed teachings of the Patents-in-Suit and Google's revenues. In addition, there would be a diminishment in the relative importance of the Accused Functionality over time as a result of Google's future expected contributions. These factors, among others, weigh in favor of a lump-sum royalty payment structure.[17]

Google's position at the hypothetical negotiation would have been known by the parties.

[17] Other considerations weighing in favor of a lump-sum royalty payment structure include, but are not limited to administrative ease, a reduction in the need to track use and generate reports, a reduction in the possibility of having to communicate confidential information, a reduction in the likelihood of disputes and budgeting certainty, *inter alia*.

C. Value Indicators Of The Patents-In-Suit

10. Based upon documentary evidence, deposition testimony, and the economic analyses presented throughout my report, indicators exist as to the value of the Patents-in-Suit.

11. Contemporaneous Value Indicators. Contemporaneous value indicators (i.e., around the time of the 2004 hypothetical negotiation) exist that are probative as to the value of the Patents-in-Suit. For example, in 2004, Google entered into a patent assignment and license agreement with [redacted]. Google paid [redacted] made by Google in this agreement represents the highest amount that Google paid in its patent license and patent acquisition agreements produced in this case. The timing of the agreement, royalty payment structure, and royalty amount are probative to Google's negotiating position.

12. Ex Post Indicators of Value. Ex post indicators of value and other economic/business considerations also exist. Ex post considerations can be informative as to the economic mindset of the parties at an earlier point in time (i.e., at the 2004 hypothetical negotiation) and can be informative as to the outcome of the hypothetical negotiation. I describe such ex post indicators of value and other economic / business considerations immediately below.

a. Offers To Purchase And Actual Sale Of Patents-in-Suit. Beginning at the end of 2008, Lycos received offers to purchase its entire patent portfolio. By 2011, the offers were no longer for the entire portfolio, but rather for one specific patent family that included the Patents-in-Suit. These offers evolved into a bidding process, which led to Lycos' sale of this patent family to Smart Search Labs (i.e., the predecessor to I/P Engine) in 2011 for [redacted].

i. Offers To Purchase Lycos' Entire Patent Portfolio. Towards the end of 2008, Lycos was contacted by Altitude Capital Partners, which expressed interest in purchasing Lycos' patent portfolio. At the time, Lycos' entire portfolio consisted of around 28 patents, as well as pending patent applications, covering a "[v]ariety of fields." Altitude conducted an "[e]xtensive due diligence" of Lycos' patent portfolio. [redacted]

ii. Offers To Purchase The Patent Family That Included The Patents-In-Suit. In the spring of 2011, Lycos was contacted by Mr. Staykov who had an interest in purchasing the family of patents that included the Patents-in-Suit. [redacted], but was the catalyst that began a bidding process among three parties: Mr. Staykov, Altitude, and Hudson Bay Capital (on behalf of Smart Search Labs). [redacted] The bidding process resulted in Lycos and Smart Search Labs entering a patent purchase and license agreement for Lycos' patent family on June 22, 2011 [redacted]. The patent family consists of 8 patents, including the '420 Patent and the '664 Patent. [redacted] lump-sum payment that resulted from the bidding process described above provides an *ex-post* market-related value indicator of the Patents-in-Suit and an indicator of Lycos' willingness to accept for its patent family that included the Patents-in-Suit.[20]

b. Google's Patent License And/Or Patent Acquisition Agreements. Google has produced a number of agreements in this matter. Of these agreements, nine are patent license agreements and/or patent acquisition agreements.[21] The nine such agreements have a lump-sum royalty payment structure. It is my understanding that the most technologically comparable of these nine agreements is [redacted]

[redacted]

[redacted] Eventually, negotiations with Altitude in 2009/2010 were delayed and halted because of [redacted] and sale of Lycos to Ybrant in 2010.

[20] The [redacted] lump-sum payment for the *sale* of this *patent family* overstates the value of a *license* to only the *Patents-in-Suit*.

[21] I have focused on these nine agreements because at the hypothetical negotiation, Google would have sought a non-exclusive, bare patent license without software, technology transfer, and/or cross licensing rights.

D. Acceptable Non-Infringing Alternatives

13. As discussed throughout my report, Google was founded as a search engine company. Google constantly innovates to improve the quality of its search and advertising results and would have had options to the use of the claimed teachings of the Patents-in-Suit at the time of the hypothetical negotiation with Lycos. Based upon a discussion with Dr. Ungar (Google's technical expert) and Google personnel, it is my understanding that at the time of the 2004 hypothetical negotiation, Google would have been able to discontinue the use of pCTR computed by Smart Ads [redacted].

14. Based upon discussions with Dr. Ungar and Google personnel, I understand that these options would be technically feasible and relatively easy to implement in the normal course of business (including in the normal course of software updating and maintenance). I understand that these options would be acceptable to Google, its advertisers, and its users. The efforts spent on software programming, testing, and roll-out would have been performed by software engineers that already were employed by Google and would not have resulted in incremental costs to Google.

E. Outcome Of The Hypothetical Negotiation

15. At the time of the hypothetical negotiation, Lycos and Google would have recognized the commonality of their respective negotiating positions. This commonality includes but is not limited to acknowledging (a) Google's substantial contributions (unrelated to the

Patents-in-Suit) to the Accused Products, (b) the limited benefits of the claimed teachings of the Patents-in-Suit to Google, (c) the significant benefits Lycos would derive from licensing to Google, (d) Lycos' lack of commercialization or licensing efforts related to the Patents-in-Suit, and (e) Lycos' business difficulties, *inter alia*.

16. Given the above stated qualitative and quantitative considerations, and an assessment of the *Georgia-Pacific* factors as presented throughout my report and as summarized in **Appendix A**, the likely outcome of the hypothetical negotiation between Lycos and Google would be a non-exclusive, freedom-to-operate, U.S. license to the Patents-in-Suit for a lump-sum royalty payment [redacted].

17. A [redacted] lump-sum royalty payment is consistent with the business and economic considerations discussed throughout my report. This royalty payment also is consistent with the value indicators related to the Patents-in-Suit, which include but are not limited to the following:

a. Google's lump-sum payment of [redacted] relating to its patent assignment and license agreement with [redacted] in 2004;[22]

b. Google's license agreement in December 2008 with [redacted]

c. the [redacted]

d. Lycos' sale of the patent family that includes the Patents-in-Suit to Smart Search Labs for a [redacted] lump-sum payment in June 2011;[23] and

[22] Using the [redacted] lump-sum payment made by Google in its agreement with [redacted] as an indicator of value is a conservative measure for at least the following reasons: [redacted] By comparison, a license to the Patents-in-Suit only would provide Google rights to two patents and would not give Google ownership of any patent assets (as would a patent purchase). In light of the foregoing considerations, [redacted] overstates the value that Google would have attributed to a license to the Patents-in-Suit at the time of the hypothetical negotiation with Lycos.

e. the availability of acceptable non-infringing options open to Google.

F. Evaluation Of I/P Engine's Claimed Royalty Damages As Presented By Dr. Becker

18. I/P Engine submitted the expert report of Dr. Becker in support of its claimed damages. I am of the opinion that Dr. Becker's analysis does not provide the trier-of-fact with guidance as to a reasonable royalty payment in this matter for at least the following reasons.

a. Claimed Royalty Payment Structure. Dr. Becker's claimed royalty payment structure is incorrect.

i. Dr. Becker relied upon flawed arguments to support a running royalty payment structure.

ii. Dr. Becker failed to appropriately consider [redacted], Google's patent licensing/acquisition agreements, and Google's significant contributions to the commercial success of Accused Products, *inter alia.*

b. Claimed Royalty Rate. Dr. Becker overstated the claimed royalty rate.

i. Dr. Becker relied upon Overture's license agreements related to its '361 Patent, which are not probative in this case.

ii. Under his own methodology, Dr. Becker failed to use Overture's settlement agreement with Google to perform a reasonableness check on his claimed royalty damages.

c. Claimed Royalty Base. Dr. Becker overstated the claimed royalty base.

i. Dr. Becker failed to limit the claimed royalty base to U.S. accused revenues.

ii. Dr. Becker's apportionment of the accused revenues to the Patents-in-Suit is overstated and unreliable.

d. Claimed Royalty Damages. Dr. Becker's claimed royalty damages are unreasonable.

i. Dr. Becker failed to place proper weight on Lycos' sale of its patent family (including the Patents-in-Suit) to Smart Search Labs.

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[23] [redacted]

ii. Dr. Becker's claimed royalty damages fail a reasonableness check when compared to the sales price of the entire Lycos company to Daum Communications.

iii. Dr. Becker's claimed royalty damages fail a reasonableness check when compared to the lump-sum amounts Google paid in certain of its in-bound patent license and/or acquisition agreements.

19. Each of the above deficiencies in Dr. Becker's analysis is described in detail later in my report.

III. QUALIFICATIONS AND EXPERIENCE

20. I am a Managing Principal at Analysis Group, Inc. ("AG"). AG provides economic, financial, and business strategy consulting to its clients and specializes in the interpretation of economic and financial data and the development of economic and financial models. Nationally, AG consists of approximately 500 professionals who specialize in, among other things, the fields of economics, accounting, finance, statistics, and strategy consulting.

21. My primary responsibility at AG is to provide economic and financial consulting services to clients. Throughout my career I have provided financial consulting services in intellectual property cases, antitrust cases, breach of contract cases, fraud-related cases, business tort cases, business interruption cases, employment / loss of earnings matters, lender liability cases, and securities-related cases. I have provided expert testimony in deposition and trial settings numerous times.

22. I specialize in the application of economic principles to complex financial disputes, and I am generally retained in cases requiring economic and financial analyses. Financial models I have constructed or evaluated in the past have contained as components revenue analyses, cost analyses, assessments of capacity, assessments of profitability, assessments of reasonable royalties, and assessments of the competitive business environment. I also

have evaluated various claims of economic value using peer group comparisons and/or discounted cash flow analyses relating to projected future earnings streams. During the course of my career, I have frequently performed financial analyses using large databases of information and complex computer models.

23. I received my B.A. in Economics from the University of Notre Dame in 1977, my M.A. in Economics from the University of Southern California in 1979, and my Ph.D. in Economics from Arizona State University in 1983. Attached as **Exhibit 1** is a true and correct copy of my current resume. A listing of publications I have authored is contained in my resume. Attached as **Exhibit 2** is my trial and deposition testimony experience. My business address is Analysis Group, Inc., Park Place Center, 2911 Turtle Creek Blvd., Suite 600, Dallas, Texas, 75219.

24. AG is being compensated based upon hours incurred and the hourly rates of the personnel involved. Payment to AG is not contingent upon my findings or the outcome of this matter. AG is being compensated at a rate of $550 per hour for my time. Hourly rates for other staff at AG working on this matter range from $195 to $350 per hour, depending upon the level and experience of the staff involved.

IV. <u>FACTS, DATA, AND INFORMATION RECEIVED</u>

25. The facts, data, and information available to me in forming my opinions are set forth in **Exhibit 3** or elsewhere in my report (including exhibits). Examples of the types of information available to me include the following:

a. <u>legal documents</u> (e.g., Complaint; I/P Engine's Preliminary Disclosure of Asserted Claims and Pre-Discovery Infringement Contentions; I/P Engine's interrogatories and Defendants' responses);

b. <u>patents</u> (i.e., U.S. Patent No. 6,314,420 and U.S. Patent No. 6,775,664);

c. deposition transcripts (e.g., deposition of Jonathan Alferness taken on June 21, 2012 and associated exhibits; deposition of Andrew Lang taken on May 17, 2012 and associated exhibits; deposition of Mark Blais taken on July 31, 2012 and associated exhibits);

d. expert reports (i.e., Expert Report of Stephen L. Becker, Ph.D. dated July 25, 2012; Expert Report of Ophir Frieder on Infringement of U.S. Patent Nos. 6,314,420 and 6,775,664 dated July 25, 2012; Report of Defendants' Expert Lyle H. Ungar, Ph.D., Concerning Invalidity of Claims 10, 14, 15, 25, 27, and 28 of U.S. Patent No. 6,314,420 and Claims 1, 5, 6, 21, 22, 26, 28, and 38 of U.S. Patent No. 6,775,664; and Supplemental Report of Defendants' Expert Lyle H. Ungar, Ph.D., Concerning Invalidity of Claims 10, 14, 15, 25, 27, and 28 of U.S. Patent No. 6,314,420 and Claims 1, 5, 6, 21, 22, 26, 28, and 38 of U.S. Patent No. 6,775,664);

e. documents produced by I/P Engine (e.g., patent purchase and license agreement between Smart Search Labs and Lycos; partial settlement agreement with AOL; news articles);

f. documents produced by Google (e.g., license agreements; financials; business plans; marketing documents);

g. documents produced by other Defendants (e.g., services agreements between Google and Target; services agreements between Google and Gannett; services agreements between Google and IAC);

h. documents produced by Lycos (e.g., settlement license agreements [redacted] and

i. information independently obtained (e.g., SEC filings; information from Defendants' websites; information related to Lycos; various patents).

26. Contained in **Exhibit 4** are the names, positions, and company affiliations of each of the deponents whose deposition transcripts are cited in the text of my report. In addition, during the preparation of my expert report, discussions were held with the Defendants' technical expert and Google personnel as presented in **Table 2**.

Table 2
Interviews And Discussions

Company	Individual	Topic
Google	Mr. Jonathan Alferness, Director of Product Management	Accused Functionality, Google's non-infringing alternatives
Google	Mr. Nick Fox, Vice President of Product Management	Google's non-infringing alternatives
Google	Mr. James Maccoun, Patent Counsel	Google's licensing practices and license agreements
Defendants' technical expert	Dr. Lyle Ungar	Accused Functionality, Google's non-infringing alternatives, Overture's '361 Patent, acquired patents in Google's agreement with [redacted]

27. My analyses and opinions are based upon the information available to date and are contained throughout this narrative to my report and the associated exhibits. I reserve the ability to review documents, depositions transcripts, expert reports, or other information still to be produced by the Parties and to supplement my opinions based upon that review, if appropriate. I also reserve the ability to use demonstrative exhibits and/or other information at trial to explain and illustrate my opinions.

V. OVERVIEW OF RELEVANT ENTITIES

A. I/P Engine, Inc. ("I/P Engine")

28. I/P Engine was incorporated on June 14, 2011 under the name Smart Search Labs, Inc. I/P Engine is owned by Innovate/Protect, formerly known as Labrador Search Corporation.[24] Upon formation of Innovate/Protect on June 8, 2011,[25] the company acquired from Lycos eight patents, including the Patents-in-Suit, relating to information

[24] Innovate/Protect, Inc. Executive Summary dated September 2011. (IPE0017715 – 720 at 718.)

[25] Innovate/Protect, Inc. Executive Summary dated September 2011. (IPE0017715 – 720 at 718.)

filtering and search technologies.[26] [redacted]

29. [redacted]

B. <u>Lycos, Inc. ("Lycos")</u>

30. Lycos was established as a search engine in 1995.[30] The company's search and indexing technology was developed primarily by Dr. Michael Mauldin as a faculty member at Carnegie Mellon University.[31] Lycos went public with an initial public offering on April 2, 1996.[32] In 1998, the company acquired WiseWire, whose founding team included Mr. Lang and Mr. Kosak (i.e., co-inventors of the Patents-in-Suit), for $39.75 million.[33] Mr.

[26] Innovate/Protect, Inc. Executive Summary dated September 2011. (IPE0017715 – 720 at 715.) *See also*, Complaint, p. 4.

[27] Deposition of Andrew Lang taken on May 17, 2012 ("Lang Deposition"), p. 70 and Deposition of Alexander Berger taken on July 11, 2012, pp. 83 – 87.

[28] Lang Deposition, p. 48.

[29] Innovate/Protect, Inc. Executive Summary dated September 2011. (IPE0017715 – 720 at 718.) (Bracketed text added for clarification.)

[30] "Company Overview." (http://info.lycos.com/about/company-overview, viewed on July 30, 2012.)

[31] Lycos, Inc. Form 10-K for the fiscal year ended July 31, 1996, p. 11.

[32] Lycos, Inc. Form 10-K for the fiscal year ended July 31, 1996, p. 15.

[33] "Lycos Pushes Into the Portal Niche" (http://news.cnet.com/2100-1001-210739.html&st ne.fd.mdh, viewed on July 31, 2012) and Complaint filed September 15, 2011 ('Complaint"), pp. 4 – 5. According to the Complaint, Mr. Lang formed Empirical Media Corporation, which was later renamed WiseWire. Mr. Kosak was "the first technologist hired into WiseWire's founding team."

Lang and Kosak joined Lycos after the acquisition.[34] As part of the acquisition, Lycos obtained rights to U.S. Patent Application No. 08/627,436,[35] an application to which the Patents-in-Suit are continuations.[36]

31. In May 2000, Lycos reached an agreement to be acquired by Terra, a Spanish Internet service provider, for $12.5 billion.[37] In August 2004, Terra agreed to sell Lycos to the South Korean website operator Daum Communications Corporation ("Daum") for $95 million.[38] In August 2010, Daum sold Lycos to Ybrant Digital ("Ybrant"), and Indian end-to-end provider of digital marketing solutions, for $36 million.[39]

C. Defendants

1. Google Inc. ("Google")

32. Google Inc. ("Google") was founded by Mr. Sergey Brin and Mr. Larry Page in September 1998 with the mission to "organize the world's information and make it universally accessible and useful."[40] Google is a "global technology leader focused on improving the ways people connect with information" and provides value to users by

[34] Complaint, pp. 5 – 6. Mr. Lang testified that he stayed at Lycos for approximately one year after the acquisition. (Lang Deposition, p. 108.)

[35] Disclosure Schedule to the Merger Agreement by and Among Lycos, Inc., Wise Acquisition Corp., and Wisewire Corporation dated April 30, 1998. (LYCOS 0000246 – 321 at 285.) U.S. Patent Application No. 08/627,436 became U.S. Patent No. 5,867,799. (U.S. Patent No. 5,867,799.)

[36] U.S. Patent Nos. 6,314,420 and 6,775,664.

[37] "Lycos Bought in First Foreign Portal Deal." (http://news.cnet.com/2100-1023-240509.html, viewed on July 31, 2012.)

[38] "South Korean Company Buys Lycos." (http://www.wired.com/techbiz/media/news/2004/08/64431, viewed on July 31, 2012.)

[39] "Ybrant Digital Buys Lycos for $36 Million." (http://www.businesswire.com/portal/site/home/permalink/?ndmViewId=news_view&newsId=20100816005874&newsLang=en, viewed on July 31, 2012.)

[40] About Google. (http://www.google.com/about/company/, viewed on August 22, 2012.)

"developing products that quickly and easily find, create, organize and share information."[41]

33. Google's business focuses on search, advertising (i.e., online advertising on Google Search, Google Display, Google Mobile, and Google Local), operating systems and platforms (i.e., Android mobile software platform, Google Chrome Operation System, Google TV, and Google Books platform), and enterprise (i.e., technology for business settings through Google Apps including but not limit to Gmail, Google Docs, Google Calendar, and Google Sites).[42]

34. Google generates revenue primarily by delivering online advertising.[43] The advertising revenues are from the advertisements placed on Google's own web site and the web sites of third parties (i.e., non-Google web sites).[44] Prior to implementing the accused Smart Ads system in 2004, Google's advertising revenues comprised 94% and 97% of Google's total revenues in 2002 and 2003 respectively.[45]

35. Google invests a significant amount of resources to research and development and the marketing of its products. As of December 31, 2004, Google had more than 3000 employees, with approximately 33% of its employees dedicated to research and development and approximately 48% of its employees supporting its sales and marketing efforts.[46]

[41] Google Inc. Form 10-K for the year ending December 31, 2004, p. 1.

[42] Reuters – Google Inc. Profile. (http://www.reuters.com/finance/stocks/companyProfile?symbol=GOOG.O, viewed on August 22, 2012.)

[43] Reuters – Google Inc. Profile. (http://www.reuters.com/finance/stocks/companyProfile?symbol=GOOG.O, viewed on August 22, 2012.)

[44] Google Inc. Form 10-K for the year ending December 31, 2004, p. 3.

[45] Google Inc. Form 10-K for the year ending December 31, 2004, p. 23.

[46] Google Inc. Form 10-K for the year ending December 31, 2004, p. 14.

2. AOL, Inc. ("AOL")

36. AOL is "a leading global web services company with a suite of brands and offerings and a substantial worldwide audience."[47] The company "operate[s] one of the largest internet subscription access services in the United States, with 3.3 million domestic AOL-brand access subscribers as of December 31, 2011."[48] AOL is "focused on attracting and engaging internet consumers by creating high quality content, products and services at scale and providing valuable online advertising services on both [AOL's] owned and operated properties and third-party websites."[49]

37. With regard to online advertising, AOL's "mission is to provide an open and transparent advertising system that is easy-to-use and offers [AOL] publishers and advertisers unique and valuable insights."[50] The company "generate[s] advertising revenues from AOL Properties through the sale of display advertising and search and contextual advertising," as well as through the sale of advertising on third-party websites."[51] As part of its online advertising system, "AOL uses Google's search advertising system," "a white-label, modified version of Google's search advertising system," and AOL's own search advertising system called "Advertising.com Sponsored Listings."[52]

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[47] AOL Inc. form 10-K for the fiscal year ended December 31, 2011 ("AOL 2011 10-K"), p. 2.

[48] AOL 2011 10-K, p. 2.

[49] AOL 2011 10-K, p. 2.

[50] AOL 2011 10-K, p. 3.

[51] AOL 2011 10-K, p. 3.

[52] Complaint, pp. 11 – 12.

3. IAC Search & Media, Inc. ("IAC")

38. IAC was incorporated under the name Silver King Broadcasting Company, Inc., as a subsidiary of Home Shopping Network, Inc., in July 1986.[53] Through various restructurings, the company became known as IAC Search & Media, Inc. and "transformed itself from a hybrid media/electronic retailing company into a leading internet company."[54] IAC's "mission is to harness the power of interactivity to make daily life easier and more productive for people all over the world."[55] In order to accomplish this goal, "IAC operates more than 50 leading and diversified Internet businesses across more than 30 countries."[56] The company's array of businesses fall "within the following segments: Search, Match, ServiceMagic and Media & Other."[57]

39. One of the online businesses run by IAC is Ask.com.[58] Through Ask.com, IAC offers "general search services, as well as question and answer services that provide direct answers to natural-language questions."[59] "The Search segment's revenue consists principally of advertising revenue, which is derived primarily from the display of paid listings, as well as from the display of other advertising in connection with the provision of search and other services."[60] The "majority of the paid listings" IAC displays "are supplied to [IAC] by Google pursuant to a paid listing supply agreement with Google."[61]

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[53] IAC/InterActiveCorp Form 10-K for the fiscal year ended December 31, 2011 ("IAC 2011 10-K"), p. 2.

[54] IAC 2011 10-K, p. 2.

[55] IAC 2011 10-K, p. 2.

[56] IAC 2011 10-K, p. 2.

[57] IAC 2011 10-K, p. 2.

[58] IAC 2011 10-K, p. 4.

[59] IAC 2011 10-K, p. 5.

[60] IAC 2011 10-K, p. 4.

[61] IAC 2011 10-K, p. 4.

4. Gannett Company, Inc. ("Gannett")

40. Gannett was founded in 1906 by Frank E. Gannett and associates.[62] "Gannett is a leading international media and marketing company."[63] The company "deliver[s] content and services across an integrated, multi-platform portfolio," which includes "iconic national brands" such as "USA TODAY and CareerBuilder, as well as [its] unique local brands in more than 100 communities."[64] Through its "multiple platforms including Internet, mobile, tablet, print publications and TV stations," Gannett provides its "consumers with the information they want and connects them to their communities of interest."[65] Gannett's consumers and marketers have access to the company's "uniquely powerful and comprehensive portfolio of offerings," which includes "properties [that] cover a wide range of geographies, demographics and interest areas."[66] This vast portfolio of offerings bolsters "82 daily U.S. publications," "23 television stations," and "hundreds of publishing and TV web sites."[67]

41. Gannett run websites, such as USA Today.com, display advertisements that "are generated using Google's search advertising systems, as part of the Google Network."[68]

5. Target Corporation ("Target")

42. Target was incorporated in 1902 in the state of Minnesota.[69] Target offers "both everyday essentials and fashionable, differentiated merchandise at discounted prices."[70]

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[62] Gannett Co, Inc. Form 10-K for the fiscal year ended December 25, 2011 ("Gannett 2011 10-K"), p. 3.

[63] Gannett 2011 10-K, p. 3.

[64] Gannett 2011 10-K, p. 3. (Bracketed text added for clarification.)

[65] Gannett 2011 10-K, p. 3.

[66] Gannett 2011 10-K, p. 3. (Bracketed text added for clarification.)

[67] Gannett 2011 10-K, p. 3.

[68] Complaint, p. 17.

The company's "strong supply chain and technology infrastructure," "devotion to innovation," and "disciplined approach to managing [its] current business and investing in future growth" have enabled Target to "deliver a shopping experience that is preferred by [its] customers."[71] Target makes sales through its retail stores as well as its "fully integrated online business."[72] The company's "online presence is designed to enable guests to purchase products seamlessly either online or by locating them in one of [Target's] stores with the aid of online research and location tools."[73]

43. Target's website displays advertisements that "are generated using Google's search advertising systems, as part of the Google Network."[74]

VI. PATENTS-IN-SUIT AND THE ACCUSED FUNCTIONALITY

A. The '420 And '664 Patents

44. The '420 Patent, entitled "Collaborative/Adaptive Search Engine," was issued on November 6, 2001 and assigned to Lycos. The '664 Patent, entitled "Information Filter System and Method for Integrated Content-Based and Collaborative/Adaptive Feedback Queries," was issued on August 10, 2004 and assigned to Lycos. The '664 Patent is a continuation of the '420 Patent.[75]

[69] Target Corporation Form 10-K for the fiscal year ended January 28, 2012 ("Target 2011 10-K"), p. 2.

[70] Target 2011 10-K, p. 2.

[71] Target 2011 10-K, p. 2. (Bracketed text added for clarification.)

[72] Target 2011 10-K, p. 2.

[73] Target 2011 10-K, p. 2. (Bracketed text added for clarification.)

[74] Complaint, p. 16.

[75] U.S. Patent No. 6,775,664.

45. It is my understanding that the Patents-in-Suit generally "describe systems and methods for using a combination of content-based and collaborative filtering to filter search results."[76] The abstract of the '420 Patent provides the following description.[77]

> A search engine system is provided for a portal site on the internet. The search engine system employs a regular search engine to make one-shot or demand searches for information entities which provide at least threshold matches to user queries. The search engine system also employs a collaborative/content-based filter to make continuing searches for information entities which match existing wire queries and are ranked and stored over time in user-accessible, system wires corresponding to the respective queries. A user feedback system provides collaborative feedback data for integration with content profile data in the operation of the collaborative/content-based filter. A query processor determines whether a demand search or a wire search is made for an input query.

46. It is my understanding that claims 10, 14, 15, 25, 27, and 28 of the '420 Patent are being asserted in this matter.[78] It also is my understanding that claims 1, 5, 6, 21, 22, 26, 28, and 38 of the '664 Patent are being asserted in this matter.[79]

B. <u>Accused Functionality</u>

47. It is my understanding that I/P Engine has accused in this matter a functionality relating to [redacted]. While Defendants disagree with the following assessment, Dr. Frieder (I/P Engine's technical expert) described the accused functionality as follows.[80]

> Defendants' systems infringe the asserted claims whenever they filter advertisements in response to a search query from a user using pCTR

[76] Report of Defendants' Expert Lyle H. Ungar, Ph.D. Concerning Invalidity dated July 25, 2012, p. 7.

[77] U.S. Patent No. 6,314,420.

[78] Expert Report of Ophir Frieder on Infringement dated July 25, 2012 ("Frieder Report"), pp. 9 – 10. *See also*, Plaintiff I/P Engine, Inc's Third Preliminary Disclosure of Asserted Claims and Infringement Contentions as to Google AdWords and Google AdSense for Search, pp. 1 – 2.

[79] Frieder Report, p. 10. Claim 38 of the '664 Patent was omitted from Dr. Becker's list of asserted claims. (Becker Report, p. 12.)

[80] Frieder Report, p. 25. (Bracketed text added for clarification.)

> [predicted click-through rates] (a value which combines data relating to the relevance of the advertisement content to the query with data relating to feedback provided by other users about the advertisement's relevancy).

48. Dr. Frieder described four allegedly infringing processes performed by Google, including [redacted]."[81] According to Dr. Frieder, the various accused steps performed by Google are [redacted]."[82]

49. It is my understanding that [redacted] predicted click-through rates ("pCTR"s) computed by Google's Smart Ads Serving System ("Smart Ads"). Smart Ads is a machine-learning system that [redacted][85] I/P Engine alleges that these pCTRs "combine[] data relating to the relevance of the advertisement content to the query with data relating to feedback provided by other users about the advertisement's relevancy."[86]

50. It is my understanding that Smart Ads' *specific computation* of pCTRs (in isolation) is not accused of infringing the Patents-in-Suit. Rather, I understand the accused functionality is [redacted] using pCTR (the "Accused Functionality"). Furthermore, I understand that pCTRs computed by Smart Ads play a broader role in Google's Accused Products beyond their use [redacted]

[81] Frieder Report, pp. 19 – 21 and 25.

[82] Frieder Report, p. 15.

[83] Deposition of Jonathan Alferness taken on June 21, 2012 ("Alferness Deposition"), pp. 15 and 17 – 18.

[84] [redacted] (Alferness Deposition p. 17.)

[85] Alferness Deposition, p. 15.

[86] Frieder Report, p.25.

[redacted] Generally, I understand pCTRs also are used (in combination with advertisers' bids and other factors) for *ranking* advertisements and for determining ad *pricing*.[87, 88]

VII. GOOGLE'S ACCUSED PRODUCTS AND SERVICES

51. It is my understanding I/P Engine has accused the following Google products/services of infringing the asserted claims of the Patents-in-Suit ("Accused Products"): (a) Google AdWords, (b) Google AdSense for Search, and (c) Google AdSense for Mobile Search.[89]

A. AdWords

52. AdWords is Google's main advertising program that was introduced in October 2000.[90] In October 2002, Google launched a new version of AdWords that used an auction-based system to sell Internet advertising in connection with search results.[91] To participate in keyword-based advertising on AdWords, an ad, a bid, and a keyword the advertiser wishes to associate with its ad text must be submitted.[92] The advertiser typically provides its bid expressed as the maximum cost-per-click.[93] AdWords features an automated,

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[87] Ad System Overview, dated July 2004. (G-IPE-0009726 – 750 at 737.) *See also*, Smartass pCTR Model Reliability Design, dated April 23, 2010 (G-IPE-0018963 – 968 at 963) and *Bid for Position, LLC v. AOL Inc. et al.*, 601 F.3d 1311 – 1313 (Fed. Cir. 2010).

[88] The Accused Products use an auction system to place advertisements above and alongside search results. [redacted] Advertisement *ranking* and *pricing* are determined by the auction (based upon a combination of pCTR, advertiser bids, and other factors). (Ad System Overview, dated July 2004 (G-IPE-0009726 – 750 at 737); Smartass pCTR Model Reliability Design, dated April 23, 2010 (G-IPE-0018963 – 968 at 963 and 967); and *Bid for Position, LLC v. AOL Inc. et al.*, 601 F.3d 1311 – 1313 (Fed. Cir. 2010).)

[89] Plaintiff I/P Engine, Inc's Third Preliminary Disclosure of Asserted Claims and Infringement Contentions as to Google AdWords and Google AdSense for Search, pp. 1 – 2. *See also*, Frieder Report, pp. 10 – 11.

[90] "Our History in Depth." (http://www.google.com/about/company/history/, viewed on August 1, 2012.)

[91] "Ad System Overview." (G-IPE-0009726 – 750 at 727) and Trial Testimony of Jeff Huber, August 5, 2010, Bright Response v. Google et al., pp. 23 – 26 (G-IPE-0222950 – 990 at 963 – 966).

[92] *Bid for Position, LLC v. AOL Inc. et al.*, 601 F.3d 1311, 1312 (Fed. Cir. 2010).

[93] *Bid for Position, LLC v. AOL Inc. et al.*, 601 F.3d 1311, 1312 (Fed. Cir. 2010).

online signup process that enables advertisers to implement advertisement campaigns that go to Google properties.[94] Advertisers using Google AdWords range from small businesses to many of the world's largest global enterprises.[95] Advertisements placed through Google AdWords are priced through Google's auction system which allows advertisers to "manage expenditures by setting a maximum daily budget and determining how much they are willing to pay whenever a user clicks on an ad."[96] Ads are ranked for display in AdWords based on the maximum CPC bid, the pCTR, and other factors.[97] This improves the experience for both the advertiser and the end-user.

53. AdWords enables advertisers to present advertisements "to people at the precise moment those people are looking for information related to what the advertiser has to offer."[98] Under AdWords' cost-per-click system, advertisers pay Google only when a user clicks on one of the text-based ads that appears next to the search results on Google's website, or next to the search results or content on Google Network members' sites. By allowing advertisers to choose keywords to associate with their ads, and pay on a cost-per-click basis, AdWords allows advertisers to market their products and services while "achiev[ing] greater cost-effectiveness" and increasing "[r]eturn on [i]nvestment."[99]

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[94] "Ad System Overview." (G-IPE-0009726 – 750 at 727 and 730.)

[95] Google 2004 10-K, p. 2.

[96] Google 2004 10-K, p. 3.

[97] *Bid for Position, LLC v. AOL Inc. et al.*, 601 F.3d 1311, 1312 – 13 (Fed. Cir. 2010).

[98] Google 2004 10-K, p. 7.

[99] Google 2004 10-K, p. 3 and *Bid for Position, LLC v. AOL Inc. et al.*, 601 F.3d 1311, 1312 – 13 (Fed. Cir. 2010).

B. AdSense For Search

54. Google AdSense, which was introduced in the first quarter of 2002,[100] allows advertisers to place advertisements on third-party web sites. "Thousands of third-party web sites that comprise [the] Google Network use Google AdSense to deliver relevant ads that generate revenue and enhance the user experience."[101] Google shares "most of the revenue generated" through such advertisements with the third-party web sites.[102] Google AdSense is comprised of multiple products, including but not limited to AdSense for Search and AdSense for Content.[103]

55. It is my understanding that only AdSense for Search is being accused in this matter. AdSense for Search distributes advertisements together with search results on Google Network members' sites.[104]

C. AdSense For Mobile Search

56. Google AdSense for Mobile Search was introduced in 2009.[105] Similar to AdSense for Search, AdSense for Mobile Search allows "[m]obile operators and website owners [to] share in the ad revenue generated by searches originating from their sites."[106]

[100] Google 2004 10-K, p. 22.

[101] Google 2004 10-K, p. 1.

[102] Google 2004 10-K, p. 3.

[103] Google 2004 10-K, pp. 8 – 9. With AdSense for Content, Google uses "automated technology to analyze the meaning of the content" on Google Network members' sites and "serve relevant ads based on the meaning of such content." (Google Inc. Form 10-K for the fiscal year ended December 31, 2006, pp. 38 – 39. (G-IPE-0865258 – 385 at 313 – 314.))

[104] "Ad System Overview." (G-IPE-0009726 – 750 at 726 - 727 and 730 – 731.)

[105] "Calling all Carriers – Introducing AdSense for Mobile Search." (http://googlemobile.blogspot.com/2009/02/calling-all-carriers-introducing.html, viewed on August 1, 2012.)

[106] "Calling all Carriers – Introducing AdSense for Mobile Search." (http://googlemobile.blogspot.com/2009/02/calling-all-carriers-introducing.html, viewed on August 1, 2012.)

VIII. PATENT INFRINGEMENT ROYALTY DAMAGES

A. No Less Than A Reasonable Royalty

57. Regarding patent infringement damages, 35 U.S.C. § 284 states:

> [u]pon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

Consequently, patent infringement damages can be calculated based upon lost profits, a reasonable royalty, or a combination of both. It is my understanding that I/P Engine is claiming royalty damages in this matter.[107]

B. Hypothetical Negotiation Framework And The *Georgia-Pacific* Factors

58. In a patent infringement matter where royalty damages are being claimed, one generally accepted approach for determining the amount of the royalty payments is to assume that in the absence of the alleged infringement, the parties would have negotiated a license to the patent or patents in question. This assumed negotiation is called a hypothetical negotiation. In the current context, a hypothetical negotiation framework assumes Lycos and Google would have undertaken negotiations for a license to the Patents-in-Suit as a willing licensor and willing licensee, respectively, with each having reasonable knowledge and reasonable expectations concerning the relevant facts.

59. The hypothetical negotiation construct is a framework for simulating the negotiations that would have occurred between a willing licensor and a willing licensee preceding the time of the first alleged infringement (or, from a business perspective, at the time the alleged infringer would have needed a license to not violate the patent infringement laws). Thus, the hypothetical negotiation framework facilitates the determination of a reasonable

[107] Becker Report, pp. 5 – 6.

royalty payment which would have been agreeable to both parties in the absence of the alleged infringement.

60. The hypothetical negotiation is assumed to culminate in the parties reaching an agreement as to a reasonable royalty payment. The hypothetical licensor does not necessarily receive the royalty amount it asks for and the hypothetical licensee does not necessarily pay the royalty amount it offers; rather, the hypothetical negotiation framework is intended to simulate the outcome of a negotiation between the parties. Therefore, the negotiated royalty payment is determined based upon full consideration of the relevant facts that are important and germane to prudent negotiators.

61. The approach requires the determination of the royalty payment structure (e.g., either a lump-sum payment or a running royalty rate) and the royalty amount that would have been agreed upon by the parties. The non-exclusive *Georgia-Pacific* factors assist in determining the economic pressures that would have been present during the hypothetical negotiation. These economic pressures dictate the royalty payment structure and exert either upward or downward pressure on the royalty payment that would have been agreed upon by the parties.

62. The hypothetical negotiation framework as applied to the facts of this dispute utilizes the following assumptions, *inter alia*:

a. the Patents-in-Suit are valid, enforceable, and infringed (although this is denied by each Defendant);

b. Lycos and Google would have entered into a hypothetical negotiation with the intention of negotiating a license that would provide Google with the freedom to operate its business using the technology allegedly covered by the Patents-in-Suit;

c. Lycos and Google would have negotiated a license that would cover not only Google but also Google's partners such as AOL, IAC, Gannett, and Target; and

d. Lycos and Google would have undertaken negotiations for a license to the Patents-in-Suit with each having reasonable knowledge and reasonable expectations concerning relevant facts.

C. Hypothetical Negotiation Date And Parties[108]

63. The hypothetical negotiation generally is accepted to occur preceding the date of the alleged first infringement (or, from a business perspective, prior to the time the alleged infringer would have needed a license to not violate the patent infringement laws). In addition, the hypothetical negotiation generally is accepted to occur between the owner (or assignee) of the patent(s) at the time of the alleged first infringement and the potential licensee(s).

64. It is my understanding that Google began [redacted] using Smart Ads' pCTR in or around March 2004.[109] At this time, the Patents-in-Suit were owned by Lycos.[110] Thus, the hypothetical negotiation for a license to the Patents-in-Suit would have taken place in or around March 2004 between Lycos and Google. (*See* **Exhibit 5** for a timeline of events.)

IX. LYCOS' NEGOTIATING POSITION WITH GOOGLE

65. In this section of my report, I evaluate Lycos' negotiating position with Google at the hypothetical negotiation. As a requirement of the hypothetical negotiation construct, it is

[108] This section is related to *Georgia-Pacific* factors 3 and 15 and is summarized in **Appendix A**.

[109] Google's first experiment with AdWords using SmartAds pCTR [redacted] was on March 9, 2004. [redacted] Google launched AdWords using Smart Ads pCTR [redacted] 50% of users on June 30, 2004 and 90% of users by July 1, 2004. [redacted] At the [redacted]

[110] On June 22, 2011, Lycos sold eight patents, including the Patents-in-Suit, to Smart Search Labs (i.e., the former name of I/P Engine). (Patent Purchase and License Agreement between Smart Search Labs and Lycos dated June 22, 2011. (IPE 0013519 – 545 at 519 and 542.)) From the issuance of the Patents-in-Suit to the date of the sale to I/P Engine on June 22, 2011, Lycos was the assignee of the Patents-in-Suit.

assumed that the Patents-in-Suit are valid and enforceable. It also is assumed that Lycos would have asserted that any company (e.g., the Defendants) wishing to implement an online search advertising platform utilizing filtering technology in accordance with the claimed teachings of the Patents-in-Suit would need a license from Lycos.[111]

66. Based upon documentary evidence, deposition testimony, and economic analyses, the following conclusions can be reached with respect to Lycos' negotiating position with Google.

a. Lycos would be aware of the limited benefits associated with the asserted claims of the Patents-in-Suit.

b. Lycos had not undertaken any commercialization or licensing efforts specifically related to the Patents-in-Suit.

c. Google would be receiving only a bare (or naked) patent license.

d. Lycos was experiencing business difficulties at the time of the hypothetical negotiation.

e. Lycos would benefit considerably from licensing the Patents-in-Suit to Google.

f. The offers Lycos received for its entire patent portfolio, as well as the bidding process and final sale of the patent family that included the Patents-in-Suit to Smart Search Labs, provide *ex-post* indications of the value of the Patents-in-Suit.

g. Lycos' willingness to accept a lump-sum payment structure [redacted]

A. <u>Limited Benefits Associated With The Asserted Claims</u>[112]

67. At the hypothetical negotiation with Google, it would have been Lycos' position that the purpose of the claimed invention was "<u>to make network searches for information entities relevant to user queries</u>, with collaborative feedback data and content-based data and

[111] While Google (and the other Defendants) deny these assertions, the assertions are assumed (as required) within the construct of the hypothetical negotiation.

[112] This section is related to *Georgia-Pacific* factors 9, 10, 11, 13, and 15 and is summarized in **Appendix A**.

adaptive filter structuring, being used in filtering operations to produce significantly improved search results."[113] However, Lycos would have acknowledged at the time of the hypothetical negotiation that Google had achieved significant commercial success as a search engine company prior to the introduction of the Accused Functionality. Lycos would have recognized that Google continued to innovate and improve the quality of its search results independently of the claimed teachings of the Patents-in-Suit.

68. Lycos would have been aware that Google used an auction-based system for selling advertisements. Also, the Accused Functionality was limited to Google's use of certain [redacted].[114] Lycos would have been aware that the benefits to Google of a license to the Patents-in-Suit would not extend beyond those associated with [redacted] In particular, Lycos would have recognized that ad ranking and pricing were determined by the results of the auction and were beyond the scope of the Accused Functionality.

69. Lycos also would have acknowledged that although the Accused Functionality includes [redacted], the specific computation of pCTR is not covered by the Patents-in-Suit. Therefore, Lycos would have recognized that a license to the Patents-in-Suit would not provide Google with a method of computing the pCTRs required to implement the Accused Functionality. A license to the Patents-in-Suit would not have provided any guidance as [redacted]

[113] U.S. Patent No. 6,314,420. (Emphasis added.)

[114] Frieder Report, pp. 15 and 25.

[redacted]. Lycos would have recognized the significant resources and time that Google would have needed to invest in developing its pCTR [redacted]

70. Lycos' recognition of the limited benefits to Google from obtaining a license to the Patents-in-Suit would have tempered Lycos' expectations as to the royalty payment it could expect to receive from Google.

B. Lycos' Lack Of Commercialization Or Licensing Efforts Related To The Patents-in-Suit[115]

71. In 2004, at the hypothetical negotiation, both parties would have been aware that Lycos had not undertaken any commercialization or licensing efforts specifically related to the Patents-in-Suit. Mr. Blais testified that he was unaware of any attempts to create products "with the intent specifically to embody the [Patents-in-Suit]."[116] [redacted] Furthermore,

[115] This section is related to *Georgia-Pacific* factors 8 and 15 and is summarized in **Appendix A**.

[116] Blais Deposition, pp. 17 and 25 – 26.

[117] Lang Deposition, pp. 64 – 65.

[118] Kosak Deposition, p. 77.

[119] Kosak Deposition, p. 78.

Lycos has neither sought to license nor received requests to license the '420 and '664 Patents.[120] Additionally, according to the Complaint in this matter, Lycos decided to "continue[] as a major portal provider and stopped investing money into search engine/system research and development, including the technology developed by Messrs. Lang and Kosak."[121] An article from CNET News on February 11, 2004 quoted Lycos as saying that "Lycos will transition from a generic portal business to a tight network of interconnected vertical sites focused on personal connections."[122]

72. Taking the factors noted above into consideration, Lycos would have acknowledged that it had not engaged in any efforts with the intent of commercializing or licensing the Patents-in-Suit. In fact, Lycos had shifted its focus and ceased investing in search technologies as early as 1998. These factors would diminish Lycos' negotiating position at the hypothetical negotiation.

C. A Bare (I.E., Naked) Patent License[123]

73. Lycos had not developed software or a commercial product that employed the technology claimed by the Patents-in-Suit. Lycos' sole contribution to Google's commercialized product would be a bare (or naked) licensing agreement without any guidance about the technological implementation and/or commercialization of the Accused Products. No technical information or know how would be transferred with the license agreement. Significant contributions would be required by Google to implement the Accused Products (allegedly containing the Accused Functionality), including hardware

[120] Blais Deposition, p. 96.

[121] Complaint, p. 6.

[122] "Lycos Restructures, Cuts U.S. Staff." (http://news.cnet.com/2100-1038_3-5157640 html, viewed on August 10, 2012.)

[123] This section is related to *Georgia-Pacific* factors 8, 9, 10, 11, 13, and 15 and is summarized in **Appendix A**.

infrastructure and software programming. Additionally, a license to the Patents-in-Suit would not provide Google with a specific method of computing pCTRs required to implement the Accused Functionality. At the time of the hypothetical negotiation in 2004, the parties would have been aware that Lycos would provide Google only with a bare patent license (e.g., no technological guidance or commercialized products would be included).

D. Lycos' Business Difficulties[124]

74. Both Lycos and Google would have been aware of Lycos' business difficulties at the 2004 hypothetical negotiation. Until 2009, Lycos had remained unprofitable for a number of years, including around the time of the hypothetical negotiation. Mr. Blais testified that Lycos was not profitable from 2004 through 2008.[125] Lycos' share of its parent company's advertising/e-commerce revenues dropped from 94% to 52% from 2002 to 2004.[126] As of February 2004, Lycos had laid off about 20 percent of its U.S. staff and closed its Mountain View offices.[127] At the same time, "Lycos' Web network [had] dropped," and the company had "closed its collection of community sites."[128] Based upon its business difficulties, around the time of the hypothetical negotiation, Lycos' negotiating position with respect to Google's would have been significantly weakened.

[124] This section is related to *Georgia-Pacific* factors 8 and 15 and is summarized in **Appendix A**.

[125] Blais Deposition, p. 90.

[126] Becker Report, p. 24.

[127] "Lycos Restructures, cuts U.S. Staff." (http://news.cnet.com/2100-1038_3-5157640 html, viewed on August 10, 2012.)

[128] "Lycos Restructures, cuts U.S. Staff." (http://news.cnet.com/2100-1038_3-5157640 html, viewed on August 10, 2012.)

E. Lycos' Awareness That Licensing To Google Would Be Beneficial[129]

75. At the time of the hypothetical negotiation, Lycos would have been aware that licensing to Google would be advantageous. Mr. Mark Blais, General Counsel for Lycos, testified that "certainly our relationship with the partner and the size of that partner would be relevant" to Lycos' "willing[ness] to enter into a patent license."[130] According to Mr. Blais, Lycos has used Google's AdSense for Content "for many, many years" (including at the time of the hypothetical negotiation) and is still using the service at present.[131] Prior to 2006 and including at the time of the hypothetical negotiation, Lycos used Google's AdSense for Search (i.e., an Accused Product).[132] Lycos would have acknowledged, among other considerations, (a) its existing relationship with Google (related to Google's AdSense for Content and AdSense for Search) and (b) Google's strong brand name as two significant incentives for entering into a license agreement with Google related to the Patents-in-Suit.

a. Lycos' Existing Relationship With Google. In September 2003, prior to the hypothetical negotiation, Lycos and Google entered into "a multi-year agreement making contextually-targeted advertisements through the Google AdSense program available on selected sites throughout the Terra Lycos Network."[133] Through this partnership, "Lycos users [] see advertisements targeted to the unique content of pages throughout the Terra Lycos Network," while at the same time "providing Terra Lycos additional revenue from its individual sites when users click on Google advertisements."[134] At the time of the agreement, Terra Lycos' Vice President of Sales and Operations, Mr. Charles Theiss, referred to the partnership as a "win"

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[129] This section is related to *Georgia-Pacific* factors 5 and 15 and is summarized in **Appendix A**.

[130] Deposition transcript of Mark Blais taken on July 31, 2012 ("Blais Deposition"), pp. 114 – 115.

[131] Blais Deposition, pp. 27 – 28 and 110.

[132] Blais Deposition, p. 28 and 109 – 110.

[133] "Lycos Selects Google AdSense for Content Ads." (http://googlepress.blogspot.com/2003/09/lycos-selects-google-adsense-for html, viewed on July 20, 2012.)

[134] "Lycos Selects Google AdSense for Content Ads." (http://googlepress.blogspot.com/2003/09/lycos-selects-google-adsense-for html, viewed on July 20, 2012.)

because it would "enhanc[e] the user experience and generat[e] significant revenue."[135] Mr. Theiss further stated that "[t]he Google AdSense program, with its unique targeting capability, is a great complement to our other ad delivery products."[136] The "alliance leverage[d] Google's" expertise in areas identified as being "high priority for both companies."[137] Additionally, as of April 2004, "Lycos's advertising based revenue structure was largely dependent on Google AdWords" and "Lycos [was] the largest network serving Google contextual AdWords advertising."[138]

b. Google's Strong Brand Name. Lycos would have acknowledged Google's strong brand name as an additional benefit to partnering with Google at the time of the hypothetical negotiation. According to U.S. Online's June 2004 report, as of August 2003, "Google [was] top[] among search engines" accounting for "a 32% share of total searches among Internet users in the US."[139] Additionally, by February 2004, Google attracted 37% more unique visitors than Terra Lycos.[140] At the same time, in the At-Home and At-Work Internet User segment, Google had an average time per session of about 30 minutes, more than triple the sub 10 minute average time spent on Lycos Network sites over the same period.[141]

76. Based upon the above considerations, Lycos would have recognized that it would benefit considerably from licensing the Patents-in-Suit to Google. Lycos would have had strong incentives to license the Patents-in-Suit on favorable terms to Google because the advertising revenue Lycos generated from AdSense for Search (i.e., an Accused Product) was an important revenue stream for Lycos.

[135] "Lycos Selects Google AdSense for Content Ads." (http://googlepress.blogspot.com/2003/09/lycos-selects-google-adsense-for html, viewed on July 20, 2012.)

[136] "Lycos Selects Google AdSense for Content Ads." (http://googlepress.blogspot.com/2003/09/lycos-selects-google-adsense-for html, viewed on July 20, 2012.)

[137] "Lycos Selects Google AdSense for Content Ads." (http://googlepress.blogspot.com/2003/09/lycos-selects-google-adsense-for html, viewed on July 20, 2012.)

[138] "Lycos Search Portal May Be Up For Sale" dated April 28, 2004. (Blais Deposition Exhibit 16.)

[139] "U.S. Online: Access, Demographics & Usage" dated June 2004, p. 195.

[140] "U.S. Online: Access, Demographics & Usage" dated June 2004, p. 173.

[141] "U.S. Online: Access, Demographics & Usage" dated June 2004, p. 176.

F. Value Indicators Of The Patents-In-Suit[142]

1. Offers to Purchase Lycos' Patent Portfolio and Family Of Patents That Include The Patents-In-Suit

77. Towards the end of 2008, Lycos was contacted by Altitude Capital Partners ("Altitude"), a New York company that invests in intellectual property portfolios, regarding purchasing Lycos' patent portfolio.[143] Although initially Lycos was not interested in such a transaction,[144] Lycos began to consider "selling [its] patent portfolio as a whole in 2009"[145] as a result of "a demand to become profitable" from its parent company, Daum.[146] At the time, Lycos' entire portfolio consisted of around 28 patents, as well as pending patent applications, covering a "[v]ariety of fields" (e.g., search, online advertising, load balancing of networks, and gaming).[147] Mr. Blais testified that "initially [Lycos was] going to sell [Altitude] the patent portfolio in whole for around [redacted][148] However, the negotiations with Altitude in 2009/2010 were delayed and halted [redacted] sale of Lycos to Ybrant in 2010.[149]

78. In 2011, Lycos was approached by two other parties, which started a bidding process among three potential purchasers (i.e., Altitude, Mr. Staykov, and Hudson Bay Capital). The bidding process related to the patent family that included the Patents-in-Suit (rather

[142] This section is related to *Georgia-Pacific* factors 1, 4, 12, and 15 and is summarized in **Appendix A**.

[143] Blais Deposition, pp. 124 – 125.

[144] Blais Deposition, p. 124.

[145] Blais Deposition, p. 122.

[146] Blais Deposition, p. 124.

[147] Blais Deposition, p. 123.

[148] Blais Deposition, p. 126.

[149] Blais Deposition, pp. 129 – 130.

than Lycos' entire patent portfolio). The highest offer for this Lycos patent family was [redacted] by Hudson Bay Capital, which resulted in the purchase agreement between Lycos and Smart Search Labs (i.e., the predecessor to I/P Engine owned by Innovate/Protect, which is owned in part by Hudson Bay Capital).

79. A description of the Lycos' negotiations with (a) Altitude, (b) Mr. Staykov, and (c) Hudson Bay Capital and the offers Lycos received is presented below.

a. Altitude Capital Partners. Altitude contacted Lycos at the end of 2008 with an interest in purchasing Lycos' entire patent portfolio. [redacted] At that time, Lycos was not interested in entering such a transaction.

By 2009, Lycos was facing adverse rulings in its litigations and began "looking at all ways to cut costs."[155] Mr. Blais re-initiated negotiations with Altitude at this time.[156] [redacted]

[redacted]

[151] Blais Deposition, p. 137.

[redacted]

[154] Blais Deposition, pp. 124 – 125.

[155] Blais Deposition, p. 124.

[156] Blais Deposition, p. 125.

[redacted]

[redacted]

[redacted] by which time Lycos' "parent company had [] entered a letter of intent with Ybrant to sell Lycos."[164] At this time, negotiations between Lycos and Altitude stopped.

Lycos again entered into discussions with Altitude in the spring or summer of 2011, after receiving an offer from Mr. Stayko Staykov (discussed below).[165] Another party, Hudson Bay Capital, also entered the negotiations at this time (also discussed below).[166] These discussions no longer centered on the entire Lycos patent portfolio, but rather one patent family that included the Patents-in-Suit.[167] [redacted]

b. Mr. Stayko Staykov. In the spring of 2011, Lycos was contacted by Mr. Staykov who had an interest in purchasing the family of patents that included the Patents-in-Suit.[169]

[redacted]

[160] Blais Deposition, pp. 127 – 128.

[redacted]

[163] Blais Deposition, pp. 129 – 130.

[164] Blais Deposition, p. 130.

[165] Blais Deposition, pp. 131 – 132.

[166] Blais Deposition, p. 135.

[167] Blais Deposition, pp. 134 – 135.

[168] Blais Deposition, pp. 135 and 140.

[169] Blais Deposition, pp. 131 – 132.

After meeting with Mr. Blais and conducting "brief due diligence," Mr. Staykov offered to purchase the patent family for a purchase price [redacted] Lycos responded that the offer was "too low."[171] At that time, Lycos' CEO gave Mr. Blais permission to "get other parties involved" in the negotiation.[172] Mr. Blais reached out to Altitude and was placed in contact with Hudson Bay Capital.[173] Thus, the bidding process began between the three entities. Through the course of these negotiations, Mr. Staykov eventually [redacted] before he dropped out" of the negotiations.[174]

c. Hudson Bay Capital/Smart Search Labs. In the spring of 2011, after receiving an offer from Mr. Staykov, Lycos began discussions with Hudson Bay Capital regarding the sale of Lycos' patent family that included the Patents-in-Suit.[175] [redacted] At the same time as the negotiations with Hudson Bay Capital, Lycos was in discussions with Altitude and Mr. Staykov, as described above. Through further negotiations with Hudson Bay Capital, [redacted]. Although the negotiations were with Hudson Bay Capital, the "contractual part[y] would ultimately be Smart Search Labs."[179] On June 22, 2011, Lycos and Smart Search Labs entered into a patent purchase and license agreement with the following principal terms:[180]

i. Lycos sold to Smart Search Labs a patent family consisting of 8 patents, including the '420 and '664 Patents, for a lump-sum payment of [redacted].[181]

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170 Blais Deposition, p. 133.

171 Blais Deposition, pp. 133 – 134.

172 Blais Deposition, p. 134.

173 Blais Deposition, pp. 134 and 135.

174 Blais Deposition, p. 135.

175 Blais Deposition, p. 135.

[redacted]

179 Blais Deposition, p. 142.

[redacted]

ii. [redacted]

2. Implications Of Purchase And License Agreement Between Lycos And Smart Search Labs

80. The final sale of the patent family that included the Patents-in-Suit was the result of a bidding process. Mr. Blais testified that the sale of the patent family by Lycos was "all based on the highest price [Lycos] could get."[184] Mr. Blais testified that given "the size of Lycos, [the final deal] was a good amount of cash."[185] Mr. Blais described the negotiations for the sale of the patent family in 2011 as being "driven by [Lycos'] lack of profitability."[186] However, Lycos' lack of profitability in 2011 does not reduce the probative value of the purchase agreement for the 2004 hypothetical negotiation. As discussed previously, around the time of the hypothetical negotiation, Lycos also was unprofitable and facing business difficulties. As of February 2004, Lycos had laid off about 20 percent of its U.S. staff and closed its Mountain View offices.[187] Mr. Blais testified that Lycos had not been profitable in 2004 and 2005.[188]

81. The [redacted] that resulted from the bidding process among Altitude, Mr. Staykov, and Hudson Bay Capital provides an *ex-post* market related value indicator of the Patents-in-Suit and an indication Lycos' willingness to accept for this patent family.

[redacted]

[183] Blais Deposition, p. 139.

[184] Blais Deposition, p. 137.

[185] Blais Deposition, p. 137.

[186] Blais Deposition, p. 137.

[187] "Lycos Restructures, Cuts U.S. Staff." (http://news.cnet.com/2100-1038_3-5157640.html, viewed on August 10, 2012.)

[188] Blais Deposition, pp. 147 – 148.

The [redacted] overstates the value of a license to the Patents-in-Suit for the following reasons, *inter alia*.[189]

a. Patent Sale vs. Patent License. The patent purchase agreement between Lycos and Smart Search Labs was for the sale of the patent family as opposed to a patent license. A sale of this nature would increase the transaction value of the patents relative to a license to the same patents. Whereas a license only provides rights to use the patented technology, a sale transfers all ownership and rights in the patents to the purchaser. At the time of the hypothetical negotiation, Lycos would have been aware that Google would not be willing to agree to payment terms for a patent license of the same magnitude as those of a patent sale.

b. Portfolio Of Multiple Patents. The final sale to Smart Search Labs was for a patent family consisting of 8 patents (including the Patents-in-Suit).[190] The sale of a patent family commands a higher value than the sale or license of two standalone patents. The fact that Lycos attributed value to other patents in this patent family besides the '420 and '664 Patents is evidenced by at least the following.

   i. Lycos filed lawsuits against "entities that had content recommendation systems" (i.e., TiVo, Blockbuster, and Netflix) regarding the '799 and '214 Patents.[191]

   ii. [redacted] 2 million to account for the inclusion of one additional patent (i.e., '493 Patent).

   Lycos would have recognized at the time of the hypothetical negotiation that a license to the Patents-in-Suit would not have as much value attributed to it as a sale of a patent family that includes the Patents-in-Suit.

G. Lycos' Willingness To Accept A Lump-Sum Royalty Payment Structure[192]

82. Lycos considered licensing a patent related to massive multiplayer games in 2006.[193] At the time, Lycos did not have a preference for a lump-sum or running royalty payment

[redacted]

[191] Blais Deposition, pp. 54 – 55.

[192] This section is related to *Georgia-Pacific* factors 1, 4, and 15 and is summarized in **Appendix A**.

[193] Blais Deposition, pp. 53 – 54.

structure.[194] However, Lycos' willingness to accept a lump-sum payment structure is supported by the [redacted]. A summary of these offers and agreements is provided below.

a. [redacted]

[redacted]

[194] Mr. Blais testified as follows. (Blais Deposition, p. 57; objections omitted.)

> Q: How about in 2006, do you know if Lycos had any preferences in licensing out its patents for lump sum versus a running royalty?
>
> A: I wouldn't say there was really any preferences.

[195] Blais Deposition, p. 55.

[196] Blais Deposition, p. 56.

[197] Blais Deposition, pp. 56 – 57. Mr. Blais testified that "[t]here were some preferences for a running royalty to create a revenue stream, but it wasn't strong."

[redacted]

[redacted]

[redacted]

[201] Blais Deposition, pp. 76 – 79.

[redacted]

[redacted]

83. The facts referenced above provide evidence of Lycos' willingness to accept a lump-sum payment structure during licensing negotiations. Both parties would have recognized this at the time of the hypothetical negotiation.

X. GOOGLE'S NEGOTIATING POSITION WITH LYCOS

84. In this section of my report, I evaluate Google's negotiating position with Lycos at the time of the hypothetical negotiation. Based upon documentary evidence, deposition testimony, economic analyses, and discussions held with Google's personnel and technical expert, the following conclusions can be reached with respect to Google's negotiating position with Lycos.

[redacted]

[303] Blais Deposition, p. 83.

[304] Blais Deposition, pp. 83 – 84.

[305] Blais Deposition, p. 84.

[redacted]

[redacted]

[redacted]

a. Google made substantial contributions to the commercial success of the Accused Products independent of the Patents-in-Suit.

b. The claimed benefits of the Patents-in-Suit to Google (and thus Google's willingness to pay for a license to the Patents-in-Suit) are limited.

c. The success of Google's search advertising systems is not attributable to the technology claimed by the Patents-in-Suit.

d. Certain of Google's patent licensing and/or patent acquisition agreements provide guidance to the royalty payment amount Google would have negotiated with Lycos for a license to the Patents-in-Suit.

e. Google's patent licensing and/or patent acquisition agreements [redacted]

f. Google's cost to implement an acceptable non-infringing alternative would have constrained the outcome of the hypothetical negotiation.

A. Google Made Substantial Contributions To The Commercial Success Of The Accused Products Independent Of The Patents-In-Suit[209]

85. Prior to implementing the Accused Functionality, Google had achieved significant commercial success in Internet search and search advertising. At the hypothetical negotiation, Lycos and Google would have recognized that Google had made and would continue to make substantial contributions to the Accused Products, including but not limited to Google's web search technology, numerous features and benefits of the Accused Products unrelated to the Patents-in-Suit, significant investments in hardware and software infrastructure, and Google's modified second-price auction system.

1. Google Achieved Commercial Success Prior To The First Alleged Infringement

86. Google's commercial success is demonstrated through the success of its Search, Search-based Advertising, Content-based Advertising, and its suite of products and services such as Google toolbar, Google News, Google Print (which later became Google Book

[209] This section is related to *Georgia-Pacific* factors 8, 11, 13, and 15 and is summarized in **Appendix A**.

Search), orkut, and Google Local.[210] Prior to the hypothetical negotiation in 2004, Google had achieved commercial success and had established a large user base and network of advertisers and partnership sites. These considerations drive Google's advertising revenues independent of the Patents-in-Suit. In addition, Google has continuously introduced new products, services, features, and functionalities that are unrelated to the Patents-in-Suit to maintain and enhance its installed base of users and advertisers.

i. Commercial Success Of Google's Search Technology Prior To the First Alleged Infringement

87. As a startup company, Google was "dedicated to providing the best search experience on the web." As early as 1999, Google employed "several key technologies to generate search results of unprecedented accuracy and quality" and its web traffic was "growing at a rate of 50% per month since Google's inception, fueled only by word of mouth." In the same year, Google received funding from venture capitalists who anticipated Google becoming the "gold standard for search on the internet."[211] By 2000, Google was offering search in 15 languages.[212]

88. Google's web search technology uses a combination of techniques to determine the importance of a web page, many of which are protected by trade-secrets. The web search techniques Google employed prior to the first alleged infringement included the PageRank technique (an algorithm that computes the rank of a web page by solving an

[210] Google, "Our history in depth." (http://www.google.com/about/company/history/#top, viewed on August 3, 2012.)

[211] Google News Announcement, "Google receives $25 million in equity funding," June 7, 1999. (http://googlepress.blogspot.com/1999/06/google-receives-25-million-in-equity.html, viewed on August 6, 2012.)

[212] Google, "Our history in depth." (http://www.google.com/about/company/history/#top, viewed on August 3, 2012.)

equation of 500 million variables and two billion terms) and text-matching techniques.[213] Prior to the first alleged infringement, Google was able to provide successful search for its users because it assessed the "importance of every web page using more than 200 signals and a variety of techniques (including its patented PageRank™ algorithm)"[214] and constantly improved the quality of its search.[215] Google continues to constantly innovate and improve upon its search technology.

89. Below, I provide examples that illustrate the excellence of Google's search technology before the date of the first alleged infringement.

a. 1998. As early as 1998, PC Magazine reported that "Google has an uncanny knack for returning extremely relevant results." Google was recognized as the search engine of choice in the Top 100 Web Sites for 1998.[216]

b. 1999.

i. In 1999, Google's search technology was commended as "delivering the most relevant results query after query, and displaying the results in [a] format that is easy to scan or read." Google's search engine was noted to "consistently return good results using PageRank techniques that determine the relevancy of search results by analyzing the number of websites that point to any page returned by a query." [217]

ii. NPD Online Research conducted a competitive survey in 1999 which included 13 Internet companies. Included in the survey were AltaVista, AOL, Ask Jeeves, Excite, Go Network, Google, GoTo.com, HotBot, LookSmart, Lycos, Netscape, WebCrawler, and Yahoo!. This was the first time Google was included in the

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[213] Google Inc. Form 10-K for the year ending December 31, 2004, pp. 10 and 13 and Google News Announcement, "Google receives $25 million in equity funding," June 7, 1999. (http://googlepress.blogspot.com/1999/06/google-receives-25-million-in-equity html, viewed on August 6, 2012.)

[214] Google, "Ten things we know to be true." (http://www.google.com/about/company/philosophy/, viewed on August 6, 2012.)

[215] Google, "Facts about Google and competition." (http://www.google.com/competition/howgooglesearch works.html, viewed on August 6, 2012.)

[216] Google, "Our history in depth." (http://www.google.com/about/company/history/#top, viewed on August 3, 2012.)

[217] Google News Announcement, "Google Wins PC Magazine's Technical Excellence Award for Innovation in Web Application Development," November 16, 1999. (http://googlepress.blogspot.com/1999/11/google-wins-pc-magazines-technical html, viewed on August 6, 2012.) (Bracketed term added for clarification.)

NPD survey. In the survey, Google was placed first in six categories (i.e., "overall site effectiveness," "overall opinion of site," "recommend to a friend," "comparison with other sites," "share of future visits," and "bookmark rate"). Google was placed first in these categories because (i) users found Google to be "much better" or "somewhat better" than other sites; (ii) users found what they are searching for on Google all or most of the time; and (iii) Google delivered the best search results.[218]

iii. Google's search engine was recognized in Time magazine's "Best Cyberttech of 1999" list and received the 1999 PC Magazine Technical Excellence award in the "Internet Infrastructure: Web Applications" category.[219]

c. 2000. Google won the Webby Award – the online industry's highest and most prestigious honor – in the category of best "Technical Achievement" for its web site content, design, navigation, functionality, and the overall user experience in 2000. Google also won the Webby People's Voice Award in the Technical Achievement category.[220]

d. 2001.

i. Google was awarded the Webby Award for Best Practices, a new category that honors a single site that serves as a model of overall excellence in terms of content, structure and navigation, visual design, functionality, interactivity, and overall experience.[221]

[218] Google News Announcement, "Google Ranks First Overall in Third-Party Survey of Search and Portal Users," December 10, 1999. (http://googlepress.blogspot.com/1999/12/google-ranks-first-overall-in-third html, viewed on August 6, 2012.) Google also was placed first in multiple categories in subsequent NPD surveys. (*See, e.g.,* Google News Announcement, "Google Ranked No. 1 By Search Engine Users (Again!)," April 13, 2000 (http://googlepress.blogspot.com/2000/04/google-ranked-no-1-by-search-engine html, viewed on August 6, 2012); Google News Announcement, "Google's Success Story Continues: Google Ranked No. 1 in NPD Search & Portal Scorecard Measuring Loyalty and Satisfaction," July 13, 2000 (http://googlepress.blogspot.com/2000/07/googles-success-story-continues-google html, viewed on August 6, 2012); and Google News Announcement, "Google Continues to Receive Highest Rankings From Independent Research and Technology Testing Companies," December 1, 2000 (http://googlepress.blogspot.com/2000/12/google-continues-to-receive-highest html, viewed on August 6, 2012.))

[219] Google News Announcement, "Google's Free WebSearch Service Surpasses 13,000 Subscribers," March 22, 2000. (http://googlepress.blogspot.com/2000/03/googles-free-websearch-service html, viewed on August 6, 2012.)

[220] Google News Announcement, "Google Wins Webby and People's Voice Awards For Best Technical Achievement," May 12, 2000. (http://googlepress.blogspot.com/2000/05/google-wins-webby-and-peoples-voice html, viewed on August 6, 2012.)

[221] Google News Announcement, "Google Wins 2001 Webby Award for Best Practices," July 19, 2001. (http://googlepress.blogspot.com/2001/07/google-wins-2001-webby-award-for-best.html, viewed on August 6, 2012.)

ii. Google was awarded two Search Engine Watch Awards for its exceptional performance in its ability to deliver relevant and accurate search results.[222]

e. 2002. Many large companies and institutions selected Google's award-winning search engine to power the search functions on their web sites. These companies included: America Online, Boeing, Cisco, PBS.org, National Semiconductor, Sur La Table, InfoSpace, and University of Florida.[223]

f. 2003. Google's Search Appliance was adopted by many corporations, including Pfizer, Xerox, Hitachi Data Systems, Nextel Communications, Procter & Gamble, Discovery Communications, and the U.S. Army. Launched in early 2002, Google's Search Appliance allowed customers and employees of large institutions in a wide range of industries to find products and information they need easily and efficiently.[224]

g. 2004.

i. JP Morgan noted the following in 2004.[225]

> Google users are loyal, very Internet savvy, and according to industry sources typically search more times per month than users of other search engines. … We believe this could be an indication of various factors/trends including … Google delivers more relevant search results to its users, thereby increasing loyalty and repeat usage.

ii. In a 2004 survey conducted by Vividence Corporation, 89% of U.S. Internet users surveyed expressed their "strongly positive experience" with Google, compared to 68% with Yahoo!, 50% with Ask Jeeves, 48% with Lycos, and 41% with MSN.[226]

iii. Google was ranked as a "top" search engine by U.S./North American Internet.[227]

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[222] Google News Announcement, "Google Sweeps Search Engine Watch Awards," January 25, 2001. (http://googlepress.blogspot.com/2001/01/google-sweeps-search-engine-watch html, viewed on August 6, 2012.)

[223] Google News Announcement, "Google's Award-Winning Search Engine to Power Search Functions Across America Online's Brands, Providing Consumers Easy Access to the Most Popular Search Engine Available," May 1, 2002. (http://googlepress.blogspot.com/2002/05/googles-award-winning-search-engine-to.html, viewed on August 22, 2012.) "Industry Leaders Adopt Google corporate Search Products," June 17, 2002. (http://googlepress.blogspot.com/2003/09/industry-leaders-adopt-google-corporate html, viewed on August 22, 2012.) "InfoSpace Adds Google's Award-Winning Search Results to its Industry-Leading Meta-Search Technology," September 4, 2002. (http://googlepress.blogspot.com/2002/09/infospace-adds-googles-award-winning html, viewed on August 6, 2012.)

[224] Google News Announcement, "Google Corporate search Products Gain Market Momentum," August 12, 2003. (http://googlepress.blogspot.com/2003/08/google-corporate-search-products-gain html, viewed on August 22, 2012.)

[225] JP Morgan, "Google: Search and You Will Find," September 27, 2004 (the "JP Morgan 2004 Report"), p. 3.

[226] Vividence Customer Experience Rankings, "Search Engine Industry Research Abstract," May 2004. (http://www.searchjohnston.co.uk/Search_Study_Abstract.pdf, downloaded on August 8, 2012.)

90. According to industry observers, the "history of the World Wide Web, the fortunes of [several] portal and search engine companies have traced a sickening parabolic arc. Companies like Ask Jeeves, Lycos, Inktomi, Excite, and AltaVista (part of CMGI) have gone public and seen their shares soar to triple digits - only to plummet to single digits." In contrast, Google's "proprietary technology" and "willingness to constantly innovate" its search algorithm contribute to its success.[228] Google's search technology allowed (and continues to allow) Google to establish a large customer base of users and contributes to Google's success independent of the claimed technology.

ii. Commercial Success Of Google's Online Advertising Prior To First Alleged Infringement

91. Google's Accused Products (i.e., AdWords and AdSense for Search) were successful prior to the date of the first alleged infringement.

a. AdWords. In 2000, Google launched Google AdWords, a "keyword-targeted advertising program" that "revolutioni[zed] the online advertising industry." Using AdWords, Google enhanced the effectiveness of online advertising for both users and advertisers by disallowing "pop-up and pop-under ads" and displaying only ads that were related to a person's specific search.[229] Google's AdWords program enjoyed commercial success upon its introduction and for many reasons unrelated to Google's alleged infringement of the Patents-in-Suit.

i. Google's Established Customer Base. Due to Google's "superior effectiveness as a search resource," Google already had already gained "widespread acclaim from its growing number of loyal users" prior to the first alleged infringement. At the time of AdWords' launch, Google users entered more than 20 million queries per day on google.com and Google's "overall web traffic" was increasing by 3 million queries per day per month. Advertisers who placed advertisements with Google

[227] Dr. Becker acknowledged in his report the commercial success Google had achieved prior to the hypothetical negotiation. (Becker Report, p. 45.)

[228] Business Management, "Google: Success built by goal seeking," May 29, 2010. (http://suite101.com/article/google-success-built-by-goal-seeking-a242307, viewed on August 6, 2012.) (Bracketed text added for clarification.)

[229] Google, "Marketing and Advertising using Google," 2007, p. 7. (http://static.googleusercontent.com/external_content/untrusted_dlcp/books.google.com/en/us/intl/en/googlebooks/pdf/MarketingAndAdvertisingUsingGoogle.pdf, downloaded on August 6, 2012.)

enjoyed exposure to a large number of users.[230] In less than a month of AdWords' beta debut in early October 2000, approximately 350 businesses and advertising agencies started using Google's AdWords product.[231]

ii. Google's Large Number Of Advertisers. Google has established a large network of online advertisers since the launch of its AdWords (and later on, AdSense) programs. As of March 2003, Google's online advertising program was comprised of over 100,000 advertisers.[232] By August 2004, an estimated 200,000 online advertisers participated in Google's paid listing programs. The benefits of establishing a large set of advertisers include the following:[233]

- competition for keywords places upward pressure on advertisers' bids and increases Google's cost-per-click ("CPC") revenues; and
- large advertiser exposure increases Google's attractiveness to distribution partners (i.e., Google's partner web sites).

b. AdSense for Search. Google launched the AdSense program in the first quarter of 2002.[234] The AdSense program enjoyed commercial success upon its introduction and for many reasons unrelated to Google's alleged infringement of the Patents-in-Suit.[235]

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230 Google News Announcement, "Google Launches Self-Service Advertising Program," October 23, 2000. (http://googlepress.blogspot.com/2000/10/google-launches-self-service.html, viewed on August 6, 2012.)

231 Google News Announcement, "Google Launches Self-Service Advertising Program," October 23, 2000. (http://googlepress.blogspot.com/2000/10/google-launches-self-service.html, viewed on August 6, 2012.)

232 Google News Announcement, "Google Builds World's Largest Advertising and Search Monetization Program," March 4, 2003. (http://googlepress.blogspot.com/2003/03/google-builds-worlds-largest html, viewed on August 6, 2012.)

233 Jefferies, "Gaga Over Google? Initiating Coverage With Buy," August 20, 2004 (the "Jefferies 2004 Report"), p. 3.

234 Google 2004 10-K, p. 22.

235 Google launched Beta Testing of AdSense for Mobile Search in 2009. Google Mobile Blog, "Calling all carriers – Introducing AdSense for mobile search," February 10, 2009. (http://googlemobile.blogspot. com/2009/02/calling-all-carriers-introducing html, viewed on August 1, 2012.) I understand that AdSense for Mobile is similar to AdSense for Search except that users search on their mobile phones instead of the computer. Since only the medium (i.e., Computer vs. Mobile) via which users access ads differs between AdSense for Search and AdSense for Mobile, the same factors such as the large number of Google's partner sites and advertisers contribute to the commercial success of AdSense For Mobile independent of the claimed patented technology in addition to several factors unique to mobile users. For example, 94% of mobile users look for local information on their phone and 90% take action a result. (Think with Google, "Our mobile planet: United States," May 2012. (http://www.thinkwithgoogle.com/ insights/library/studies/our-mobile-planet-us/, viewed on August 6, 2012.)) Google realized that location-based advertising was essential to serve these customers and has patented location-based search and advertising. (VentureBeat, "Google wins patent for location based advertising," March 1, 2010. (http://venturebeat.com/ 2010/03/01/google-location-ads/, viewed on August 6, 2012.))

i. Google's Large Number Of Partner Sites. Google has established a network of third-party web sites on which Google provides search-related and/or content-related targeted advertisements. Google's AdSense program enables these Network member web sites to display targeted advertisements. Through its use of Network member web sites, Google increases the reach and exposure of advertisers who place advertisements using Google's AdSense program.[236] Prior to the date of the first alleged infringement, Google's Network included web sites such as AOL, Ask Jeeves, Netscape, Earthlink, Compuserve, AT&T, Bizrate, DealTime, The New York Times, and The Washington Post.[237]

ii. Google's Large Number of Advertisers. As discussed earlier in my report, Google's large network of online advertisers increases Google's attractiveness to distribution partners and places upward pressure on Google's CPC revenues.

2. Google Ecosystem: The Dependence Of Advertising Upon Google Search

92. Google was founded as a search engine company. Google, "through continued iteration," has been able to "solve complex issues and provide continuous improvements to a service that already makes finding information a fast and seamless experience for millions of people." As one of its founding philosophies, Google states that "It's best to do one thing really, really well" and "we do search." In accordance with this objective, Google never sells its placement in search results and always identifies advertising as a "Sponsored Link," so that the integrity of its search results is not compromised.[238] Further, Google continues to constantly innovate and improve the quality of its search results. For example, in 2006, Google introduced several "new technologies to enhance and improve the search experience." These new products – which included Google Co-Op, Google

[236] Google Inc. Form 10-K for the year ending December 31, 2004, p. 8.

[237] Google News Announcement, "Google Builds World's Largest Advertising and Search Monetization Program," March 4, 2003. (http://googlepress.blogspot.com/2003/03/google-builds-worlds-largest html, viewed on August 6, 2012.)

[238] Google, "Ten things we know to be true." (http://www.google.com/about/company/philosophy/, viewed on August 6, 2012.)

Desktop 4, and Google Notebook – "advance[d] the state of the art in search by helping users worldwide find and share more relevant information."[239]

93. Mr. Page (Google's co-founder and CEO) emphasizes that "[s]earch engine marketing can only work as well as the search engine that supports it."[240] The industry recognizes that "at the heart of [Google] strategy and culture is the end-user result, which is its search engine's effectiveness before the consumer."[241] Using Google Search as the foundation, Google was able to establish a trusted network of users and develop its extensive user network to establish an ecosystem of users, advertisers, and third party publishers to drive advertising revenues. Google recognizes that "it has every reason to do whatever it takes to preserve its [search] algorithm's long standing reputation for excellence" as once "consumers start to regard it as anything less than good, it won't be good for anybody – except other search engines."[242] Hence, it is the success of Google Search[243] that (a) ultimately allowed (and continues to allow) Google to connect advertisers and websites with its users and (b) drives a large part of the accused revenues independent of the claimed teachings of the Patents-in-Suit. Indeed, Google considers

239 Google News Announcement, "New Google Search Technologies Make Information Easier to Discover, Organize and Share," May 10, 2006. (http://googlepress.blogspot.com/2006/05/new-google-search-technologies-make_10 html, viewed on August 6, 2012.)

240 Google, "Marketing and Advertising using Google," 2007, p. 13. (http://static.googleusercontent.com/external_content/untrusted_dlcp/books.google.com/en/us/intl/en/googlebooks/pdf/MarketingAndAdvertisingUsingGoogle.pdf, downloaded on August 6, 2012.) (Bracketed text added for clarification.)

241 Business Management, "Google: Success built by goal seeking," May 29, 2010. (http://suite101.com/article/google-success-built-by-goal-seeking-a242307, viewed on August 6, 2012.) (Bracketed text added for clarification. Emphasis added.)

242 Google, "Facts about Google and competition." (http://www.google.com/competition/howgooglesearchworks.html, viewed on August 6, 2012.)

243 Dr. Becker acknowledged that the trust of the user in search precedes relevance in the "Search Industry." (Becker Report, p. 31.)

the Smart Ads system to be a relatively small piece of what makes AdWords successful.[244]

3. Google's Accused Products Offer Many Features Unrelated To the Patents-In-Suit

94. At the hypothetical negotiation, Lycos and Google would have been aware that Google's Accused Products offer a many features and benefits that drive demand and contribute to their success independent of the claimed teachings of the Patents-in-Suit. These features and benefits include keyword-based search advertising, account management features, additional services for large advertisers, effective return on investment, and fast display of advertisements.

a. Keyword-Based Search Advertising.[245] Google's AdWords program is based upon keyword searches. Google offers advertisers the ability to target users based upon keywords used. In the AdWords program, "advertisers choose keywords to trigger the display of their advertisements" in response to a search query. Additionally, due to keyword-based pay-per-click search advertising, advertisers only will pay for ads that are displayed in response to a search query and "clicked" by the end user.

b. Account Management Features.[246] Google provides its advertisers with "many features that make it easy to set up and manage ad campaigns for maximum efficiency and effectiveness." AdWords provides its "advertisers great measurability for the kind of investment or the money that they spend on Google advertising."[247] Examples of these features are provided below.

   i. Advertisement Creation. AdWords provides advertisers with flexibility in the creation of ads by (1) allowing advertisers to create and run different versions of an ad to see which ones get the best response from users, (2) showing how an advertisement will look before it is posted on Google's search results page, and (3) displaying ads online immediately after an order is placed.

[244] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, pp. 30 – 31. (G-IPE-0222950 – 990 at 970 – 971.)

[245] *Bid for Position, LLC v. AOL Inc et al.*, F.3d 1311, 1312 (Fed. Cir. 2010).

[246] Google Inc. Form 10-K for the year ending December 31, 2004, pp. 7 – 8 and Google News Announcement, "Google Launches Self-Service Advertising Program," October 23, 2000. (http://googlepress.blogspot.com/2000/10/google-launches-self-service.html, viewed on August 6, 2012.)

[247] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, p. 31. (G-IPE-0222950 – 990 at 971.)

ii. Campaign Management. The campaign management functionality allows advertisers to use different combinations of advertisements for different keywords to better target the advertisers' customers.

iii. Conversion Tracking. The conversion tracking functionality is a free tool Google offers to measure the conversion of advertising campaigns and can assist advertisers in improving their return on advertising spending. Advertisers can target campaigns by city, country, regional area, or language. According to Aryan Florists, a Google AdWords customer, the flexibility to change AdWords campaign and adjust campaign geo-targeting at the country, region, and city levels are the "two most important features" of AdWords.[248]

iv. Traffic Estimator. The traffic estimator functionality helps advertisers predict the number of daily searches for certain keywords.

v. Budgeted Delivery. The budgeted delivery functionality allows advertisers to control the amount they spend on daily advertising and allows advertisers to control the time of day when their advertisements are seen.

c. Additional Services for Large Advertisers.[249] For larger advertisers, Google offers "additional services that help to maximize returns on their Internet marketing investments and improve their ability to run large, dynamic campaigns." Examples of these services are provided below.

i. Creative Maximization. The creative maximization service helps advertisers develop popular keywords and design more successful advertisements.

ii. Vertical Market Experts. Google provides industry specialists that can advise advertisers on how to best reach their target customers.

iii. Bulk Posting. Through bulk posting, advertisers can run large ad campaigns with hundreds or more keywords.

iv. AdWords API And Commercial Developer Program. Google allows advertisers to design computer programs that interact directly with AdWords and allows advertisers to easily manage large AdWords accounts.

d. Effective Return on Investment. Google AdWords allows advertisers to achieve greater cost effectiveness. Advertisers choose how much they pay when a user clicks on their ad (although they are subject to a minimum price per click). Further, because Google offers a "simple ad format", advertisers can avoid incurring significant design, copywriting, or other production costs associated with creating ads. As a

[248] Google Adwords, Success Stories. (https://accounts.google.com/ServiceLogin?service=adwords&cd=IN&hl=en_IN&ltmpl=jfk&passive=false&ifr=false&alwf=true&continue=https://adwords.google.co.in/um/gaiaauth?apt%3DNone%26ltmpl%3Djfk%26ltmpl%3Djfk&error=newacct&sacu=1&sarp=1, viewed on July 11, 2012.)

[249] Google Inc. Form 10-K for the year ending December 31, 2004, p. 8.

result, even small advertisers find AdWords cost-effective for connecting with potential customers. In addition, advertisers can easily create many different ads and increase the likelihood that an ad is suited to a user's search.[250] According to Fundoodata, a Google AdWords customer, the "basic advantage" of Adwords is that the customer gets charged only when somebody clicks on the ad as opposed to SMS (i.e., marketing on a mobile phone) or email marketing.[251]

e. Speed Of Google's Advertising System. Google AdWords allows advertisers to have their advertisements displayed extremely quickly to end-users. Each time an end-user runs a search, the Google AdWords system looks over all of the active ads that Google has (currently over 2 billion), brings back the best matching ads, runs a real-time auction, and returns results to the user – as well as calculating the cost-per-click for each advertisement displayed. All of this occurs in under half a second.[252] Google considers speed of response "absolutely central to what [it does]."[253] As discussed below, the speed of Google's advertising system has been achieved through Google's "huge investment and focus" on infrastructure.

4. Google's Investment In Infrastructure

95. Google provides search and advertising results in response to queries by users, using computers that "continually crawl the web" and create an index of the billions of pages available on the internet.[254] Prior to the hypothetical negotiation, Google had indexed three billion web documents by the end of 2001 and six billion by early 2004.[255]

96. Google invests in large scale technology systems to enable it to "crawl" and "index" WebPages, and to provide search advertising results in connection with its search results. In order to provide search results and advertisements instantaneously to Google's users,

[250] Google Inc. Form 10-K for the year ending December 31, 2004, p. 3.

[251] Google Adwords, Success Stories. (https://accounts.google.com/ServiceLogin?service=adwords&cd=IN&hl=en_IN&ltmpl=jfk&passive=false&ifr=false&alwf=true&continue=https://adwords.google.co.in/um/gaiaauth?apt%3DNone%26ltmpl%3Djfk%26ltmpl%3Djfk&error=newacct&sacu=1&sarp=1, viewed on July 11, 2012.)

[252] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, pp. 32 – 34. (G-IPE-0222950 – 990 at 972 – 974.)

[253] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, pp. 32 – 34. (G-IPE-0222950 – 990 at 972 – 974.)

[254] Google Official Blog, "Controlling how search engines access and index your website," January 26, 2007. (http://googleblog.blogspot.com/2007/01/controlling-how-search-engines-access.html#!/2007/01/controlling-how-search-engines-access.html, viewed on August 6, 2012.)

[255] Google, "Our history in depth." (http://www.google.com/about/company/history/#top, viewed on August 3, 2012.)

Google has to incur considerable investments in its software and hardware infrastructure. Speed is central to what Google does.[256] The techniques applied to ensure the almost automatic provision of Google's search and advertising results require intensive computational capability and resources.[257] Google operates large redundant data centers around the country and the world with thousands of servers which support a high volume of search queries (from millions of simultaneous users) and Google's vast ad auction system.[258] Google builds its own computers (and the software for its computers) in order to provide the fastest results possible.[259] Google's investment in its infrastructure enables significant improvement for its search and advertising results delivery, allows the storage and processing of large amounts of data, shortens Google's product development cycle, and allows Google to pursue innovations more cost effectively.[260] Google's infrastructure (i.e., its capacity to handle massive volume of search requests and data) contributed to Google's commercial success prior to the date of the first alleged infringement.

5. Google's Auction System

97. Advertisers on Google's sites or third-party sites using the Accused Products (i.e., AdWords and AdSense for Search) mostly pay on a "cost-per-click" basis. Specifically, these advertisements are priced through Google's auction system that allows advertisers

[256] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, pp. 32 – 34. (G-IPE-0222950 – 990 at 972 – 974.)

[257] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, pp. 32 – 34. (G-IPE-0222950 – 990 at 972 – 974.)

[258] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, pp. 32 – 34. (G-IPE-0222950 – 990 at 972 – 974) and Jefferies 2004 Report, p. 5.

[259] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, p. 35. (G-IPE-0222950 – 990 at 975.)

[260] Google Inc. Form 10-K for the year ending December 31, 2004, p. 11.

to bid on certain search terms/keywords they wish to use and to set a maximum price they are willing to pay each time a user clicks on their advertisement.[261]

98. As early as 2002, when most online businesses were still advertising in traditional ways, Google implemented an auction-based system for selling advertisements. Google's shift in 2002 from a pay per impression system to a pay-per-click system, combined with its use of an auction system that incorporated both bid amount and click-through rate in the ranking of ads, was a significant improvement over prior search advertising systems.[262] Further, Google implemented a "second price auction" system, so that advertisers never paid more than necessary for their ad's position.[263]

99. Google's innovative auction-based selling of advertisements and Google's willingness to pioneer new risky approaches contributed (and continues to contribute) to the accused revenues independent of the claimed teachings of the Patents-in-Suit.

6. Summary

100. Google's web search technology, innovative products and services, intellectual property, hardware and software infrastructure, and the many features that the Accused Products offer unrelated to the Patents-in-Suit have contributed significantly to the commercial success of Google and its Accused Products. In addition, Google's auction methodology, adopted prior to the first alleged infringement, contributed to the commercial success of the Accused Products independent of the claimed teachings of the Patents-in-Suit. Both

[261] "Ad Auction – Ranking and Pricing." (G-IPE-0061400 – 402.)

[262] Trial Testimony of Jeff Huber, August 5, 2010, *Bright Response v. Google et al.*, pp. 23 – 26. (G-IPE-0222950 – 990 at 963 – 966.)

[redacted]

Lycos and Google would have been aware of these considerations at the hypothetical negotiation for a license to the Patents-in-Suit. Google's significant contributions to the success of the Accused Products would have placed significant downward pressure on the royalty payment agreed upon by Lycos and Google.

B. The Claimed Benefits Of The Patents-In-Suit To Google Are Limited[264]

101. At the hypothetical negotiation with Lycos, Google would have emphasized that the claimed benefits Google would receive from a license to the Patents-in-Suit (and Google's willingness to pay for a license to the Patents-in-Suit) would have been limited for at least the following reasons.

1. The Accused Functionality Is [redacted]

102. The Accused Functionality in this matter is [redacted] According to Dr. Frieder, the allegedly infringing "filtering steps" performed by Google are [redacted]

103. Although the Accused Functionality includes the use of pCTR [redacted], it is my understanding that the computation of

264 This section is related to *Georgia-Pacific* factors 9, 10, 11, 13, and 15 and is summarized in **Appendix A**.

[redacted]

pCTR (in isolation) is not accused of infringing the Patents-in-Suit. This would have been an important consideration at the hypothetical negotiation because pCTRs [redacted] In particular, pCTRs are used (in combination with advertisers' bids and other factors) during the auction itself to determine the ranking and pricing of ads.[268] It is my understanding that neither the computation of pCTR nor the use of pCTR [redacted] are accused in this matter. Rather, the Accused Functionality is limited to [redacted]. Thus, the claimed benefits to Google of a license to the Patents-in-Suit would not extend [redacted]

2. Implementation Of The Accused Functionality Depends Upon Google's Contributions

104. Significant contributions beyond a bare license to the Patents-in-Suit were required for Google to implement the Accused Functionality. A license to the Patents-in-Suit would not have provided Google with any of the practical requirements for implementing the Accused Functionality within the Accused Products, including the necessary hardware infrastructure or software programming that successful commercialization of the Accused Products requires. In particular, although the Accused Functionality relates to [redacted] pCTR, the actual computation of pCTR is not covered by the Patents-in-Suit, and a license to the Patents-in-Suit would not have provided

[268] *Bid for Position, LLC v. AOL Inc. et al.*, 601 F.3d 1311 – 1313 (Fed. Cir. 2010) and [redacted]

Google with the method of computing the pCTRs required to implement the Accused Functionality.[269]

105. [redacted]. Google's ads quality team includes "economists, statisticians and engineers dedicated to evaluating ads and running tests to determine how we [Google] can identify the highest quality ads from the lowest quality ads."[270] "[A]t any given time," the ads quality team is "running hundreds of experiments" with the goal of "continuous improvement" and "[c]onstant innovation."[271] Google continually is improving and making changes to its ads system.[272] Specifically with respect to ads quality improvements, Google makes approximately 30 changes to the ads system per quarter. These changes are intended to improve the quality of the results that Google shows its users. Across the entire ads system, Google makes about 100 changes per quarter.[273]

106. [redacted] Moreover, a license to the Patents-in-Suit would not have [redacted]

[269] Based upon a discussion with Dr. Ungar.

[270] 2008 Google Ads Narratives. (G-IPE-0264232 – 233.) (Bracketed text added for clarification.)

[271] 2008 Google Ads Narratives. (G-IPE-0264232 – 233.)

[272] Trial Testimony of Jeff Huber, August 5, 2010, pp. 29 – 30, *Bright Response v. Google*.

[273] Trial Testimony of Jeff Huber, August 5, 2010, pp. 29 – 30, *Bright Response v. Google*.

[redacted]

a. Smart Ads, pCTRs, and [redacted]. I understand that Smart Ads generates pCTRs for advertisements, [redacted] It is my understanding that the Patents-in-Suit disclose nothing about [redacted]

b. [redacted] It is my understanding that the Patents-in-Suit do not teach either of these algorithms, or the specific inputs used by Google in the algorithms.[280]

3. The Accused Functionality Incorporates Factors Unrelated To The Patents-In-Suit

107. Dr. Frieder described the Accused Functionality as "filter[ing] advertisements in response to a search query from a user using pCTR."[281] As currently implemented by Google, the [redacted] included in the Accused Functionality are based

[274] Based upon a discussion with Dr. Ungar.

[275] Smart Ad Selection System (SmartASS™) (G-IPE-0002076 – 80 at 76 – 78) and based upon a discussion with Dr. Ungar.

[276] Based upon a discussion with Dr. Ungar.

[277] Based upon a discussion with Dr. Ungar.

[278] Smart Ad Selection System (SmartASS™) (G-IPE-0002076 – 80 at 78), [redacted]), and based upon a discussion with Dr. Ungar.

[279] G-IPE-0865458 and based upon a discussion with Dr. Ungar.

[280] Based upon a discussion with Dr. Ungar.

[281] Frieder Report, p. 25.

upon a number of factors. [redacted] such as landing page quality, keyword spam score, and "relevance score."[283]

108. [redacted]

[282] Alferness Deposition, June 21, 2012, pp. 17 – 18.

[283] Alferness Deposition, June 21, 2012, pp. 64 – 67.

[284] Advertisers may designate ads as "exact match" or, in the alternative, as "broad match" or "expanded match." An exact match ad is shown only when the user's search query contains the exact keyword(s) entered by the advertiser. A broad or expanded match ad is shown whenever the user's search query contains the keywords entered by the advertiser or related keywords as identified by Google. (Alferness Deposition, June 21, 2012, pp. 210 – 211.)

[285] Based upon a discussion with Dr. Ungar.

[286] Alferness Deposition, June 21, 2012, p. 29 and based upon a discussion with Dr. Ungar.

[287] Alferness Deposition, June 21, 2012, p. 221.

[redacted]

109. It is my understanding that the Patents-in-Suit do not cover [redacted] play an important role in the Accused Functionality as currently implemented by Google. [redacted], Google significantly enhanced the Accused Functionality beyond the claimed teachings of the Patents-in-Suit.

[288] Alferness Deposition, June 21, 2012, pp. 130 – 132 and based upon a discussion with Dr. Ungar.

[289] Alferness Deposition, June 21, 2012, pp. 130 – 132.

[290] Furrow Deposition, pp. 248-249.

[291] Furrow Deposition, pp. 248-249.

[292] Furrow Deposition, pp. 71, 96 – 97, and 108.

[293] Furrow Deposition, pp. 87 – 88.

[294] Cook Deposition, p. 35 and Furrow Deposition, pp. 87 – 88.

110. Similarly, I understand that within Google.com search results, ads may appear above, to the right hand side of, or below the search results.[295] Ads that appear above the search results are [redacted]

111. As discussed in detail above, Google uses the Accused Functionality [redacted] practice the "filtering" steps in the asserted claims of the Patents-in-Suit. However, I understand the asserted claims do not teach using filtering steps in an advertising auction. It is my understanding that the Patents-in-Suit do not include any reference to an auction. Thus, the Patents-in-Suit do not teach how to use "filtering" steps in a modified second-price auction [redacted]

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[295] I understand that Google recently allowed ad results to appear below the search results rather than to the right in certain circumstances. "Why is my ad appearing below search results." (http://support.google.com/adwords /bin/answer.py?hl=en&answer= 1702897, viewed on August 29, 2012.)

[296] Alferness Deposition, June 21, 2012, pp. 130 – 132.

[297] Alferness Deposition, June 21, 2012, pp. 129 – 130.

[298] Alferness Deposition, June 21, 2012, p. 130.

[redacted][redacted] [redacted], Google significantly enhanced the Accused Functionality beyond the claimed teachings of the Patents-in-Suit.

112. Moreover, as discussed above, the Patents-in-Suit do not teach how to use the Accused Functionality to show advertising results above or alongside natural search results on a web page.[300] Again, Google has significantly enhanced the Accused Functionality beyond the claims of the Patents-in-Suit.

4. [redacted]

113. [redacted]

114. [redacted]

[299] Based upon a discussion with Dr. Ungar.

[300] Based upon a discussion with Dr. Ungar.

[redacted]

[redacted]

[redacted]

C. The Success Of Google's Search Advertising Systems Is Not Attributable To The Technology Claimed By The Patents-In-Suit[305]

116. The success of Google's search advertising systems is not attributable to the relevance filtering technology claimed by the Patents-in-Suit. In this section of my report, I provide evidence that the technology disclosed by the Patents-in-Suit is not sufficient to achieve commercial success; consequently, the success of Google's search advertising systems cannot be attributed to the claimed patented technology.

117. In addition to Google's search advertising systems, AOL's "Advertising.com Sponsored Listings" has been accused of infringing the Patents-in-Suit.[306, 307] If it were true, as the

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[redacted]

[304] *Bid for Position v. AOL et al.*, 601 F.3d 1311, 1313 (Fed. Cir. 2010).

[305] This section is related to *Georgia-Pacific* factors 8 and 15 and is summarized in **Appendix A**.

Plaintiff alleges, that the technology claimed by the Patents-in-Suit drives the success of the accused search advertising systems, then one would expect all of the accused systems to be similarly successful. On the contrary, there is a wide variation in the success of the accused systems. [redacted]

118. The significant variation in the levels of success of different search advertising systems alleged to employ the same patented technology serves to highlight that the success of the Google's search advertising systems is not due to the claimed benefits of the Patents-in-Suit; Google-specific contributions drive the success of the accused systems independent of the claimed teachings of the Patents-in-Suit.

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306 Complaint, p. 11. In the Complaint, I/P Engine also accused IAC's Ask Sponsored Listings of infringing the Patents-in-Suit. However, I understand that I/P Engine decided to not go forward with infringement claims against IAC's Ask Sponsored Listings.

[redacted]

[redacted]

[redacted]

D. Google's Licensing Practices And Agreements[310]

1. [redacted]

[redacted] From an economic and business perspective, the following considerations support [redacted] a lump-sum payment royalty structure when entering into in-bound patent license agreements: (a) reduced administrative burdens, (b) reduced costs to develop royalty reports, (c) reduced need to communicate confidential business information to third parties, (d) reduced likelihood of royalty-payment related disputes, and (e) increased budgetary certainty. [redacted]

> [redacted]

> [redacted]

[310] This section is related to *Georgia-Pacific* factor 2, 3, 12, and 15 and is summarized in **Appendix A**.

[redacted]

[redacted]

120. I explain the above considerations in more detail below. These considerations indicate that Google would have negotiated a lump sum payment for a license to the Patents-in-Suit during the hypothetical negotiation with Lycos.[314]

a. Lump-Sum Payment Structure Reduces Administrative Burdens. The administrative burden associated with running royalty payments includes recording the output levels or revenues associated with products utilizing the licensed patents, data collection, and monitoring costs. These administrative burdens are incurred by both licensee (in terms of collecting data) and licensor (in terms of monitoring the data collection by the licensee) under a running royalty payment structure, but not under a lump-sum payment structure.

b. Lump-Sum Payment Structure Reduces The Need To Develop Reports. A running royalty payment structure requires that information be organized, analyzed, and shared between the licensee and the licensor via reports. Additional reports are required to document the actual transactions of the royalty payments that occur in each period. A lump-sum payment structure does not require the tracking of sales information, and the reporting of royalty payments between the licensor and licensee occurs only once.

c. Lump-Sum Payment Structure Reduces The Possibility Of Having To Communicate Confidential Information. In addition to reporting the volumes associated with the licensed products, a running royalty payment structure frequently gives the licensor the right to audit the licensee's records to ensure the accuracy of the licensee's reporting. This process often leads to the sharing of confidential information or information not immediately pertinent to the licensed products, especially when multiple products utilize the licensed technology. A lump-sum payment structure helps the licensee protect confidential information it does not wish to share with the licensor.

d. Lump-Sum Payment Structure Reduces The Likelihood Of Disputes Between The Parties. Disputes between licensees and licensors can arise for a variety of reasons. For example, under a running royalty payment structure there could be a disagreement regarding the appropriate royalty base to which the agreed upon royalty rate should be applied. It is possible that the natural evolution of products (as newer technologies, features, or functionalities are adopted) could alter the licensors' and licensees' perception of whether their earlier agreed upon royalty rate remains appropriate to apply to certain products or services or whether the earlier agreed upon

[314] Based upon a discussion with Mr. Maccoun.

royalty rate should be applied to additional products. These disagreements would not surface under a lump-sum royalty payment structure.

e. Lump-Sum Payment Structure Provides Certainty For Budgeting. Forecasts of cash inflows (relevant for licensors) and outflows (relevant for licensees) contain greater levels of uncertainty for firms operating under a running royalty payment structure as compared to a lump-sum royalty payment structure. In addition, a running royalty rate is a variable cost for the licensee and reduces the incremental profitability associated with the licensed products.

121. Further, from an economic perspective, it would have been Google's position that it is Google's products that create recurring value and revenue. [redacted]

> [redacted] revenue that we receive is created by our products, not by the patent.

122. Consequently, Google would not have been willing to make recurring royalty payments proportional to the success of its products and the strength of its product revenues. Google's expected future contributions to the on-going successful commercialization of the Accused Products would diminish the relative importance of the Accused Functionality over time. These factors weigh in favor of a lump-sum payment structure and against a running royalty rate payment arrangement.

[redacted]

2. Google's In-Bound Patent License And/Or Patent Purchase Agreements

123. [redacted]

124. Of these agreements, I have focused on the nine patent license agreements and/or patent acquisition agreements Google entered into in the normal course of business. This is because at the hypothetical negotiation, Google and Lycos would have negotiated a non-exclusive, bare patent license without software, source code, technology transfer, and/or cross licensing rights.[318] I discuss each of these nine agreements in chronological order below.

a. [redacted]

[redacted]

[317] Google also produced services agreements between Google and the other Defendants relating to services provided by Google such as AdSense for Search.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

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[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

3. Summary

125. All the patent license and/or patent acquisition agreements discussed above that Google entered into in the normal course of business have lump-sum royalty payments [redacted] These agreements provide guidance to the royalty payment structure and amount Google would have negotiated with Lycos for a license to the Patents-in-Suit.

a. The highest lump-sum payment in these Google agreements is [redacted] This agreement involves a patent purchase, which confers more value than a patent license. Additionally, this agreement involves [redacted] whereas the hypothetical negotiation would have involved a license to two patents. All else being equal, given these considerations (i.e., a patent purchase [redacted] the royalty payment in the [redacted] agreement requires a downward adjustment relative to the royalty payment that Lycos and Google would have negotiated.

[redacted]

b. In Google's patent acquisition agreement [redacted], the acquired technology relates to Internet advertising, specifically "the quality of advertising"[347] (i.e., a similar subject matter claimed by the Patents-in-Suit).[348] In light of the following considerations, the reasonable royalty in the [redacted] agreement requires a downward adjustment relative to the royalty payment that Lycos and Google would have negotiated.

   i. The [redacted] agreement involved the sale of patents (as opposed to a patent license under the hypothetical negotiation construct). Therefore, all else being equal, the rights granted under the [redacted] agreement are more valuable than the rights that Google would have negotiated with Lycos at the hypothetical negotiation.

   ii. [redacted]

   In contrast, Mr. Blais, General Counsel of Lycos, testified that he was unaware of any attempts by Lycos to create products "with the intent specifically to embody the [Patents-in-Suit]."[351] Lycos' lack of commercialization efforts specifically related to the Patents-in-Suit would place downward pressure on the reasonable royalty payment relative to [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

351 Blais Deposition, p. 17.

E. Acceptable Non-Infringing Alternatives[352]

126. Google was founded as a search engine company. Google continues to constantly innovate and improve the quality of its search and advertising results and would have had options to use as alternatives to the claimed teachings of the Patents-in-Suit at the time of the hypothetical negotiation with Lycos. The availability of acceptable non-infringing alternatives to the claimed teachings of the Patents-in-Suit would have placed a constraint on Google's willingness to pay for a license to the Patents-in-Suit.

127. Based upon a discussion with Dr. Ungar (Google's technical expert), Mr. Nick Fox (Vice President of Product Management at Google), and Mr. Jonathan Alferness (Director of Product Management at Google), it is my understanding that at the time of the 2004 hypothetical negotiation, Google would have been able [redacted] by employing any of the following alternative options:

a. [redacted]

b [redacted]

c. [redacted].

[352] This section is related to *Georgia-Pacific* factors 9, 10, 11, 12, and 15 and is summarized in **Appendix A**.

[redacted]

128. Based upon discussions with Dr. Ungar, Mr. Nick Fox, and Mr. Jonathan Alferness, I understand that these alternative options would have been technically feasible and relatively easy to implement in the normal course of business (including in the normal course of software updating and maintenance). I understand that these alternative options would have been acceptable to Google, its advertisers, and its users. The efforts spent on software programming, testing, and roll-out would have been performed by software engineers that were already employed by Google and would not have resulted in incremental costs to Google.[354]

XI. OUTCOME OF THE HYPOTHETICAL NEGOTIATIONS BETWEEN LYCOS AND GOOGLE

129. The hypothetical negotiation construct assumes, *inter alia*, that the negotiated royalty payment structure and associated royalty payment are determined based upon full consideration of the relevant facts that are important and germane to prudent negotiators. These qualitative and quantitative considerations and an assessment of the *Georgia-Pacific* factors (as presented throughout my report and as summarized in **Appendix A**), determine the likely outcome of a hypothetical negotiation between Lycos and Google for a non-exclusive, freedom-to-operate, U.S. license to the Patents-in-Suit.

130. In the Summary of Opinions section of my report (i.e., **Section II**), I have outlined the various considerations that would have been present during the hypothetical negotiation between Lycos and Google for a license to the Patents-in-Suit. That full outline will not be repeated here but is incorporated by reference. As has been presented throughout my report, important factors determining the outcome of the hypothetical negotiations

[354] As of December 31, 2004, approximately 33% of Google's 3,021 employees were dedicated to Research and Development. (Google Inc. Form 10-K for the year ending December 31, 2004, p. 14.)

include, but are not limited to, (a) Google's substantial contributions (unrelated to the Patents-in-Suit) to the Accused Products, (b) the limited benefits of the claimed teachings of the Patents-in-Suit to Google, (c) the significant benefits Lycos would derive from licensing to Google, (d) Lycos' lack of commercialization or licensing efforts related to the Patents-in-Suit, and (e) Lycos' business difficulties, *inter alia*.

131. Based upon the relative negotiating positions of the parties and economic considerations discussed throughout my report, I am of the opinion that Lycos and Google would have negotiated a fully paid-up, freedom-to-operate, non-exclusive U.S. license to the Patents-in-Suit, for the life of the Patents-in-Suit, for a lump sum amount [redacted]

132. A [redacted] lump-sum royalty payment is consistent with the business and economic considerations discussed throughout my report. This royalty payment also is consistent with the value indicators related to the Patents-in-Suit, which include but are not limited to the following:

a. Google's lump-sum payment of [redacted] relating to its patent assignment and license agreement with [redacted]

b. Google's license agreement in December 2008 [redacted]

c. [redacted]

d. Lycos' sale of the patent family that includes the Patents-in-Suit to Smart Search Labs for a [redacted] lump-sum payment in June 2011; and

e. the availability of acceptable non-infringing options open to Google.

XII. SUMMARY OF I/P ENGINE'S CLAIMED ROYALTY DAMAGES AS PRESENTED BY DR. BECKER

133. Dr. Becker was retained by counsel for I/P Engine to evaluate I/P Engine's claimed royalty damages. Dr. Becker submitted his expert report on July 25, 2012 (the "Becker Report"). In this section of my report, I summarize I/P Engine's claimed royalty damages as presented by Dr. Becker.

A. Hypothetical Negotiation Date And Parties

134. Dr. Becker assumed that the alleged infringement began in the first quarter of 2004 when Google implemented its Smart Ads Serving System.[355] Based upon this assumption, Dr. Becker concluded that the "hypothetical negotiation to determine a reasonable royalty would be conducted between Lycos, Inc. ("Lycos") and Google during the first quarter of 2004."[356]

B. Claimed Royalty Rate

135. In his analysis of *Georgia-Pacific* Factor 1, Dr. Becker opined that Lycos' agreements involving the Patents-in-Suit are not "instructive for determining a reasonable royalty rate for the hypothetical negotiation in this litigation."[357] In his analysis of *Georgia-Pacific* Factor 2, Dr. Becker opined that none of Google's agreements, with the exception of the settlement agreement with Overture, "provide information that informs the hypothetical negotiation for a license to the patents-in-suit."[358] Dr. Becker used Overture's license agreements relating to the '361 Patent with Marchex, [redacted] and Interchange in his

[355] Becker Report, pp. 5 and 13 – 14.

[356] Becker Report, p. 5.

[357] Becker Report, p. 18.

[358] Becker Report, p. 20.

discussion of *Georgia-Pacific* Factor 12 "to form the starting point reasonable royalty rate range of [redacted]."[359]

136. Given this "starting point," Dr. Becker utilized his analysis of the remaining *Georgia-Pacific* Factors to arrive at his final claimed royalty rate. Dr. Becker stated that the "attractiveness of Google as a licensee [*Georgia-Pacific* Factor 5] . . . suggests a rate at the low end of this range."[360] Further, Dr. Becker stated that "Factors 8-11 suggest increases in the royalty rate, albeit modest influences in relation to the downward influence of Factor 5."[361] Dr. Becker concluded that "[i]n light of the foregoing considerations, it is [his] opinion that the parties would have agreed to a running royalty rate of [redacted]."[362]

C. Claimed Royalty Base

137. Dr. Becker stated that the accused revenues include U.S. revenues associated with the Accused Products (i.e., Google's AdWords, AdSense for Search, and AdSense for Mobile Search).[363] Dr. Becker then calculated claimed apportionment percentages stating that "an apportionment of Google's U.S. AdWords and AdSense revenues is necessary to

[359] Becker Report, p. 45.

[360] Becker Report, p. 53.

[361] Becker Report, p. 53.

[362] Becker Report, p. 53.

[363] Becker Report, p. 15. [redacted]

arrive at a royalty base that most closely reflects the revenues attributable to the accused system implemented by Google in 2004."[364]

138. [redacted]

139. [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted]

Table 3

Accused Revenues and Claimed [redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

D. Claimed Royalty Damages

141. Dr. Becker calculated claimed royalty damages by applying the [redacted] claimed royalty rate to the claimed apportioned royalty base.[375] Dr. Becker stated that these claimed royalty damages "represent damages related to Defendants' infringement and are inclusive of AdSense for Search revenues (and associated damages) that Google shares with publisher

[redacted]

[375] Becker Report, pp. 6 and 53. *See also* Becker Exhibits SLB-1 and SLB-2

websites such as co-defendants AOL, IAC, Gannett, and Target."[376] **Table 4** provides the claimed royalty damages for each Accused Product as presented by Dr. Becker.

[redacted]

[redacted]		
[redacted]		[redacted]
[redacted]		[redacted]
[redacted]		[redacted]
[redacted]		[redacted]

XIII. EVALUATION OF I/P ENGINE'S CLAIMED ROYALTY DAMAGES AS PRESENTED BY DR. BECKER

142. My evaluation of I/P Engine's claimed royalty damages as presented by Dr. Becker is based upon (a) my economics and damages quantification training and experience, (b) my review of the Becker Report, (c) documentary evidence, (d) deposition testimony, (e) standard damage quantification methodologies, (f) a hypothetical negotiation between Lycos and Google at the time of the first alleged infringement for a non-exclusive, freedom-to-operate, U.S. license to the asserted Patents-in-Suit, (g) guidance provided by various district court and Federal Circuit opinions, and (h) other important economic and business considerations germane to an analysis of claimed royalty damages.

143. A bullet point summary of my evaluation of I/P Engine's claimed royalty damages as presented by Dr. Becker is provided here and is developed in more detail in subsequent sections of my report. Generally, Dr. Becker's analysis does not provide the trier-of-fact

[376] Becker Report, pp. 5 and 53. *See also* Becker Exhibit SLB2a, which according to Dr. Becker, "provides a detail of the damages attributable to the portion of the revenues that Google shared with co-defendants AOL, IAC, Gannett, and Target." (Becker Report, p. 53)

[377] Becker Report, Exhibit SLB-1.

with any guidance as to I/P Engine's claimed royalty damages for at least the following reasons.

a. Dr. Becker opined to an incorrect royalty payment structure.

b. Dr. Becker overstated the claimed royalty rate.

c. Dr. Becker overstated the claimed royalty base.

d. Dr. Becker failed to acknowledge various reasonableness checks that would have indicated the unreasonable nature of his claimed damages opinion.

144. Contained throughout the remainder of my report are my detailed observations concerning Dr. Becker's claimed royalty damages analysis.

XIV. CLAIMED ROYALTY PAYMENT STRUCTURE IS INCORRECT

145. Dr. Becker opined that "a running royalty is the appropriate structure to be used in the determination of damages in this case."[378] Dr. Becker's royalty structure conclusion is flawed in light of Google's and Lycos' negotiating positions.

a. Google. [redacted] Dr. Becker failed to place proper weight on Google's significant contributions to the Accused Products and other business considerations which weigh in favor of a lump-sum structure.

b. Lycos. Dr. Becker failed to appropriately consider Lycos' agreements involving the Patents-in-Suit, [redacted].

A. Dr. Becker Failed To Appropriately Consider Google's Licensing Preferences And Google's Contributions To Accused Products

146. In opining on a running royalty payment structure, Dr. Becker failed to give appropriate weight to the following Google-specific considerations that support a lump-sum royalty payment structure.

a. Google's Strong Preference For Lump-Sum. As discussed earlier, Google has a strong preference for entering into lump-sum agreements when licensing patents.

[378] Becker Report, p. 15.

Google's inbound patent licensing/acquisition agreements provide documented support that Google has a strong preference for licensing patents on a lump-sum basis. Dr. Becker acknowledged, but placed no weight on the advantages of a lump-sum royalty payment structure "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."[379]

b. Google's Contributions In Creating And Improving the Accused Products. As discussed earlier in my report, Google makes substantial contributions in creating and improving the Accused Products. From an economic perspective, Google would have known that it is Google's products that create recurring value and revenue. Consequently, Google would have been reluctant to make royalty payments related to the success of its products and strength of its product revenues. In addition, given the many features contained in Google's product offerings and given the continuous updating of these features, it is likely any contribution made by a relatively minor technology to the commercial success of Google's products diminishes over time. These factors weigh against a running royalty rate payment arrangement as opined to by Dr. Becker.

147. In addition, Dr. Becker's claimed running royalty structure is overly complex. Dr. Becker's claimed royalty rate of [redacted] is applied to an apportioned royalty base. The fact that Google would have to calculate an apportioned royalty base in line with Dr. Becker's claim and then apply the [redacted] royalty rate adds a greater level of complexity than a lump-sum royalty payment structure would entail.[380] Based upon factors discussed throughout my report, and in particular the reasons surrounding Google's preference for a lump-sum payment structure, Dr. Becker's claimed payment structure introduces a level of complexity to which Google would not have agreed at the time of the hypothetical negotiation. [redacted], Google prefers a lump-sum

[379] Becker Report, p. 51. Additionally, Dr. Becker claimed that certain agreements were not probative because "insufficient information was provided to convert the lump sum into a comparable running royalty rate." [redacted]

[380] As discussed in more detail below, Dr. Becker also fails to explain how Google and Lycos would have been able to calculate the royalty base associated with the Accused Functionality at the time of the hypothetical negotiation.

royalty payment structure because of the following reasons: (a) reduced administrative burdens, (b) reduced costs to develop royalty reports, (c) reduced need to communicate confidential business information to third parties, (d) reduced likelihood of royalty-payment related disputes between the parties, and (e) increased budgetary certainty.

B. Dr. Becker Failed To Appropriately Consider Lycos' Agreements Involving The Patents-In-Suit

148. As the hypothetical negotiation would have occurred between Lycos and Google, it would be important to consider Lycos' licensing agreements and practices in determining the structure of the royalty payment. As discussed earlier, Lycos indicates a willingness to accept a lump-sum royalty payment structure. Lycos sold eight patents including the Patents-in-Suit to Smart Search Labs for a lump-sum payment of [redacted].[381] [redacted].

XV. DR. BECKER OVERSTATED THE CLAIMED ROYALTY RATE

A. Dr. Becker Relied Upon Overture License Agreements, Which Are Not Probative In This Matter

149. In his analysis of *Georgia-Pacific* Factor 12, Dr. Becker discussed [redacted] license agreements relating to Overture/Yahoo!'s licensing of U.S. Patent No. 6,269,361 (the "'361 Patent") to other parties.[383] Overture, previously known as GoTo.com, launched a

[381] *See* **Section IX.F.**

[382] *See* **Section IX.G**.

[383] Becker Report, pp. 37 – 45.

paid search engine in 1998.[384] Overture's introduction of a cost-per-click method of advertising for search engines was in connection to the '361 Patent.[385] Under Overture's business model, "[t]he search listings are ranked by the advertisers' bid; the higher the bid, the higher the ranking. Advertisers pay Overture the bid price for clicks on the advertisers' search listing."[386] Overture's paid search platform became the advertising choice for major search engines, including Yahoo! and Microsoft.[387] Overture was acquired by Yahoo! in October 2003.[388] I understand that Overture's paid search business model practices the teachings of the '361 Patent.[389]

150. [redacted] A summary of the Overture/Yahoo! agreements is presented in **Exhibit 7**.

151. In his discussion of the Overture/Yahoo! license agreements as they pertain to *Georgia-Pacific* Factor 12, Dr. Becker identified [redacted]

384 "The history of Overture." (http://www.webhostingreport.com/learn/overture.html, viewed on August 21, 2012.)

385 Internet Advertising and the Generalized Second-Price Auction: Selling Billions of Dollars Worth of Keywords." (http://faculty-gsb.stanford.edu/ostrovsky/papers/gsp.pdf, viewed on August 24, 2012.)

386 Overture Services, Inc. Form 10-k for the fiscal year ended December 31, 2002, p. 4.

387 "Internet Advertising and the Generalized Second-Price Auction: Selling Billions of Dollars Worth of Keywords." (http://faculty-gsb.stanford.edu/ostrovsky/papers/gsp.pdf, viewed on August 24, 2012.)

388 "Yahoo! and Overture Announce Completion of Acquisition", October 7, 2003. (http://yhoo.client.shareholder.com/releasedetail.cfm?releaseid=119517, viewed on August 19, 2012.)

389 "Overture Services, The Leading Pay-for-Performance Search Provider," Credit Suisse Equity Research, April 8, 2002, p. 17.

[redacted]

a. an agreement between Overture and Marchex, Inc. ("Marchex") [redacted]

[redacted]

c. an agreement between Overture and Interchange Corporation ("Interchange") [redacted]

152. In his evaluation of these three agreements, Dr. Becker stated that these agreements "provide relevant information with respect to a reasonable royalty for the patents-in-suit" based upon his discussions with Plaintiff's technical expert (i.e., Dr. Frieder) regarding the comparability between the '361 Patent and the Patents-in-Suit.[394] In analyzing these [redacted], Dr. Becker concluded that the terms of the agreements "form a starting point [redacted][395] Taken in consideration with the analysis of the other *Georgia-Pacific* Factors, these agreements provided the foundation for Dr. Becker's claimed [redacted] royalty rate to be applied to his apportioned royalty base.[396]

[390] Becker Report, pp. 37 – 38.

[redacted]

[394] Becker Report, pp. 37 – 38.

[395] Becker Report, p. 45.

[396] Becker Report, p. 53.

153. However, the [redacted] Overture agreements relied upon by Dr. Becker are not probative of a reasonable royalty payment Lycos and Google would have negotiated for at least the following reasons.

a. Lycos Had Never Based Its Licensing Decisions On Overture Agreements Relating To The '361 Patent. The [redacted] license agreements Dr. Becker relied upon would not have been the foundation for a royalty rate to be determined at the hypothetical negotiation between Lycos and Google. Mr. Blais testified that Lycos had never based its licensing decisions on Overture agreements relating to the '361 Patent.[397]

> Q: Has Lycos ever based any of its patent licensing decisions on agreements between Overture and third parties related to the '361 Patent?
> A: I don't believe so, no.

b. Technical Differences Between The '361 Patent And The Patents-In-Suit. Dr. Becker utilized [redacted] license agreements pertaining to Overture's licensing of U.S. Patent No. 6,269,361 (the "'361 Patent"), as well as several related patents, to third-parties. The '361 Patent, entitled "System and Method for Influencing a Position on a Search Result List Generated by a Computer Network Search Engine," was issued on July 31, 2001. According to Overture, the '361 Patent covers "various features and innovations relating to bid-for-placement products and Overture's Pay-For-Performance search technologies, including [its] Direct Traffic Center account management system and tools."[398] Dr. Becker justified his use of the license agreements for the '361 Patent as a benchmark for determining a royalty for the Patents-in-Suit by stating that based upon "discussions with Dr. Frieder . . . the patented technology described by the '361 Patent is sufficiently comparable to the '420 and '664."[399] However, according to Dr. Ungar, from a technical perspective, the '361 Patent is dissimilar from the Patents-in-Suit. The '361 Patent discloses an advertising system where rank position is determined through an auction based upon bid, and advertisers are charged their bid amount each time a user clicks on the advertisement. In comparison, it is my understanding the Patents-in-Suit barely mention advertisements and never mention bidding, auctions, prices, or charging advertisers on a per-click basis.[400] Rather, it is my understanding the Patents-in-Suit disclose traditional means of filtering. I understand that the '361 Patent has little to do with the alleged inventions of the asserted patents other than that they both involve

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[397] Blais Deposition, p. 108. (Objections omitted.)

[398] Overture Services, Inc. Form 10-k for the fiscal year ended December 31, 2002, p. 9. *See also* U.S. Patent No. 6,269,361.

[399] Becker Report, p. 37.

[400] Based upon a discussion with Dr. Ungar.

queries.[401] I further understand that unlike the '420 and '664 Patents, as asserted by Plaintiff, the '361 Patent does not include any consideration of the quality of advertisements.[402] Accordingly, it would be inappropriate to use a license to the '361 Patent as a benchmark for a royalty determination in this matter.

c. Seminal Nature Of The '361 Patent. Besides the significant technical differences between the '361 Patent and the Patents-in-Suit, it is my understanding that the '361 Patent is a seminal patent holding much more significant value than the Patents-in-Suit. I understand that the '361 Patent disclosed an entire business model (i.e., a cost per click method of advertising for search engines).[403] In an analyst report covering Overture, Credit Suisse Equity Research described the '361 Patent as "encompass[ing] an advertiser's ability to bid for placement real-time in search listings," being "at the heart of the pay-for-performance model," and "a key competitive barrier" for Overture which pioneered the sponsored search market.[404] The paid search platform underlying the '361 Patent became the advertising choice for major search engines, including Yahoo! and Microsoft.[405] Given that the technology covered by the '361 Patent is pioneering and underlies the development of the paid search business model, I understand that it is of significantly greater importance than the technology claimed by the Patents-in-Suit.[406] As a result, the '361 Patent would command a significantly higher royalty payment than the Patents-in-Suit.

d. [redacted]

[redacted]

[redacted]

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[401] Based upon a discussion with Dr. Ungar.

[402] Based upon a discussion with Dr. Ungar.

[403] Based upon a discussion with Dr. Ungar.

[404] "Overture Services, The Leading Pay-for-Performance Search Provider," Credit Suisse Equity Research, April 8, 2002, p. 17.

[405] "Internet Advertising and the Generalized Second-Price Auction: Selling Billions of Dollars Worth of Keywords." (http://faculty-gsb.stanford.edu/ostrovsky/papers/gsp.pdf, viewed on August 24, 2012.)

[406] Based upon a discussion with Dr. Ungar.

[407] "Overture Services, The Leading Pay-for-Performance Search Provider." Credit Suisse Equity Research, April 8, 2002, p. 17. *See also* U.S. Patent No. 6,078,866.

[redacted]

[redacted]

Dr. Becker failed to consider that a license which includes the seminal '361 Patent [redacted] would command a significantly higher value than a license to the two patents at issue.

e. Overture's Commercial Success. Overture was a leader in paid search by the time it entered into the agreements that Dr. Becker relied upon in forming his royalty rate opinion. Dr. Becker acknowledged the commercial success garnered by Overture's patented technology when he stated that "[b]y 2000, a more transparent, auction-based, pay-per-click model has become the standard, driven by systems from Overture Services and Google's AdWords."[412] The proven nature of Overture's '361 Patent portfolio is demonstrated by the large base of advertisers, users, and affiliate partners Overture established, *inter alia*. Examples of the commercial success created by Overture's patented technology are provided below.

i. Number Of Advertisers. Within a year of launching its service, as of June 1999, Overture had 10,000 advertisers.[413] When Yahoo! completed its acquisition of Overture in October 2003, Overture had over 100,000 advertisers globally.[414]

[redacted]

410 Becker Report, p. 44.

[redacted]

412 Becker Report, pp. 6 – 7.

413 "Overture Services, the Leading Pay-for-Performance Search Provider", Credit Suisse Equity Research, April 8, 2002, p. 10.

414 "Yahoo! and Overture Announce Completion of Acquisition", October 7, 2003. (http://yhoo.client.shareholder.com/releasedetail.cfm?releaseid=119517, viewed on August 19, 2012.)

ii. Revenues. In 2002, Overture facilitated 2.2 billion paid clicks and achieved revenues of over $667 million.[415]

iii. Extensive Affiliate Network. Overture was able to build an extensive affiliate network that included Yahoo!, Microsoft's Internet Explorer, msn.com, AltaVista, AOL's Netscape Premier Provider, AOL Europe, Terra Lycos, CNET, and InfoSpace.[416]

iv. Significant Reach. Through its network of affiliates, by February 2002, Overture provided its advertisers "one point of contact" to reach approximately 85% of internet users. According to Credit Suisse, "Overture's unique search methodology provides an efficient search process for users performing Internet searches."[417]

Whereas Overture achieved significant commercial success with the paid search technology taught by the '361 Patent portfolio, Lycos provided no evidence of a commercially successful product that practices the claimed teachings of the Patents-in-Suit. The fact that Lycos had not successfully created a product embodying the claimed teachings of the Patents-in-Suit would have weakened its negotiating position at the time of the hypothetical negotiation. Additionally, Google would have recognized this fact and would have been unwilling to agree to a royalty rate as high as those found in the Overture agreements.

f. Licensees In The Overture Agreements Are Not Comparable To Google. The following is a brief description of the [redacted] licensees to the Overture agreements identified by Dr. Becker as being probative to the determination of a reasonable royalty in this matter.

i. Marchex. As of 2004, Marchex described itself as a company that "connect[ed] merchants with consumers who are searching for information, products and services on the Internet."[418]

ii. [redacted]

[415] Overture Services, Inc., Form 10-K for year ending December 31, 2002, pp. 13 and 16.

[416] Overture Services, Inc. Form 10-k for the fiscal year ended December 31, 2002, p. 18.

[417] "Overture Services, the Leading Pay-for-Performance Search Provider", Credit Suisse Equity Research, April 8, 2002, pp. 6 – 7 and 16.

[418] Marchex, Inc. Form 10-K for the fiscal year ended December 31, 2004 ("Marchex 2004 10-K"), p. 1. Currently, Marchex is a "digital call advertising and small business marketing company." Marchex is focused on helping customers "find local information." (Marchex, Inc. Form 10-K for the fiscal year ended December 31, 2011 ("Marchex 2011 10-K"), p. 2.)

[redacted]

[redacted]

iii. Interchange. As of 2004, Interchange "provid[ed] paid-search advertising services to businesses on the Internet" using its "local search and advertising platform."[422]

The licensees in the [redacted] agreements relied upon by Dr. Becker in forming his opinion regarding a royalty rate in this matter are not comparable to Google. By the end of 2004, Google was already "a global technology leader" with "innovations in web search and advertising [that] made [its] web site a top Internet destination and [its] brand one of the most recognized in the world."[423] The licensees discussed above either provide limited search (i.e., local search in the case of Marchex and Interchange [redacted] The contributions of the licensees in these [redacted] Overture agreements would not be representative of Google's contributions to a license with Lycos at the time of the hypothetical negotiation.

154. Given the above considerations, there is not a reasonable basis to use license agreements involving the '361 Patent to determine a reasonable royalty for the Patents-in-Suit. Dr. Becker significantly overstated the claimed royalty rate by utilizing Overture's license agreements as a benchmark.

[redacted]

422 Interchange Corporation form 10-K for the fiscal year ended December 31, 2004 ("Interchange 2004 10-K"), pp. 2 – 3. Interchange changed its name to Local.com on November 2, 2006. Currently, Interchange is "a local media advertising company that enables local businesses and consumers to find each other and connect." Interchange/Local.com helps businesses "reach consumers online in their local markets." (Local.com Corporation form 10-K for the fiscal year ended December 31, 2011 ("Local.com 2011 10-K"), pp. 2 and 10.) Interchange/Local.com helps businesses "reach consumers online in their local markets." ("Our Value." (http://localcorporation.com/about/our-value-and-market-opportunity, viewed on August 22, 2012.))

423 Google 2004 10-K, p. 1.

B. Under His Own Methodology, Dr. Becker Failed To Perform A Reasonableness Check Using The Yahoo!/Google Agreement

155. Yahoo!/Overture and Google entered into a settlement agreement ("Yahoo!/Google Settlement Agreement") on August 9, 2004 whereby Google issued 2.7 million shares of its common stock to Yahoo! to resolve two disputes between the parties.[424]

a. Patent Infringement Lawsuit.[425] The first dispute concerned a lawsuit Overture filed against Google in April 2002 in which Overture asserted that Google's AdWords and AdSense infringed the '361 Patent. Concurrently with the settlement agreement, Yahoo! and Google executed a license agreement in which Yahoo! granted Google a non-exclusive license to the '361 Patent [redacted]

b. Warrant Dispute.[426] The second dispute concerned a warrant held by Yahoo! to purchase 3.72 million shares of Google's stock in connection with a June 2000 services agreement. Pursuant to a conversion provision in the warrant, in June 2003, Google issued 1.23 million shares to Yahoo!. Yahoo! contended that it was entitled to a greater number of shares in accordance with the warrant agreement.

156. According to Google's 2004 Form 10-K, Google valued the total consideration under the Yahoo!/Google Settlement Agreement at $229.5 million based upon Google's actual IPO price.[427] Google had "engaged a third party valuation consultant to assist management in the allocation of the value of the settlement consideration" and determined that the value of the total consideration attributable to the licensed Overture patents was $28.5 million.[428]

157. Dr. Becker, in his *Georgia-Pacific* Factor 12 analysis, stated that "[i]t is his understanding through discussions with Dr. Frieder that the patented technology

[424] Confidential Settlement Agreement and Release between Yahoo! Inc./Overture Services, Inc. and Google Inc. dated August 9, 2004 (G-IPE-0220601 – 637 at 601 – 603 and 619 – 620) and Google 2004 10-K, p. 86.

[425] Google 2004 10-K, p. 86.

[426] Google 2004 10-K, p. 86.

[427] Google 2004 10-K, pp. 18 and 86. On August 18, 2004, Google conducted its IPO with a price per share of $85. The total settlement consideration (i.e., $229.5 million) was determined by multiplying the number of shares Google issued to Yahoo! (i.e., 2.7 million shares) by Google's IPO price (i.e., $85).

[428] Google 2004 10-K, p. 86.

described by the '361 Patent is sufficiently comparable to the '420 and '664, such that in [Dr. Becker's] opinion this agreement [the Yahoo!/Google Settlement Agreement] provides an indication of a reasonable royalty range applicable to the patents-in-suit."[429] Contrary to Dr. Becker's opinion, the Yahoo!/Google Settlement Agreement is not probative to the determination of a royalty in this matter for the reasons discussed in the previous section of my report, *inter alia*.[430]

158. However, assuming Dr. Becker's methodology (i.e., that the Yahoo!/Google Settlement Agreement is probative and that the '361 Patent is "sufficiently comparable" to the Patents-in-Suit), Dr. Becker failed to perform a reasonableness check on his claimed royalty damages using the Yahoo!/Google Settlement Agreement as a benchmark. Dr. Becker calculated claimed royalty damages of [redacted].[431] As stated above, the value of the portion of the disputes between Yahoo! and Google related to the license of the '361 Patent [redacted] was placed at $28.5 million by Google and its third-party valuation consultant.[432] The claimed royalty damages of [redacted] the $28.5 million valuation attributable to the license of the '361 Patent [redacted] in the Yahoo!/Google Settlement Agreement. Following Dr. Becker's assumption that the settlement between Yahoo! and Google is probative (which is a flawed assumption based upon the reasons previously stated) and that the '361 Patent is an appropriate benchmark for the Patents-in-Suit (i.e., not taking into account the seminal

[429] Becker Report, p. 37.

[430] In addition to the reasons previously stated, the Yahoo!/Google Settlement Agreement is not probative to a reasonable royalty in this matter because of the agreement's proximity to Google's initial public offering ("IPO") on August 18, 2004. Given the timing of the settlement agreement between Google and Yahoo!, it is likely that the determination of the royalty payment was influenced by the pending IPO among other factors.

[431] Becker Exhibit SLB-1.

[432] Google 2004 10-K, p. 86.

nature of the '361 Patent [redacted]), Dr. Becker's claimed royalty damages figure in this matter is unreasonable in light of the $28.5 million value assigned to the license agreement relating to the '361 Patent.

XVI. <u>CLAIMED ROYALTY BASE IS OVERSTATED</u>

159. Dr. Becker applied a running royalty rate to an apportioned royalty base. However, Dr. Becker overstated the claimed royalty base for at least the following reasons.

a. Dr. Becker failed to limit the claimed royalty base to U.S. accused revenues.

b. Dr. Becker's apportionment of the accused revenues is overstated and unreliable.

A. <u>Dr. Becker Failed To Limit The Claimed Royalty Base To U.S. Accused Revenues</u>

160. Dr. Becker stated that the "<u>accused revenues include the U.S. revenue of three Google advertising systems</u>: AdWords, AdSense for Search and AdSense for Mobile Search."[433] Dr. Becker described the revenue data he used for the three Accused Products as follows.[434]

a. <u>AdWords</u>. "With respect to the AdWords system, Google's United States-based sales data was provided by Google and [redacted]

b. <u>AdSense for Search</u>. "With respect to the AdSense for Search system, Google's United States-based sales data was provided by Google and [redacted]

c. <u>AdSense for Mobile Search</u>. "I have used the only information with respect to the AdSense for Mobile Search System that has been produced by Google as of the date of this report."

[433] Becker Report, p. 15. (Emphasis added.)

[434] Becker Report, p. 16.

161. [redacted]

162. By using the Accused Products' worldwide revenues (for the time periods stated above) to calculate the royalty base, Dr. Becker significantly overstated the claimed royalty base. Dr. Becker himself acknowledged that should "Google clarify or produce additional or updated information, I [Dr. Becker] reserve the right to revise my calculation of the royalty base as necessary."[435] Dr. Becker's use of worldwide revenues had a significant impact on the claimed royalty base and claimed royalty damages. It appears Dr. Becker chose not to estimate U.S. revenues for the Accused Products for the time periods over which such information was not available to him.

163. [redacted]

[435] Becker Report, p. 16.

[436] Defendant Google Inc.'s First Supplemental Response to Plaintiff I/P Engine, Inc.'s Fourth Set of Interrogatories dated August 29, 2012. It is my understanding that AdSense for Mobile Search launched in January 2009.

[redacted] takes into account Dr. Becker's overstatement of the accused revenues but does not adjust for the numerous other errors committed by Dr. Becker.

B. Dr. Becker's Apportionment Of The Accused Revenues Is Overstated And Unreliable

164. Dr. Becker stated that he apportioned Google's Accused Product revenues in an attempt to "arrive at a royalty base that most closely reflects the revenues attributable to the accused system implemented by Google in 2004."[437] However, Dr. Becker used an unreliable method to apportion the accused revenues in his calculation of the claimed royalty base. In addition, Dr. Becker failed to limit the apportioned royalty base to revenues associated with the Accused Functionality. Dr. Becker also failed to exclude revenues associated with incremental improvements made by Google. As a result, Dr. Becker significantly overstated the claimed apportionment factors and resulting claimed royalty base.

1. Dr. Becker's Apportionment Methodology Is Unreliable

165. As discussed earlier in my report, it appears that Dr. Becker arrived at his claimed apportionment factors through visual inspection of bar charts included in the appendix of a draft Google presentation dated June 26, 2006.[438] The document is entitled "Revenue Force" and has "Key Revenue Drivers," "Trend," "Forecasts," and "Issues" as subtitles/topics. Dr. Becker did not explain why he relied upon this single draft document

[437] Becker Report, pp. 6 and 53. *See also* Becker Report, Exhibit SLB-18.

[438] Becker Report, pp. 17 – 18 and Exhibit SLB-18. *See also* G-IPE-0484319 – 386 at 355 – 356.

for his analysis to the exclusion of all of the other documents produced by Google. Dr. Becker provided no evidence to support the reliability of the internal draft presentation. To the best of my knowledge, in the deposition of Google's 30(b)(6) witness on accused revenues (i.e., Mr. Sanjay Datta), I/P Engine did not ask questions about this draft document or make any effort to ascertain the actual figures underlying the document, what the figures represent, or the source thereof.

166. [redacted].

[439] Becker Report, pp. 17 – 18 and Exhibit SLB-18. *See also* G-IPE-0484319 – 386 at 355 – 356.

[redacted].

[441] G-IPE-0484319 – 386 at 355 – 356. *See also* Becker Report, pp. 47 – 48.

[442] Becker Report, Exhibit SLB-18.

[443] G-IPE-0484319 – 386 at 355 – 356. *See also* Becker Report, pp. 47 – 48.

167. According to Dr. Becker, "this analysis provides a reliable and tangible basis to apportion the accused AdWords and AdSense revenues."[444] However, Dr. Becker's visual inspection of the stacked-bar chart in the draft 2006 presentation was an imprecise approach and did not allow Dr. Becker to reliably measure the claimed contributions of the Accused Functionality. [redacted]

2. Dr. Becker Failed To Limit The Apportioned Royalty Base To Revenues Associated With The Accused Functionality

168. Dr. Becker claimed that his apportionment analysis allowed him to "limit the royalty base to revenues most closely associated with Google's alleged infringement of the patents-in-

[444] Becker Report, p. 49.

[redacted]

suit."[448] This assertion by Dr. Becker is not accurate. [redacted]

169. Dr. Becker claimed that his apportionment excluded "improvements to Google's accused systems that occurred during and after the implementation of Smart Ads that is [sic] unrelated to the accused filtering functionality."[451] However, Dr. Becker's apportionment included not only the impact of the so-called filtering functionality but also the entire impact of Smart Ads as a whole. In contrast, it is my understanding that the Accused Functionality is limited to [redacted]. The Smart Ads' functionality is not limited to providing pCTRs [redacted]. It is my understanding that the <u>computation of those pCTRs</u> by Smart Ads and [redacted]) are not accused of infringing the Patents-in-Suit.

170. [redacted]

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[448] Becker Report, p. 17.

[449] G-IPE-0484319 – 386 at 355 – 356.

[450] Becker Report, Exhibit SLB-18.

[451] Becker Report, pp. 17 – 18.

[redacted].

3. Dr. Becker Failed To Exclude Accused Revenues Associated With Incremental Improvements To The Accused Functionality Made By Google

171. Dr. Becker acknowledged that by July 2004, Smart Ads "was serving 100% of ads on the accused Google systems."[452] [redacted] Dr. Becker failed to acknowledge that incremental improvements in the revenue impact of the Accused Functionality [redacted]) should be attributed to Google's contributions over and above the implementation of the claimed teachings of the Patents-in-Suit.

172. Google is constantly improving upon Smart Ads' pCTR calculations. With respect to ads quality improvements in general, Google makes approximately 30 changes to the ads system per quarter.[455] In order to "limit the royalty base to revenues most closely associated with Google's alleged infringement of the patents-in-suit" and exclude

[452] Becker Report, p. 13. [redacted]

[453] Becker Report, Exhibit SLB-18.

[454] Becker Report, Exhibit SLB-18.

[455] Trial Testimony of Jeff Huber, August 5, 2010, pp. 29 – 30, *Bright Response v. Google*. (G-IPE-0222950 – 990 at 969 – 970.)

"improvements to Google's accused systems that occurred during and after the implementation of Smart Ads that is [sic] unrelated to the accused filtering functionality."[456] Dr. Becker could have excluded accused revenues associated with incremental improvements made by Google to both the Accused Functionality and Smart Ads' pCTR calculations. Dr. Becker did not consider such an adjustment in his report.

4. Dr. Becker Failed To Acknowledge The Lack Of Revenue Impac[redacted] At The Time Of Implementation

173. Although the use of Smart Ads pCTRs [redacted] was rolled out widely to AdWords users by July 2004, [redacted].[458]

[456] Becker Report, pp. 17 – 18.

[457] G-IPE-0484319 – 386 at 355 – 356.

[458] [redacted]

5. Dr. Becker Attempted To Support His Apportionment Analysis With Unreliable Evidence Related To Smart Ads' Revenue Impact

174. Dr. Becker attempted to support his apportionment analysis (and the resulting claimed apportionment factors ranging from [redacted]

175. Google's first experiment with AdWords using Smart Ads pCTR [redacted], [redacted] was on March 9, 2004.[460] After conducting the initial experiment, Google continued to make improvements and conduct additional experiments using Smart Ads pCTR. Google eventually launched AdWords using Smart Ads pCTR [redacted] for 50% of users on June 30, 2004, and 90% of users by July 1, 2004.[461]

176. [redacted]

[redacted]

[460] Email from Eric Bauer to Tiger Qie dated March 9, 2004 (G-IPE-0888897.)

[461] G-IPE-0729815 – 817 at 816 and Email from Chad Lester to smartass-team et. al. dated July 1, 2004 (G-IPE-888900.)

[redacted]

[redacted]

177. [redacted]

178. Also Dr. Becker did not consider in his analysis that, any initial revenue increase would not be attributable to the claimed teachings of the Patents-in-Suit if (a) the revenue change was driven by the specific calculation of pCTR (which I understand is not taught by the Patents-in-Suit) and/or (b) the revenue change was driven by the use of Smart Ads pCTR [redacted] Dr. Becker's reliance upon the claimed increase in revenue (or RPM) resulting from the launch of Smart Ads is flawed because Dr. Becker inappropriately assumed that the increase is attributable to the claimed teachings of the Patents-in-Suit.

[redacted]

179. Also, Dr. Becker's reliance upon the claimed increase in revenue (or RPM) resulting from the launch of Smart Ads is flawed because Dr. Becker inappropriately assumed that the increase is attributable to the claimed teachings of the Patents-in-Suit. [redacted]

180. [redacted]

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[467] Frieder Report, p. 16.

[468] Based upon a discussion with Dr. Ungar.

[469] Becker Report, p. 35.

[470] Becker Report, pp. 34, 48 – 49.

[redacted]

XVII. ADDITIONAL EXAMPLES OF DR. BECKER'S OVERSTATEMENT OF THE CLAIMED BENEFITS OF THE PATENTS-IN-SUIT

181. Dr. Becker's overstatement of the claimed benefits of the Patents-in-Suit has resulted in a significant overstatement of the claimed royalty rate and claimed royalty base as discussed in the prior sections of my report. In this section, I provide additional examples indicating that Dr. Becker overvalued the Patents-in-Suit.

a. Dr. Becker Inappropriately Attributed The Value [redacted] To The Patents-in-Suit. Dr. Becker discussed the benefits of Smart Ads, including that "advertisers with lower Quality Score have to bid higher in order to receive a good placement while advertisers with good content (i.e., higher Quality Score) can afford to bid lower and save money."[472] It is my understanding Dr. Becker misunderstood the Patents-in-Suit, and thus overstated their value. As Dr. Frieder discussed in his infringement report, it is the [redacted] that is alleged to infringe the Patents-in-Suit.[473] The Patents-in-Suit do not cover the use of pCTR in ranking and pricing of ads (i.e., in Google's modified second price auction). [redacted] but not the auction itself. It is the auction that determines the advertisements that appear above or alongside the search results on Google.com's webpage or the webpages of its partners (and in what order they appear). Thus, it is the auction that ensures that the ads that an end-user is most likely to click appear first in the ad results. Stated in Dr. Becker's terminology, it is the auction that ensures the most relevant ads are provided in response to a user's query. The Patents-in-Suit do not teach or cover the order of ads on the basis of relevance. It is my understanding that the Patents-in-Suit focus on filtering based on whether something is relevant or not, not on the *degree* of relevance.[474] [redacted]

[redacted]

[472] Becker Report, p. 35.

[473] Frieder Report, pp. 16 – 21.

[474] Based upon a discussion with Dr. Ungar.

b. Dr. Becker Confounded The Claimed Benefits Of The Patents-In-Suit With Google's Investments In Smart Ads Infrastructure. Dr. Becker improperly considered the "infrastructure" of Smart Ads as one of the significant claimed benefits to Google provided by the patented invention. To the extent that "[Smart Ads] provides the infrastructure for analyzing huge quantities of data on ad performance and predicting CTRs at an even more fine-grained level,"[475] those benefits are due to Google's significant investment in its infrastructure (as outlined in more detail previously in my report). Google's infrastructure was not provided by Lycos or attributable to the Patents-in-Suit. Both parties to the hypothetical negotiation would have understood that Smart Ads infrastructure would be the result of significant investments made by Google.

c. Dr. Becker Failed To Consider That The Actual Computation Of pCTRs Is Not Covered By The Patents-In-Suit. [redacted]. As discussed, the Patents-in-Suit do not teach or claim this proprietary calculation. A license to the Patents-in-Suit would not have provided Google with the specific method of computing the pCTRs required to implement the Accused Functionality.

XVIII. DR. BECKER'S CLAIMED ROYALTY DAMAGES ARE UNREASONABLE

182. Dr. Becker stated that "Lycos would have viewed Google as a very attractive licensee" and "Lycos would have been willing to license the patents-in-suit to Google on attractive terms."[477] Despite acknowledging these facts, Dr. Becker failed to place appropriate weight and perform reasonableness checks based upon certain indicators of value relevant to this case. Dr. Becker's claimed royalty damages are unreasonable for at least the reasons presented in the remainder of this section of my report.

A. Dr. Becker Failed To Place Proper Weight On Lycos' Sale Of Its Patent Family To Smart Search Labs

[475] Becker Report, p. 13 (quoting G-IPE-0476688 - 89, p. 89).

[476] Becker Report, p. 34.

[477] Becker Report, p. 52. Dr. Becker acknowledged the existing relationship between Lycos and Google in his discussion of *Georgia-Pacific Factor 5*. (Becker Report, p. 24.)

183. Dr. Becker failed to place proper weight on Lycos' sale of its patent family (including the Patents-in-Suit) for [redacted] to Smart Search Labs in June 2011.[478] Regarding this sale, Dr. Becker stated that "[i]t is [his] opinion that the sale does not provide reliable information that would inform the hypothetical negotiation because the agreement is not comparable to the circumstances of the hypothetical negotiation in a number of respects."[479] Dr. Becker's arguments are flawed.

a. Timing Of The Patent Sale. Dr. Becker cited the fact that the patent sale "occurred approximately seven years after the date of the hypothetical negotiation" as one reason why the sale is not probative.[480] As previously discussed, Mr. Blais testified that Lycos' decision to sell its patent family was largely "driven by [Lycos'] lack of profitability" and "just all based on the highest price [Lycos] could get."[481] Similar circumstances with regards to Lycos' business difficulties were prevalent around the time of the hypothetical negotiation. Mr. Blais testified that Lycos had not been profitable in 2004.[482] Lycos also laid off 20% of its work force in 2004.[483]

Additionally, throughout his report, Dr. Becker pointed out that at 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." [484] Dr. Becker further referenced growth in the "market for Internet advertising."[485] Dr. Becker appears to indicate that growth in the Internet search engine and Internet advertising markets would have incrementally increased the value of the Patents-in-Suit over time. Under Dr. Becker's calculation of the claimed apportionment factors, by the time the Patents-in-Suit were sold by Lycos as part of its patent family sale to Smart Search Labs in 2011, the claimed value of the Patents-in-Suit would have exceeded their claimed value in the 2004 time period.[486] Dr.

[478] The details of this sale have been discussed elsewhere in my report and will not be repeated here, but are incorporated by reference.

[479] Becker Report, p. 20.

[480] Becker Report, p. 20.

[481] Blais Deposition, p. 147.

[482] Blais Deposition, pp. 147 – 148.

[483] "Lycos Restructures, cuts U.S. Staff." (http://news.cnet.com/2100-1038_3-5157640.html, viewed on August 10, 2012.)

[484] Becker Report, p. 26.

[485] Becker Report, p. 26.

Becker's analyses suggest that use of Lycos' patent sale to Smart Search Labs in 2011 would not be an inappropriately low indicator of value for the 2004 hypothetical negotiation between Lycos and Google.

Moreover, Dr. Becker argued that "[i]n 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."[487] Dr. Becker's failure to consider the sale of the patent family that included the Patents-in-Suit to test the reasonableness of his claimed royalty calculation is improper under his own methodology.

b. [redacted]

c. Validity, Enforceability, And Infringement. Dr. Becker claimed that "there is no reason to believe that the assumptions of certainty regarding the validity, enforceability and infringement of the patents-in-suit that we make regarding the hypothetical negotiation were present in this transaction [Lycos' patent sale to Smart Search Labs]."[490] Contrary to Dr. Becker's assertion, Lycos entered the patent sale agreement with Smart Search Labs, and similarly would have entered the hypothetical negotiation with Google, with the belief that the patents were valid and enforceable. Mr. Blais testified that when Lycos entered the patent purchase agreement with Smart Search Labs in 2011, it was under the assumption that the patents were valid and enforceable [redacted] Additionally, Mr. Blais testified that no concerns regarding validity and enforceability of the patent family were raised during negotiations between Lycos and Smart Search Labs.[493] [redacted]

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[486] Becker Report, Exhibit SLB-18 and p. 49. Dr. Becker calculated apportionment factors of 7.8% and 12.3% for Q3 2004 and Q4 2004 respectively. Dr. Becker assumed an apportionment factor of 20.9% for periods after July 2009.

[487] Becker Report, p. 51.

[488] Becker Report, p. 20.

[489] Blais Deposition, p. 139.

[490] Becker Report, p. 20.

[491] Blais Deposition, pp. 145 – 146. The patent purchase and license agreement between Lycos and Smart Search Labs also stated that

[492] "Patent Purchase and License Agreement between Smart Search Labs, Inc. and Lycos, Inc." (IPE 0013519 – 545 at 528.)

[493] Blais Deposition, p. 146.

[redacted] Additionally, I/P Engine was formed in June 2011 (i.e., the same month as the patent purchase agreement with Lycos) and the Lycos patents were its "initial" assets.[495] All of the above observations indicate that the parties to the transaction believed the patents to be valid and enforceable, and were going to be used by Smart Search Labs to pursue alleged infringers.

184. These facts provide further evidence of the applicability of Lycos' 2011 patent sale to Smart Search Labs as an *ex-post* indicator of value relevant to a license to the Patents-in-Suit between Lycos and Google in 2004. Dr. Becker failed to give appropriate weight to Lycos' [redacted] sale of its patent family (including the Patents-in-Suit) to Smart Search Labs in 2011. This omission contributed to Dr. Becker's significant overstatement of claimed royalty damages in this matter.

B. Dr. Becker's Claimed Royalty Damages Are Unreasonable When Compared To The Sale Of Lycos To Daum Communications

185. Dr. Becker failed to consider Lycos' sale to Daum Communications as a reasonableness check to his claimed royalty damages calculation. In October 2004, Terra sold Lycos to Daum Communications.[496] Daum acquired Lycos in a 100 percent stock transfer for \$95 million.[497] Mr. Blais testified that Daum acquired all of Lycos' "properties and Websites, products and services," except for Lycos Europe which remained with Terra.[498] Lycos retained ownership of its patents and intellectual property.[499] Thus, Daum paid \$95 million for what was essentially the entire Lycos company and its assets (including

[494] "Innovate/Protect, Inc. Executive Summary." (IPE 0017715 – 720 at 715.)

[495] "Innovate/Protect, Inc. Executive Summary." (IPE 0017715 – 720 at 715.)

[496] Blais Deposition, p. 30.

[497] Blais Deposition, p. 117.

[498] Blais Deposition, pp. 117 – 118.

[499] Blais Deposition, pp. 117 – 118.

intellectual property). It is reasonable to assume that the acquisition of an entire company and its assets, including its intellectual property, is more valuable than simply acquiring or licensing two of that same company's patents.

186. Dr. Becker opined that Lycos and Google would have agreed to a license to the Patents-in-Suit for [redacted]. Dr. Becker's claimed royalty damages [redacted] the price Daum paid for the entire Lycos company contemporaneously with the hypothetical negotiation. It is unreasonable to believe that Google would have been willing to pay an amount [redacted]

C. <u>Dr. Becker's Claimed Royalty Damages Are Unreasonable When Compared To Google's In-Bound Patent License And Acquisition Agreements</u>

187. In his analysis of *Georgia-Pacific* Factor 2, Dr. Becker stated that "[w]hen 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."[500] However, Dr. Becker asserts that with the exception of the Yahoo!/Google Settlement Agreement, "none of [the Google] agreements provide information that informs the hypothetical negotiation for a license to the patents-in-suit."[501] Dr. Becker failed to reconcile his claimed damages with Google's patent license/acquisition agreements (which have been discussed elsewhere in my report and are incorporated here by reference). [redacted]

[500] Becker Report, p. 20.

[501] Becker Report, p. 20.

[redacted] Although Dr. Becker utilized Overture's agreements involving the '361 Patent as a benchmark because they relate to "search advertising technology used in AdWords,"[redacted] In failing to do so, Dr. Becker significantly overstated the royalty payment that Lycos and Google would have agreed to at the hypothetical negotiation.

* * * * * *

188. My analyses and opinions contained in this report are based upon information available to date. I reserve the ability to review documents, deposition transcripts, or other information still to be produced by the Parties to this dispute and to supplement my opinions based upon that review.

Keith R. Ugone, Ph.D.
August 29, 2012

[redacted]

[304] Becker Report, p. 44.

[redacted]

Appendix A

Appendix A: *Georgia-Pacific* Factor Analysis

Georgia-Pacific Factor	Evaluation Of 15 *Georgia-Pacific* Factors – Implications For Hypothetical Negotiation[1]
Factor 1: The royalties received by the patentee for the licensing of the patent in suit.	▪ Offers To Purchase And Actual Sale Of The Patents-In-Suit. Beginning at the end of 2008, Lycos received offers to purchase its entire patent portfolio. By 2011, the offers were no longer for the entire portfolio, but rather for one specific patent family that included the Patents-in-Suit. These offers evolved into a bidding process, which led to Lycos' sale of this patent family to Smart Search Labs (i.e., the predecessor to I/P Engine) in 2011 for a lump-sum payment of [redacted]. **(Section IX.F.)** • Altitude Capital Partners. Negotiations with Altitude Capital Partners regarding the sale of Lycos' entire patent portfolio [redacted] ltitude also was part of the bidding process for the patent family that included the Patents-in-Suit in 2011. [redacted]. • Mr. Stayko Staykov. Mr. Staykov was another party to the bidding process for Lycos' patent family including the Patents-in-Suit. [redacted] • Hudson Bay Capital/Smart Search Labs. Hudson Bay Capital was the third party involved in negotiations for Lycos' patent family including the Patents-in-Suit. The result of the bidding process was the sale of the patent family (consisting of 8 patents) to Smart Search Labs for [redacted] June 22, 2011. [redacted] **(Section IX.G.)** ▪ Lycos' Willingness To Accept A Lump-Sum Royalty Payment Structure. Lycos did not have a preference for a lump-sum or a running royalty payment structure. [redacted] **(Section IX.G.)** **Implications For Hypothetical Negotiation** ▪ The [redacted] that resulted from the bidding process among Altitude Capital Partners, Mr. Staykov, and Hudson Bay Capital provides an *ex-post* value indicator of the patent portfolio that included the Patents-in-Suit. The [redacted] overstates the value for a license to the Patents-in-Suit because the sale of a patent family commands a higher value than a license to the two patents at issue.

[1] A complete description of the analyses underlying this summary is contained in the narrative to my report and the associated exhibits.

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<td>Factor 2: The royalty rates paid by the licensee for the use of other patents comparable to the patent in suit.</td>
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▪ Google produced a number of agreements in this matter. Of these agreements, nine are patent license and/or patent acquisition agreements that Google entered into in the normal course of business. A focus is on these nine agreements because, at the hypothetical negotiation, Google would have sought a non-exclusive, bare patent license without software, source code, technology transfers, and/or cross licensing rights. (Section X.D.)
• All nine agreements contain lump-sum royalty payment structures.
• [redacted]

<u>Implications For Hypothetical Negotiation</u>
▪ At the hypothetical negotiation, the parties would have acknowledged Google's preference for a lump-sum payment structure.
▪ [redacted]
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Factor 3: The nature and scope of the license (e.g., exclusive vs. non-exclusive or restricted vs. non-restricted).	■ Assuming that the Patents-in-Suit are found to be valid, enforceable, and infringed (which Google disputes), the hypothetical negotiation would have occurred around the time of the first alleged infringement in 2004 when Google [redacted] using predicted click-through rates (pCTRs) calculated by Smart Ads. **(Section VIII.C.)** ■ Lycos and Google would have negotiated a fully paid-up, freedom-to-operate, non-exclusive U.S. license to the Patents-in-Suit. **(Section X.D.)** ■ The license would give Google full use of the Patents-in-Suit, including making Google's technology available to its partners such as AOL, IAC, Gannett, and Target. **(Section IX.)** **Implications For Hypothetical Negotiation** ■ Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this *Georgia-Pacific* factor would be neutral with respect to the royalty payment.

Factor 4: The licensor's established policy regarding the licensing (or non-licensing of its patents).	■ Lycos' willingness to license its patents is evidenced by the negotiations between Lycos and third parties regarding Lycos' patent portfolio and patent family that includes the Patents-in-Suit. (**Section IX.F.**) • Negotiations Relating To Lycos' Entire Patent Portfolio. Towards the end of 2008, Lycos was contacted by Altitude Capital Partners regarding interest in purchasing Lycos' patent portfolio. At the time, Lycos' entire portfolio consisted of around 28 patents, as well as pending patent applications, covering a "[v]ariety of fields." [redacted] • Negotiations Relating To Lycos' Patent Family That Included The Patents-In-Suit. In the spring of 2011, Lycos was contacted by Mr. Stavkov who had an interest in purchasing the family of patents that included the Patents-in-Suit. [redacted] began a bidding process among three parties: Mr. Stavkov, Altitude, and Hudson Bay Capital (on behalf of Smart Search Labs) [redacted] The bidding process resulted in Lycos and Smart Search Labs entering a patent purchase and license agreement for Lycos' patent family on June 22, 2011 for [redacted]. The patent family consists of 8 patents, including the '420 and '664 Patents. The [redacted] that resulted from the bidding process described above provides an *ex-post* value indicator of a portfolio of patents that include the Patents-in-Suit. The negotiations also provide an indication of Lycos' "willingness to accept" for its patent family that included the Patents-in-Suit. [redacted] (**Section IX.G.**) **<u>Implications For Hypothetical Negotiation</u>** ■ Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this *Georgia-Pacific* factor would be neutral with respect to the royalty payment.

Factor 5: The commercial relationship between the licensor and licensee.	▪ Lycos would have identified, among other considerations, (a) its existing relationship with Google related to Google's AdSense for Content and AdSense for Search and (b) Google's strong brand name as two significant advantages to entering into a license agreement with Google related to the Patents-in-Suit. (**Section IX.E.**) ▪ As of April 2004, "Lycos's advertising based revenue structure was largely dependent on Google AdWords" and "Lycos [was] the largest network serving Google contextual AdWords advertising." (**Section IX.E.**) ▪ Lycos continues to use Google's AdSense for Content product today. (**Section IX.E.**) **<u>Implications For Hypothetical Negotiation</u>** ▪ At the time of the hypothetical negotiation, Lycos would have been aware that licensing to Google would prove advantageous. ▪ Lycos would have had strong incentives to license the Patents-in-Suit on favorable terms to Google because the advertising revenue Lycos generated from AdSense for Search (i.e., the Accused Product) was an important revenue stream for Lycos. ▪ Lycos also would have had strong incentives to enter into a reasonable license with Google because Lycos was dependent upon revenue it generated from Google's AdSense for Content product (which is not accused). ▪ Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this *Georgia-Pacific* factor would maintain downward pressure on the royalty payment.
Factor 6: The extent of derivative or convoyed sales.	▪ There are no convoyed sales associated with the Patents-in-Suit. **<u>Implications For Hypothetical Negotiation</u>** ▪ At the time of the hypothetical negotiation, the Parties would recognize that Google would not realize any convoyed sales through the (alleged) use of the Patents-in-Suit. ▪ Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this *Georgia-Pacific* factor would be neutral with respect to the royalty payment.

Factor 7: The duration of the patent and the term of the license.	▪ It is my understanding that the expiration date of the '420 Patent and '664 Patent is April 4, 2016. ▪ Generally, the duration of a patent has a neutral impact on the royalty payment when a running royalty is used as a benchmark. ▪ The duration of a patent could have either some impact or no impact on a lump-sum royalty payment, depending upon a number of factors, including the remaining time to expiration, the benchmark licenses being utilized, and the costs associated with design-around options. **<u>Implications For Hypothetical Negotiation</u>** ▪ Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this *Georgia-Pacific* factor would be neutral with respect to the royalty payment.

Factor 8: The established profitability of the patented product and its commercial success.	▪ With regard to the profitability and commercial success of Google's Accused Products, this factor is of limited applicability for the determination of a royalty payment. • The commercial success of Google's Accused Products is attributable to Google's contributions rather than to the claimed teachings of the Patents-in-Suit. Google had achieved significant commercial success prior to the first alleged infringement, and Google has continued to make significant contributions to the commercial success of the Accused Products independent of the claimed teachings of the Patents-in-Suit. (**Section X.A.**) • It is the success of Google Search that (a) ultimately allowed (and continues to allow) Google to connect advertisers and websites with its users and (b) drives a large part of the accused revenues independent of the claimed teachings of the Patents-in-Suit. Additional significant contributions made by Google to the Accused Products' commercial success include (but are not limited to) numerous features and benefits of the Accused Products unrelated to the Patents-in-Suit, significant investments in hardware and software infrastructure, and Google's auction system. (**Section X.A.**) • Lycos' sole contribution to the commercialization of a product practicing the claims of the Patents-in-Suit would be a bare (or naked) patent licensing agreement. Significant contributions beyond a bare license to the Patents-in-Suit were required for Google to implement the Accused Functionality. A license to the Patents-in-Suit would not have provided Google with any of the practical requirements for implementing the Accused Functionality, including necessary hardware infrastructure or software programming. (**Section IX.C.**) ▪ Lycos had not undertaken any commercialization or licensing efforts specifically related to the Patents-in-Suit. Lycos had neither sought to license nor received requests to license the '420 and '664 Patents. Lycos even shifted its business focus and ceased investing in search technologies. Lycos was not profitable at the time of the hypothetical negotiation. (**Sections IX.B and IX.D.**) ▪ The significant variation in the levels of success of different search advertising systems alleged to employ the same patented technology (e.g., AOL's "Advertising.com Sponsored Listings") serves to highlight that the success of the Google's search advertising systems cannot be attributed to the claimed benefits of the Patents-in-Suit and that Google-specific contributions drive the success of the accused systems independent of the claimed teachings of the Patents-in-Suit. (**Section X.C.**) **<u>Implications For Hypothetical Negotiation</u>** ▪ At the hypothetical negotiation, Google would not have attributed the profitability of its Accused Products or their commercial success to the claimed teachings of the Patents-in-Suit. ▪ Lycos would have acknowledged that the claimed teachings of the Patents-in-Suit were not sufficient to obtain commercial success and that the Patents-in-Suit would not be determinative as to the revenues and profits Google obtained from the Accused Products. ▪ The technological and economic contributions of Google were significantly greater than the contributions made by Lycos. Lycos (as a prudent licensor) and Google (as a prudent licensee) would know that a potential licensee would pay no more than an amount equal to the value contribution of the Patents-in-Suit. A prudent licensee would not pay for the value created by its own efforts or for the value not created by the Patents-in-Suit. ▪ Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this *Georgia-Pacific* factor would maintain downward pressure on the royalty payment.

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<td>Factor 9: The utility and advantages of the patented product over other modes or devices.

Factor 10: The nature of the patented invention and the benefits to those who have used the invention.</td>
<td>
▪ It would have been Lycos' position that the purpose of the claimed invention was "<u>to make network searches for information entities relevant to user queries</u>, with collaborative feedback data and content-based data and adaptive filter structuring, being used in filtering operations <u>to produce significantly improved search results</u>." However, Lycos would have acknowledged that (a) Google had achieved significant commercial success as a search engine company prior to the introduction of the Accused Functionality and (b) Google continued to innovate and improve the quality of its search results independently of the claimed teachings of the Patents-in-Suit. (Section IX.A.)
▪ Google uses an auction-based system for selling advertisements, and the Accused Functionality is limited to Google's use of certain [redacted] determining which advertisements should be eligible to participate in a given auction. The claimed benefits to Google of a license to the Patents-in-Suit would not extend beyond those associated with [redacted] In particular, ad <u>ranking</u> and <u>pricing</u> are determined by the results of the auction and are beyond the scope of the Accused Functionality. (Sections IX.A and X.B.)
▪ Significant contributions beyond a bare license to the Patents-in-Suit were required for Google to implement the Accused Functionality. A license to the Patents-in-Suit would not have provided Google with any of the practical requirements for implementing the Accused Functionality, including necessary hardware infrastructure or software programming. In particular, although the Accused Functionality includes the use of pCTR as [redacted], the specific computation of pCTR is not covered by the Patents-in-Suit. A license to the Patents-in-Suit would not have provided any guidance as to the particular features of an advertisement, search query, [redacted] (Sections IX.A, IX.C, and X.B.)
▪ The Patents-in-Suit do not cover the use of advertiser bids (or prices in general) as a factor in the claimed filtering process [redacted]
▪ Google would have had options to use as alternatives to the claimed teachings of the Patents-in-Suit at the time of the hypothetical negotiation with Lycos. (Section X.E.)

<u>Implications For Hypothetical Negotiation</u>
▪ The claimed benefits of the Patents-in-Suit to Google (and thus Google's willingness to pay for a license to the Patents-in-Suit) are limited.
▪ Lycos' recognition of the limited benefits to Google from obtaining a license to the Patents-in-Suit would have tempered Lycos' expectations as to the royalty payment it could expect to receive from Google.
▪ Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this Georgia-Pacific factor would maintain downward pressure on the royalty payment.
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<td>Factor 11: The extent to which the infringer has made use of the invention and evidence of the value of that use.</td>
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Google uses an auction-based system for selling advertisements, and the Accused Functionality is limited to Google's use of [redacted] in determining which advertisements should be eligible to participate in a given auction. The claimed benefits to Google of a license to the Patents-in-Suit would not extend beyond those associated with [redacted]. In particular, ad ranking and pricing are determined by the results of the auction and are beyond the scope of the Accused Functionality. (Sections IX.A and X.B.)
Significant contributions beyond a bare license to the Patents-in-Suit were required for Google to implement the Accused Functionality. A license to the Patents-in-Suit would not have provided Google with any of the practical requirements for implementing the Accused Functionality, including necessary hardware infrastructure or software programming. In particular, although the Accused Functionality includes the use of pCTR [redacted] the specific computation of pCTR is not covered by the Patents-in-Suit. [redacted] (Sections IX.A, IX.C, and X.B.)
The commercial success of Google's Accused Products is attributable to Google's contributions rather than to the claimed teachings of the Patents-in-Suit. Google had achieved significant commercial success prior to the first alleged infringement, and Google has continued to make significant contributions to the commercial success of the Accused Products independent of the claimed teachings of the Patents-in-Suit. (Section X.A.)
It is the success of Google Search that (a) ultimately allowed (and continues to allow) Google to connect advertisers and websites with its users and (b) drives a large part of the accused revenues independent of the claimed teachings of the Patents-in-Suit. Additional significant contributions made by Google to the Accused Products' commercial success include (but are not limited to) numerous features and benefits of the Accused Products unrelated to the Patents-in-Suit, significant investments in hardware and software infrastructure, and Google's auction system. (Section X.A.)
Google would have had options to use as alternatives to the claimed teachings of the Patents-in-Suit at the time of the hypothetical negotiation with Lycos. (Section X.E.)

<u>Implications For Hypothetical Negotiation</u>

At the hypothetical negotiation with Lycos, Google would have emphasized that the commercial success of the Accused Products depended (and continues to depend) upon significant contributions made by Google unrelated to the Patents-in-Suit and the claimed benefits Google would receive from a license to the Patents-in-Suit would be limited.
Lycos' recognition of the limited benefits to Google from obtaining a license to the Patents-in-Suit would have tempered Lycos' expectations as to the royalty payment it could expect to receive from Google.
Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this Georgia-Pacific factor would maintain downward pressure on the royalty payment.

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Factor 12: The portion of the profit or selling price of the invention that may be customary to allow for the use of the invention or analogous inventions.	▪ There is no customary royalty payment associated with the claimed teachings of the Patents-in-Suit. ▪ Value indicators of the Patents-in-Suit include: • Lycos' sale of the patent family that includes the Patents-in-Suit to Smart Search Labs for [redacted] payment (**Section IX.F.**); [redacted] • Google's maximu[redacted] on in its in-bound patent licensing and purchase agreements (**Section X.D.**); • Google's license agreement wit[redacted] (**Section X.D.**); and • Google could have implemented an acceptable non-infringing alternative. (**Section X.E.**) ▪ Overture's license agreements relating to the '361 Patent which Dr. Becker relied upon in his report are not probative of a reasonable royalty in this matter because (**Section XV.**): • Lycos had never based its licensing decisions on Overture agreements relating to the '361 Patent; • the '361 Patent is a seminal patent holding much more significant value than the Patents-in-Suit; • [redacted] • Overture achieved significant commercial success with the paid search technology taught by the '361 patent [redacted] whereas Lycos did not have a commercial product that practices the claimed teachings of the Patents-in-Suit; and • the licensees in the three Overture agreements relied upon by Dr. Becker are not comparable to Google. **<u>Implications For Hypothetical Negotiation</u>** ▪ Contemporaneous and *ex-post* value indicators indicate a lump-sum royalty payment [redacted] for a license to the Patents-in-Suit (and not a percentage sharing of the profitability of the accused products).

Factor 13: The portion of the realizable profit credited to the invention as distinguished from non-patented elements.	▪ The commercial success of Google's Accused Products depended (and continues to depend) upon significant contributions made by Google unrelated to the Patents-in-Suit. **(Section X.A.)** • Google achieved commercial success prior to the first alleged infringement. • Google constantly innovates and improves the quality of its search results. • Google's Accused Products offer many features unrelated to the Patents-in-Suit. • Google incurs considerable investments in its software and hardware infrastructure. • Google AdWords uses [redacted]uction system. • Google constantly innovates and improves upon its search advertising system[redacted]. ▪ Google uses an auction-based system for selling advertisements, and the Accused Functionality is limited to Google's use of certain [redacted] in determining which advertisements should be eligible to participate in a given auction. The claimed benefits to Google of a license to the Patents-in-Suit would not extend beyond those associated with [redacted]. In particular, ad ranking and pricing are determined by the results of the auction and are beyond the scope of the Accused Functionality. **(Sections IX.A and X.B.)** ▪ Significant contributions beyond a bare license to the Patents-in-Suit were required for Google to implement the Accused Functionality. A license to the Patents-in-Suit would not have provided Google with any of the practical requirements for implementing the Accused Functionality, including necessary hardware infrastructure or software programming. In particular, although the Accused Functionality includes the use of pCTR [redacted], the specific computation of pCTR is not covered by the Patents-in-Suit. [redacted] **(Sections IX.A, IX.C, and X.B.)** **Implications For Hypothetical Negotiation** ▪ The revenues and profits associated with the Accused Products are attributable to Google's contributions rather than to the claimed teachings of the Patents-in-Suit. ▪ Relative to the indicators of value associated with the Patents-in-Suit described throughout my report, this *Georgia-Pacific* factor would maintain downward pressure on the amount Google would be willing to pay for a license to the Patents-in-Suit.

Factor 14: The opinion of qualified experts.	▪ My complete opinions are contained in my report, the associated exhibits, and this appendix. I also have reviewed the expert report of Dr. Stephen L. Becker submitted on July 25, 2012, the expert report of Dr. Ophir Frieder submitted on July 25, 2012, and the expert report of Dr. Lyle Ungar submitted on July 25, 2012. In preparing my expert report, discussions were held with the Defendants' technical expert Dr. Lyle Ungar. Discussions also were held with the following Google personnel: Mr. Maccoun, Patent Counsel, Mr. Nick Fox, Vice President of Product Management, and Mr. Jonathan Alferness, Director of Product Management.
Factor 15: The amount a willing licensor and a willing licensee would have agreed upon at the time of the infringement if both had reasonably and voluntarily attempted to reach an agreement.	Based upon documentary evidence, deposition testimony, and the economic analyses presented throughout my report, the following considerations would have guided the respective negotiating positions of the parties at the hypothetical negotiation. ▪ **Lycos' Negotiating Position** • Valid, Enforceable, And Infringed Patents. Lycos would have asserted that the Patents-in-Suit are valid, enforceable, and infringed by Google. Lycos would have asserted that a company wishing to implement an online search advertising platform utilizing filtering technology in accordance with the claimed teachings of the Patents-in-Suit would need a license from Lycos. (**Section IX**.) • Limited Benefits Associated With the Asserted Claims. Lycos would have been aware that Google used an auction-based system for selling advertisements. Also, the Accused Functionality was limited to Google's use of certain [redacted] in determining which advertisements were eligible to participate in a given auction. Lycos would have been aware that the benefits to Google of a license to the Patents-in-Suit would not extend beyond those associated [redacted]. In particular, Lycos would have recognized that ad ranking and pricing were determined by the results of the auction and were beyond the scope of the Accused Functionality. (**Section IX.A.**) • Lycos' Lack Of Commercialization Or Licensing Efforts Related To The Patents-In-Suit. At the hypothetical negotiation, both Lycos and Google would have been aware that Lycos had not undertaken any commercialization or licensing efforts specifically related to the Patents-in-Suit. Lycos had neither sought to license nor received requests to license the '420 and '664 Patents. In fact, Lycos had shifted its business focus and ceased investing in search technologies [redacted] (**Section IX.B.**) • A Bare (I.E., Naked) Patent License. Lycos would have recognized that Google would be obtaining a bare (or naked) patent license to the Patents-in-Suit. No technical information or know how would be transferred with the license agreement. Significant contributions would be required by Google to implement the Accused Products (allegedly containing the Accused Functionality), including hardware infrastructure and software programming. Additionally, a license to the Patents-in-Suit would not provide Google with the specific method of computing the pCTRs that allegedly are used in the Accused Functionality. (**Section IX.C.**) • Lycos' Business Difficulties. Until 2009, Lycos had remained unprofitable for a number of years, including around the time of the hypothetical negotiation. Specifically, Lycos was not profitable from 2004 through 2008. Additionally, as of February 2004, Lycos had laid off 20% of its U.S. work force and began closing offices. (**Section IX.D.**)

Factor 15: The amount a willing licensor and a willing licensee would have agreed upon at the time of the infringement if both had reasonably and voluntarily attempted to reach an agreement.	• Lycos' Awareness That Licensing To Google Would Be Beneficial. At the time of the hypothetical negotiation, Lycos would have been aware that licensing to Google would be advantageous. Lycos would have acknowledged, among other considerations, its existing relationship with Google related to Google's AdSense for Content and AdSense for Search products and Google's strong brand name as two significant incentives for entering into a license agreement with Google related to the Patents-in-Suit. (**Section IX.E.**) • As of April 2004, "Lycos' advertising based revenue structure was largely dependent on Google AdWords" and "Lycos [was] the largest network serving Google contextual AdWords advertising." Lycos would have had strong incentives to license the Patents-in-Suit on favorable terms to Google because the advertising revenue Lycos generated from AdSense for Search (i.e., an Accused Product) was an important revenue stream for Lycos. • Lycos also would have had a strong incentive to enter into a reasonable license with Google because Lycos was dependent upon revenue it generated from Google's AdSense for Content product (which is not accused). Lycos continues to use Google's AdSense for Content product today. • Lycos' Willingness To Accept A Lump-Sum Royalty Payment Structure. Lycos did not have a preference for a lump-sum or a running royalty payment structure. [redacted] (**Section IX.G.**) ▪ **Google's Negotiating Position** • Google Made Substantial Contributions To The Commercial Success Of The Accused Products Independent Of The Patents-In-Suit. Prior to implementing the Accused Functionality, Google had achieved significant commercial success in Internet search and search advertising. At the hypothetical negotiation, Lycos and Google would have acknowledged that Google had made and would continue to make substantial contributions to the Accused Products, including but not limited to Google's web search technology, numerous features and benefits of the Accused Products unrelated to the Patents-in-Suit, significant investments in hardware and software infrastructure, and Google's auction system. (**Section X.A.**) • The Claimed Benefits Of The Patents-In-Suit To Google Are Limited. At the hypothetical negotiation with Lycos, Google would have emphasized that the claimed benefits Google would receive from a license to the Patents-in-Suit would be limited for at least the following reasons (**Section X.B.**): a. The benefits are limited to [redacted] b. The benefits do not include ad ranking and pricing; c. The specific computation of pCTR is not covered by the Patents-in-Suit; and d. Google would make significant enhancements to the Accused Functionality beyond the claimed teachings of the Patents-in-Suit.

Factor 15: The amount a willing licensor and a willing licensee would have agreed upon at the time of the infringement if both had reasonably and voluntarily attempted to reach an agreement. (continued)	• The Success Of Google's Search Advertising Systems Is Not Attributable To The Technology Claimed By The Patents-In-Suit. The filtering technology claimed by the Patents-in-Suit does not guarantee the success of a search advertising system asserted to practice the claims of the patents. For example, in addition to Google's search advertising systems, AOL's "Advertising.com Sponsored Listings" has been accused of infringing the Patents-in-Suit. However, there is a significant variation in the levels of success of different search advertising systems alleged to employ the same patented technology (i.e., Google's systems vs. AOL's). Thus, the success of the Google's search advertising systems is driven by Google-specific contributions. (**Section X.C.**) • Google's Strong Preference For A Lump-Sum Royalty Payment Structure. When Google enters into in-bound patent license agreements, Google prefers a lump-sum royalty payment structure. From an economic perspective, it would have been Google's position at the hypothetical negotiation that it is Google's products and efforts that create recurring value and revenue, and no nexus can be isolated between the claimed teachings of the Patents-in-Suit and Google's revenues. In addition, there would be a diminishment in the relative importance of the Accused Functionality over time as a result of Google's future expected contributions. These factors, among others, weigh in favor of a lump-sum royalty payment structure. (**Section X.D.**) ■ **Non-Infringing Alternatives**. Google would have had options to use as alternatives to the claimed teachings of the Patents-in-Suit at the time of the hypothetical negotiation with Lycos. It is my understanding that it would have been technically feasible and not cost-prohibitive for Google to implement these non-infringing alternatives at the time of the hypothetical negotiation in order to design around the claimed teachings of the Patents-in-Suit. (**Section X.E.**) ■ **Value Indicators Of The Patents-In-Suit.** • Contemporaneous Value Indicators. [redacted] The timing of the agreement, royalty payment structure, and royalty amount are probative to Google's negotiating position and willingness to pay for a license to the Patents-in-Suit. (**Section X.D.**)

Factor 15: The amount a willing licensor and a willing licensee would have agreed upon at the time of the infringement if both had reasonably and voluntarily attempted to reach an agreement. (continued)	• Ex Post Indicators of Value. Ex post indicators of value and other economic/business considerations also exist, and include the following. a. Offers To Purchase Lycos' Entire Patent Portfolio. Towards the end of 2008, Lycos was contacted by Altitude Capital Partners expressing interest in purchasing Lycos' patent portfolio. At the time, Lycos' entire portfolio consisted of around 28 patents, as well as pending patent applications, covering a "[v]ariety of fields." Altitude conducted an "[e]xtensive due diligence" of Lycos' patent portfolio. In February 2009, Altitude [redacted] for Lycos' patent portfolio. **(Section IX.F.)** b. Offers To Purchase The Patent Family That Included The Patents-In-Suit. In the spring of 2011, Lycos was contacted by Mr. Stavkov who had an interest in purchasing the family of patents that included the Patents-in-Suit. [redacted] began a bidding process among three parties: Mr. Stavkov, Altitude, and Hudson Bay Capital (on behalf of Smart Search Labs). [redacted] he bidding process resulted in Lycos and Smart Search Labs entering a patent purchase and license agreement for Lycos' patent family on June 22, 2011 for [redacted] The patent family consists of 8 patents, including the '420 Patent and the '664 Patent. The [redacted] payment that resulted from the bidding process described above provides an *ex-post* market-related value indicator of the Patents-in-Suit and an indicator of Lycos' willingness to accept for its patent family that included the Patents-in-Suit. **(Section IX.F.)** c. Google's Patent License And/Or Patent Acquisition Agreements. Google has produced a number of agreements [redacted] **(Section X.D.)**

[2] I have focused on these nine agreements because at the hypothetical negotiation, Google would have sought a non-exclusive, bare patent license without software, technology transfer, and/or cross licensing rights.

Factor 15: The amount a willing licensor and a willing licensee would have agreed upon at the time of the infringement if both had reasonably and voluntarily attempted to reach an agreement. (continued)	**Implications For Hypothetical Negotiation** ▪ At the time of the hypothetical negotiation, Lycos and Google would have recognized factors governing their respective negotiating positions. ▪ Important factors determining the outcome of the hypothetical negotiation include, but are not limited to, (a) Google's substantial contributions (unrelated to the Patents-in-Suit) to the Accused Products, (b) the limited benefits of the claimed teachings of the Patents-in-Suit to Google, (c) the significant benefits Lycos would derive from licensing to Google, (d) Lycos' lack of commercialization or licensing efforts related to the Patents-in-Suit, (e) Lycos' lack of profitability, and (f) value indicators of the Patents-in-Suit. ▪ Based upon the relative negotiating positions of the parties and economic considerations discussed throughout my report, I am of the opinion that Lycos and Google would have negotiated a fully paid-up, freedom-to-operate, non-exclusive U.S. license to the Patents-in-Suit, for the life of the Patents-in-Suit, for a lump sum amount [redacted]

Exhibit 1

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Dr. Keith R. Ugone has provided economic and damages consulting services in antitrust cases, breach of contract cases, business interruption cases, employment / loss of earnings cases, intellectual property cases, lender liability cases, professional negligence cases, and securities-related cases, among others. He specializes in the application of economic principles to complex business disputes and is generally retained in cases requiring economic analyses and/or damages-related analyses. Damage models constructed or evaluated by Dr. Ugone have had as components revenue analyses, lost sales analyses, cost analyses, assessments of the capacity to produce additional units, assessments of profitability, the competitive business environment in which the damages claim was being made, claimed lost profits, claimed lost business value, and claimed reasonable royalties. During the course of Dr. Ugone's career, he has frequently evaluated lost profits and valuation-related damages using large databases of information and complex computer models. Dr. Ugone also has performed economic liability analyses in antitrust matters including defining relevant markets, assessing market power, and evaluating alleged anticompetitive behavior. Dr. Ugone has testified at trial and in deposition over 200 times.

Dr. Ugone has a PhD in Economics from Arizona State University, an MA in Economics from the University of Southern California, and a BA in Economics from the University of Notre Dame. Subject areas of expertise include microeconomics, macroeconomics, industrial organization, antitrust/regulation, and econometrics. He is a member of the American Economic Association, the American Statistical Association, the National Association of Forensic Economists, and the Western Economics Association.

EDUCATION

1983	Ph.D., Economics, Arizona State University.
1979	M.A., Economics, University of Southern California.
1977	B.A., Economics, University of Notre Dame.

PROFESSIONAL EXPERIENCE

2004 - Present	Analysis Group, Dallas, Texas – Managing Principal.
1985 – 2003	PricewaterhouseCoopers LLP (and legacy firms) – Partner (Principal) 1992 – 2003; Senior Manager 1989 – 1992; Manager 1987 – 1989; Senior Consultant 1985 – 1987. Member of United States Admissions Committee (2003). Chairman of PricewaterhouseCoopers Intellectual Property Leadership Forum (2000 – 2003).
1983 – 1985	California State University, Northridge - Assistant Professor/Lecturer in Department of Economics, Full-time: 1983 – 1985, Part-time: 1986 – 1992.
1979 – 1983	Arizona State University - Faculty Associate/Teaching Assistant in Department of Economics.
1977 – 1979	Jet Propulsion Laboratory - Economic/Energy Analyst.

PROFESSIONAL AND BUSINESS AFFILIATIONS

American Economic Association
American Statistical Association
National Association of Forensic Economists
Western Economics Association

SELECTED LITIGATION CONSULTING EXPERIENCE (by Nature of Suit)

Securities: 10b-5 / Section 11 Cases

- Evaluated the economic damages being asserted by shareholders and debt holders of a bankrupt energy trading company against a brokerage firm. Plaintiffs alleged the brokerage firm recommended the stock and debt securities associated with the company even though it knew or should have known the deteriorating pre-bankruptcy financial condition of the company. Analyzed the trading patterns of the brokerage account customers and the stock price movements of the company upon issuance of analyst reports, and researched confounding events contributing to investors' trading of the securities-in-question. Demonstrated an economic causal link did not exist between the alleged wrongful conduct and the claimed trading patterns. Also evaluated the event study conducted by Plaintiffs' damages expert and the claimed inflation component embedded in the company's stock price. Demonstrated Plaintiffs' damages expert failed to remove the economic impact of confounding events. Performed an alternative damages evaluation.

- Evaluated shareholder and debt holder claimed damages against a major accounting firm relating to the issuance of allegedly false and misleading financial statements that did not identify certain assets of a communications company as impaired. Researched industry reports and analyst reports regarding the company's common stock and debt securities, evaluated an event study conducted by Plaintiff's damages expert, analyzed loss causation in accordance with *Dura*, studied the company's stock price movements before and during the claimed class period, and analyzed the company's stock price movement on the day of the alleged corrective disclosure. Demonstrated Plaintiffs' event study did not appropriately isolate the stock price movement associated solely with the alleged corrective disclosure as confounding events were not removed from the analysis. Performed an alternative damages calculation.

- Evaluated Plaintiffs' damages claim in a shareholder suit relating to the manufacturer of decoding equipment used in the wireless cable industry. Analysis demonstrated Plaintiffs' financial expert did not consider market speculation related to the wireless cable industry or Defendant's higher-than-expected earnings when calculating claimed damages. Additional errors included aggregating into claimed damages stock price increases unrelated to Plaintiffs' allegations and on "no announcement days".

- Evaluated damages claim against a major investment banking/underwriting firm relating to an aborted initial public offering in the temporary staffing industry. Analysis demonstrated methodological and conceptual errors in Plaintiff's econometrically-based claim that the projected post-IPO stock price of the company justified proceeding with the IPO. Also evaluated various components of Plaintiff's damages claim, including the profitability of Plaintiff's business, projected use of funds raised, ownership percentages in the company, and the funds that would have inured to the original owners of the company.

- Evaluated Plaintiffs' damages claim in a shareholder suit involving an international airline carrier. At issue were alleged misrepresentations concerning the airline's ability to reduce its maintenance costs. Demonstrated that the fifty percent decline in the company's stock price over a one-month period was for reasons unrelated to corrective disclosures concerning maintenance costs. Also reconstructed Plaintiffs' trading history, comparing the trading pattern to public announcements concerning the airline, and demonstrating a trading pattern inconsistent with Plaintiffs' theory of reliance on the alleged misrepresentations.

- General Overview. Performed an "event study" and/or evaluated claimed damages in various securities litigation cases involving firms in industries such as: airlines, biotechnology, computer software, commodities, banking, real estate development, life insurance, entertainment, communications, energy trading, investment banking, computer printers, health care, medical equipment, hotels, non-traditional automotive insurance, information technology services, workmen's compensation insurance, computer hardware, camera and photo finishing, intelligent disk drives, market research, trucking, temporary staffing, real estate investment trusts, computer networking, specialty stores, skilled nursing facilities, wireless cable encoding devices, the provision of software computer services to insurance companies, and the provision of professional services to power plants and large scale industrial facilities. Analyses included development of an appropriate peer group and isolation of economy-wide, industry-specific, and company-specific factors impacting the particular firm's stock price. Company-specific events often included unfavorable news announcements unrelated to the alleged misrepresentations and the ending of potential takeover bids. Also involved was a comparison of the firm's actual stock price to its "true value" line, the construction of a matrix to track ins-and-outs traders and retention shareholders, and an evaluation of damages under Section 10b-5 and Section 11 claims.

Securities: Merger/Takeover Related Cases

- Evaluated claimed damages against a major accounting firm by a transportation company that acquired another transportation company in alleged reliance upon the audited financial statements of the acquired company and its Mexican subsidiary. Plaintiff wrote down its investment in the Mexican subsidiary after the acquisition and based its damages claim on a subsequent decline in its stock price. Analyses included researching competing transportation companies, considerations associated with consummating the merger, analyst reports regarding the merger announcement and the investment write-down announcement, and earnings announcements from comparable companies. Demonstrated Plaintiff's damages expert did not establish an economic causal link between the alleged wrongful conduct of the Defendant and the claimed economic damages suffered by the Plaintiff and that confounding events were not taken into account appropriately.

- Evaluated Plaintiffs' damages claim relating to a merger in the banking industry. At issue was whether material adverse changes regarding loan loss reserves had occurred but were not disclosed. Analyzed whether the complained of events were related to conditions and circumstances in the banking industry. Also analyzed the value of alternative offers for the target bank and the pre-merger volatility in the acquiring bank's stock price.

- Evaluated Plaintiffs' claimed damages in a breach of contract matter involving the aborted sale of assisted living facilities. Analyzed current trends in the assisted living industry, the financial condition of the target company, the projected financial results of certain to-be-constructed properties, and the target company's performance relative to projections. Also at issue was whether a material adverse change had occurred in the target company's operations and business. Lost profit damages, interest-related damages, lost contract fees, and diminution-in-value damages were evaluated.

- Evaluated Plaintiffs' damages claim in a merger/acquisition-for-stock litigation in the information technology services industry. At issue was whether material adverse changes had occurred in the business condition of the acquiring company prior to the closing of the merger. Damages issues included investigating the nature of the agreed upon warranties and representations contained in the merger agreement, the stock price performance of similarly-situated firms, the length of the alleged damages period, the appropriate length of certain event windows, industry downturns, and the failure to account for the proper mitigation of damages.

- Analyzed a major entertainment company's stock price movement to determine the takeover premium paid by an acquiring company. Involved was quantifying the impact of takeover rumors prior to the takeover announcement to isolate that portion of the company's pre-acquisition increase in stock price due to takeover speculation as opposed to general industry trends.

- Served as financial advisor to a Special Litigation Committee ("SLC") investigating a shareholder approved merger vote in the telecommunications industry. The merger was not consummated, but the vote triggered the acceleration of vesting of options owned by the officers and directors of the target company. Assisted the SLC in analyzing the acceleration of options and various alternative settlement strategies.

Securities/Commodities: Other Cases

- Evaluated Plaintiff's claimed lost enterprise value damages relating to Defendants' allegedly fraudulent conduct resulting in an artificial acceleration of income, restatement of income, and ultimate bankruptcy of a food distribution company. Analyses included isolating the dollar magnitude of the alleged artificial acceleration of income allegedly created by Defendant's actions compared to other artificial accelerations of income, an assessment of alternative reasons for Plaintiff's business decline and ultimate bankruptcy, and evaluation of Plaintiff's valuation approaches.

- Evaluated the spot price of a base metal in a major commodities-related market manipulation matter. Developed an econometric model to explain the spot price movements of the base metal in an un-impacted period. Used the econometric model to evaluate what the spot price of the base metal would have been in the absence of the alleged manipulation.

- Calculated short-swing trading profits under Section 16(b) of the Securities Exchange Act of 1934 relating to the stock trading activities of an officer of a long distance telecommunications company. Issues analyzed included allocating stock purchases to stock sales of differing numbers of shares and accounting for a 3-for-1 reverse stock split during the period under consideration.

- Evaluated damages in an alleged lack of suitability, lack of supervision, and failure to execute matter in the securities industry. At issue was an investment strategy of selling short the same stock in which a restricted long position was also held. Demonstrated errors in Plaintiff's damages claim, including the failure to recognize that the financial objectives stated at the time of the development of the investment strategy were in fact met.

- Evaluated the stock price performance of a major distiller over a forty-year period. At issue was whether a portion of the increase in the stock price could be attributed to the efforts of one senior official in the corporation. Company-specific, industry-specific, and economy-wide factors were investigated to determine the reasons for the stock price performance of the distilling company.

Antitrust: Monopolization/Attempted Monopolization Cases

- Evaluated the competitive impact of certain covenants not to compete associated with restricted stock unit awards issued to operations management employees by a major dairy processor. Evaluated the relevant product and geographic markets. Concluded that the covenants not to compete were overly broad and restrictive, outweighing any precompetitive benefits associated with the covenants. Concluded that the covenants did not contain reasonable limitations as to time frame and scope of activity. The covenants effectively restricted competition and raised rivals' costs in the relevant market.

- Evaluated Plaintiff's damages claim associated with the assertion that certain freight forwarders engaged in bid rigging, price fixing, group boycott, and illegal tying arrangements in a traffic channel for transporting military household goods. Demonstrated the flaws in Plaintiff's damages claim, including but not limited to, declines in revenues and profits prior to the alleged conspiracy period, alternative reasons for the Plaintiff's poor performance during the claimed damages period (e.g., the closing of military bases and increased competition in one leg of the channel), and the use of an inappropriate benchmark period for quantifying claimed damages.

- Evaluated the anticompetitive impact of an alleged conspiracy between a distributor and manufacturer whereby the manufacturer refused to ship certain aftermarket automotive exhaust systems and catalytic converters to a competing distributor in Washington and Oregon. Analyses included evaluating the relevant product and geographic markets for aftermarket automotive exhaust products and the damages suffered by the competing distributor. Also evaluated the competing distributor's direct and indirect price discrimination claims (including differential discounts in areas where shipments did occur) and associated claimed damages.

- Analyzed various monopolization allegations in an antitrust counterclaim to a patent infringement matter in the home lighting control systems industry. Analyzed the trade practices of the home lighting control system manufacturers (e.g., sales channels, advertising and promotion, etc.), product and geographical markets, and the potential substitutes to the products at issue. Analyses demonstrated counterclaim Defendant did not possess the ability to monopolize the relevant market for home lighting control products given the channels through which manufacturers made sales and the availability of close substitute products.

- Evaluated Plaintiff's economic liability arguments in an antitrust counterclaim relating to a supply agreement for an ingredient (i.e., larch arabinogalactan) contained in certain patented dietary and nutritional supplements for the promotion and maintenance of good health. Concluded that (a) the sales agreement in question did not constitute an unreasonable restraint on trade, (b) the Defendant did not possess monopoly power, and (c) the Defendant did not engaged in anticompetitive behavior in any properly defined relevant market. Observed that the prices of dietary supplements containing arabinogalactan did not increase since the signing of the sales agreement, the output of dietary supplements containing arabinogalactan did not decline since the signing of the sales agreement, (c) the capacity to produce additional arabinogalactan had been increasing, and (d) Plaintiff did not face a dangerous probability of being harmed by the supply agreement.

- Evaluated claimed antitrust damages asserted by the holder of certain common packet channel ("CPCH") technology patents against a group of handheld mobile device hardware and infrastructure manufacturers for an alleged conspiracy to deprive the patent holder of the value of its patented technology in the third generation partnership project ("3GPP"). The patent holder's technology had been removed as an optional standard. Damages-related analyses included conducting a *Georgia-Pacific* analysis and analyzing the licenses identified by Plaintiff's expert as comparable to the patents at issue. Also determined that Plaintiff's expert had not established an economic causal link between the alleged wrongful conduct and the damages being claimed.

- Evaluated the claimed anticompetitive activities of Defendant hospital's alleged exclusionary arrangements and practices relating to managed care contracts. Evaluated the relevant antitrust markets (product and geographic) for primary care services provided by physicians to managed care-covered patients in Smith County, Texas. Also evaluated the volume of commerce impacted by the claimed exclusionary practices and the impact of these claimed exclusionary practices on competition in the relevant markets. In addition, evaluated the economic damages suffered by the Plaintiff hospital as a result of Defendant's alleged anticompetitive activities.

- Evaluated Plaintiff's claim of antitrust injury in the markets for orthodontic brackets and orthodontic services allegedly due to the advertising guidelines promulgated by a national orthodontic trade association. Analysis demonstrated the advertising guidelines were efficiency enhancing (by lowering consumer search costs), promoted competition, and did not stifle innovation in the relevant markets. Also empirically demonstrated that legitimate advertising through a variety of media was not impacted by the advertising guidelines.

- Evaluated distributors' claims of past lost profits, future lost profits, and reductions in franchise values in a carbonated soft drink antitrust litigation. Defendants allegedly entered into a series of anti-competitive marketing agreements with retailers relative to the promotion and sale of national brand carbonated beverages. Analysis demonstrated Plaintiffs' expert did not take into account the brand composition of Plaintiffs' case sales, underestimated variable costs of distribution, did not adjust for increased competition from private-label brands and other drinks, and failed to account for the lack of advertising and other promotional support from the distributors' parent company.

- Analyzed the impact of a proposed merger of two insurance companies on the long term care and medicare supplement insurance markets in the state of Oklahoma. Evaluated whether the merger would substantially lessen competition or have a tendency to create a monopoly. Evaluated the number of competitors, the reasonable interchangeability of the insurance products offered, insurance company sizes, ease of entry, the impact of regulation, and the ability of consumers to acquire price information in a low-cost manner.

- Analyzed the alleged anticompetitive impact of an exclusive provider arrangement between a hospital and a group of anesthesiologists on the market for anesthesia services. Analyses included determining inpatient services market shares, anesthesia procedures market shares, and recent entry into the hospital service area. Also evaluated the damages claims being alleged by a group of Certified Registered Nurse Anesthetists.

- Conducted an economic analysis in a vertical non-price (advertising) restraint antitrust case dealing with tennis ball throwing machines. Analysis demonstrated the pro-competitive nature of the advertising restraint and that the termination of a non-complying dealer did not substantially reduce competition in the relevant market.

- General Overview. Provided economic analyses and developed damages models and/or critiqued the opposition's damages models in various antitrust cases involving the following industries and/or markets: anesthesia services, printed circuit boards, nutritional supplements, carbonated soft drinks, aftermarket automotive exhaust systems, telecommunications switching equipment, dairy processing, radio control model airplanes, local area networks, entertainment lighting, integrated casino bonusing software, home lighting control systems, medicare supplement/long term care insurance, commercial air conditioning units, disposable dust/mist respirators, immunodiagnostic tests, in-patient hospital services and managed care contracts, PBX systems, military freight forwarding, underground storage tanks, long distance telephone lines, tennis ball throwing machines, check processing readers/sorters, local television advertising, personal watercraft, automobile refinishing paint, Christian music, subsea horizontal extraction wells, orthodontic braces, DRAM microcomputer chips, women's designer clothes, single point of contact telecommunication services, non-prescription reading glasses, and the provision of temporary electrical services to convention centers. Damages models were constructed or critiqued that involved lost sales analyses, incremental cost analyses, and assessments of capacity increases. Also investigated were economic forces external to the company that may have impacted the company's performance. Economic analyses included defining the relevant market, assessing the presence or absence of market power, evaluating whether a business activity was pro-competitive or anti-competitive, and/or evaluating the level of competition in a particular market.

Antitrust: Predatory Pricing/Price Discrimination Cases

- Evaluated the relevant product and geographic markets and impact on competition in a price discrimination case involving a manufacturer of lighting products and the prices charged to various distributors. Analyses included an investigation of the primary-line market (i.e., competition among manufacturers of lighting products) and the secondary-line market (i.e., competition among distributors). The impact on competition among the distributors of lighting products was investigated (and whether a substantial lessening of competition occurred) given the pricing policies and programs of the manufacturer.

- Reviewed the newly proposed pricing structure of a major magazine distributor to identify the efficiency enhancing attributes of the proposed pricing structure as well as potential discriminatory effects. The proposed pricing structure was a major change from industry practices and included per copy distribution fees and excess return fees.
- Evaluated the economic and damages-related claims made in a major price discrimination case in the pharmaceutical industry. At issue were the additional sales and profits that would have been made by grocery drug stores and retail drug chains in the absence of the alleged price discrimination.
- Conducted various industry and firm-specific analyses in a major wholesale bread predatory pricing case. Bread industry studies included analyses of industry profitability rates, the changing size distribution of firms in the industry, and general trends in wholesale bread prices. Firm-specific studies included analyses of advertising rates, "cripple" (i.e., reject) rates, and "stale" (i.e., return) rates. Also involved was a critique of Plaintiff's calculation of Defendant's average variable cost of producing and distributing a loaf of bread.
- Calculated the average cost of servicing a three-yard bin of trash in a solid waste disposal predatory pricing case. Also included was an analysis of number of routes and bin pickups per route.

Antitrust: Tying Cases

- Evaluated certain economic and damages claims made by a local television station against a television program syndicator. At issue was an alleged unlawful tying arrangement relating to the claimed requirement to license *Becker* in order to license *Judge Judy* and *Judge Joe Brown*. Demonstrated the syndicator did not possess market power in a properly defined market since substitution existed between different genre of television programs, between different syndicators, between different demographic groups, and between different types of syndicated programming (i.e., first-run, off-network, and evergreen programming). Also demonstrated that the pricing patterns of the syndicator were inconsistent with the antitrust claims being made.
- Evaluated an unlawful tying claim brought by a pizza franchisee against its franchisor. Franchisees were required to purchase equipment and supplies from an approved supplier owned by the pizza franchisor. Plaintiff alleged the claimed unlawful tying arrangement was enforced through threats of termination of the franchise agreement. Demonstrated that the pizza franchisor did not possess market power in the consumer market for pizza, in the provision of equipment and supplies to franchisees, or in the market for pizza franchises. Also demonstrated the economic justifications for the requirement (i.e., maintaining quality standards, uniformity of operations, and protection of brand name).
- Critiqued Plaintiff's damage model in an alleged tying case dealing with automotive CAD/CAM design software (the "tying" good) and mainframe timesharing (the "tied" good). At issue was the total size of the market, the likelihood of entry, and the market share of the Plaintiff in the absence of the alleged tie. Also investigated was the likelihood that design vendors would place the software on their own mainframes rather than timeshare.
- Analyzed the fast food point-of-sale ("POS") equipment and software industry in an alleged tying case. Demonstrated that a particular POS product was not a relevant market based on the reasonable interchangeability of various brands of fast food POS equipment from the perspective of the consumer (fast food restaurants). Also analyzed the degree of price competition, non-price competition, ease of entry, and relative market shares of fast food POS equipment manufacturers.

Business Interruption/Interference Cases

- Evaluated Plaintiffs' claimed damages in a tortious interference, business disparagement, and breach of contract matter dealing with the licensing of testing equipment in the petrochemical piping inspection industry. Demonstrated Plaintiff's expert committed errors relating to the duration of the contracts in dispute, system license fees, cost of replacement systems, pricing of services, utilization of the test systems, and mitigation of future damages.

- Evaluated Plaintiff's claimed damages from a lost bid to retrofit a refinery in Pakistan. Analyzed Plaintiff's allegations that Defendants made untrue statements to the bid evaluation team concerning Plaintiff's net worth, working capital, and profitability trends. Evaluated Plaintiff's claimed damages using as a benchmark prior engineering projects completed by Plaintiff.

- Calculated damages suffered by the owner of numerous mobile home parks due to the actions of a Defendant in a case involving alleged intentional interference with contractual relations. Involved was an analysis of occupancy rates, a projection of park revenues in the absence of the alleged interference, and an analysis of mobile home park incremental profitability rates.

- Evaluated the damages sustained by a cosmetic company as a result of defective decorated glass containers being furnished for its new therapy products. Evaluated and/or verified product retrieval costs, retrieval program administration costs, customer goodwill replacement gift costs, waste disposal costs, and lost profits on the therapy products. The lost profits analysis included assessing the life cycle sales pattern of new cosmetic products introduced by the company.

- Evaluated damages relating to the introduction of a new popcorn product line in a business interruption dispute. The introduction of the new popcorn product line was aborted due to defective containers. Analyses undertaken included determining the cost of popcorn, the cost of popcorn bags, freight costs, as well as the projected revenues associated with popcorn sales. An assessment was also made of the supermarket outlets and territories in which the popcorn would have been sold.

- Evaluated Plaintiffs' damages claim relating to the installation of an allegedly defective computer software system at an automobile dealership. Plaintiffs contended the software had defects adversely affecting the accounting system and day-to-day operations of the dealership, and submitted an "increased cost" damages claim. Analysis demonstrated Plaintiffs' expert used an inappropriate methodology for measuring damages and submitted cost increases unrelated to the allegedly defective software.

- <u>Other Matters</u>. Provided deposition questions, economic analyses, and a critique of opposing economists' damage models in various business interruption cases resulting from (e.g.) fires, "lockouts", electrical outages, defective products, and/or injuries to key personnel. Businesses evaluated included a workout facility (gym), a pediatric practice, a balloon manufacturing plant, a radiology practice, and a packaging machine manufacturer.

<u>Intellectual Property: Patent Infringement and Patent-Related Cases</u>

- Evaluated the claimed royalty damages the owners of a patent related to the processing of documents with arbitrary XML elements were asserting against a major software manufacturer for allegedly incorporating the patented technology into its software applications. Based upon an evaluation of the historical financial performance of the Plaintiffs before and after the time of the hypothetical negotiation, market demand for and supply of products similar to the allegedly embodying products, the respective economic contributions of the Parties to the successful commercialization of the accused products, and the *Georgia-Pacific* factors, opined to an alternative royalty damages estimate. Also evaluated the four factors outlined in *eBay Inc. v. Mercexchange L.L.C.* and opined that based upon economic considerations an injunction against the accused products was not warranted.

- Analyzed Plaintiff's lost profits and reasonable royalty damages in two separate patent infringement matters relating to scanning, counting, and counterfeit detection technologies in currency discriminators. In both matters, analyzed the *Panduit* and *Georgia-Pacific* factors, constructed a hypothetical negotiation framework, conducted market and industry research, and compiled an accused product sales database. With respect to Plaintiff's lost profits-related damages, performed incremental profit analyses on lost unit sales and ancillary sales. Evaluated Plaintiff's reasonable royalty-related damages taking into account the economics associated with currency discriminator sales. Evaluated damages under a variety of scenarios based upon potential findings of infringement on patents and claims contained in these patents.

- Evaluated the claimed damages of a foam ear sleeve manufacturer who brought suit against a high-performance professional and personal audio earphone manufacturer alleging patent infringement relating to ear pieces having disposable compressible polymeric foam sleeves. Evaluated Plaintiff claimed royalty damages using market and industry data, a *Georgia-Pacific* factor analysis, and the changing licensing policies of the patent holder over time. Provided an alternative royalty damages analysis. Also analyzed from an economic perspective Defendant's countersuit of alleged patent misuse. Reviewed the patent holder's licensing strategy and certain provisions contained in the licenses into which the patent holder entered. Analyses demonstrated the patent holder's licensing strategy and the provisions contained in its licenses were consistent with the allegation of patent misuse.

- Evaluated Plaintiffs' claimed royalty damages in two separate patent infringement matters relating to video game controllers. The first matter related to six degrees of freedom video controller technology; the second matter related to controller-to-processor voltage technology. In both matters, conducted market and industry research, performed a *Georgia-Pacific* analysis, and evaluated company-specific and controller-related licenses. Also evaluated the key drivers of Defendant's sales including its brand name, innovative products and games, and installed base of gaming console owners. Provided an alternative royalty damages figure.

- Evaluated Plaintiff's lost profits and price erosion damages in a patent infringement matter relating to a method for delivering internet content from a network of content delivery network ("CDN") servers. The suit was brought by a CDN services provider. Evaluated Plaintiff's lost profits-related damages using market share data, adjusting for customer and market segment differences and the likelihood of supplemental sales. Evaluated Plaintiff's price erosion-related damages for selected customers for whom Plaintiff was required to lower rates and/or renegotiate contracts based upon the alleged unlawful competition of the Defendant.

- Analyzed Plaintiff's lost profits and reasonable royalty damages in two separate patent infringement matters relating to status feedback in home lighting control systems. Performed analyses on a large database of invoices relating to sales of the accused products, analyzed end-user surveys, and identified ancillary sales based upon consumer purchasing patterns. Conducted *Panduit* and *Georgia-Pacific* analyses. Calculated Plaintiff's lost sales based upon market share data reflected in industry surveys. Calculated Plaintiff's royalty damages based upon comparable license analyses.

- In a patent infringement matter relating to the air interface protocol of UMTS/WCDMA cellular phone technology, evaluated whether the Plaintiff had offered Defendant a license to the patents-in-suit on fair, reasonable, and non-discriminatory ("FRAND") terms (as required by the European Telecommunications Standards Institute's intellectual property rights policy). Analyzed the economic benefits associated with patents, the economic benefits associated with standard setting organizations, and the economic evidence related to the FRAND principles. Concluded that none of Plaintiff's licensing offers comported with FRAND principles.

- Evaluated Plaintiff's claimed lost profits in a patent infringement suit against a medical device manufacturer producing trocars with floating septum seals. Analyzed market data relating to trocar products, competitors, and market share information. Also analyzed hospital data with respect to product use and conversion between different manufacturers. Demonstrated that Plaintiff had not demonstrated Defendant would have lost sales and Plaintiff would have gained sales in the absence of the alleged infringement. Concluded a claim for lost profits was not warranted.

- Evaluated Plaintiff's claimed royalty damages asserted against a major software manufacturer in a patent infringement matter relating to a pre-fetch concept allowing for the faster loading of operating systems and software applications. Analyzed the financial performance of the patent holder at the time of the hypothetical negotiation, the drivers of demand for the products allegedly embodying the patent-in-suit, the Parties' respective contributions to the successful commercialization of the accused products, the Parties patent licensing approaches, and the relevant *Georgia-Pacific* factors. Opined to an alternative royalty damages estimate.

- Evaluated the joint venture lost profits and reasonable royalty damages in a patent infringement suit brought by a natural gas producer against an energy producer relating to a system for producing natural gas from unconventional reservoirs. Constructed an economic model incorporating complex technical and economic relationships to determine the value of the natural gas likely to be captured from the reservoirs in question. Conducted a *Panduit* factor and a *Georgia-Pacific* factor analysis.

- Evaluated claimed royalty damages in a patent infringement suit against a nutritional supplement manufacturer and distributor for the alleged infringement of two patents relating to hydrosoluble organic salts and certain compositions and methods for enhancing muscle performance and recovery from fatigue in humans. Concluded Plaintiff's expert inappropriately constructed the hypothetical negotiation framework, failed to consider non-infringing alternative compositions, and overstated the claimed reasonable royalty rate in light of licensing evidence.

- Evaluated claimed damages in a patent infringement matter relating to course management system ("CSM") products and services using the Internet to facilitate the interaction of students and instructors. Conducted a *Panduit* and a *Georgia-Pacific* factor analysis. Calculated lost profits and reasonable royalty damages. Also analyzed Plaintiff's business model and revenue types, Defendant's infringing sales based upon customer licensing agreements and contracts, Plaintiff's prior relationship with Defendant's customers, and Plaintiff's incremental profitability.

- Evaluated Plaintiff's royalty damages claim in a suit brought by a patent holding company against a major software manufacturer relating to certain pivot table functionalities in software. Opined to an alternative royalty damages figure based upon an analysis of the *Georgia-Pacific* factors, the demand for the products allegedly embodying the patent-in-suit, the failed licensing attempts by the former owners of the patent-in-suit, and the relative contributions of the Parties to the commercialization of the accused products.

- Evaluated the royalty damages allegedly suffered by a patent holder against a major internet services provider relating to a method for streaming media over the internet (which facilitated the transmission of real-time, high-quality audio information over a communications network to multiple users simultaneously). Demonstrated that the patent holder's economic expert overstated the claimed reasonable royalty rate, overstated the claimed royalty base, and reached conclusions that failed numerous reliability tests. Also demonstrated that the patent holder's economic expert failed to properly recognize the economics associated with internet radio, leading to an incorrect conclusion as to the proper royalty base that would have been agreed upon at the hypothetical negotiation.

- Evaluated claimed damages in a patent infringement matter filed by an operator of a web-based market place against a competing company relating to the submission of automobile purchase requests over the internet. Analyzed market and industry data relating to Plaintiff's line of business, Plaintiff's and Defendant's financial performance, and Plaintiff's and Defendant's respective market shares. Estimated Plaintiff's lost profits damages.

- Evaluated claimed reasonable royalty damages in a patent infringement matter involving 5 defendants relating to congestion management in ATM networks. Analysis included an assessment of sales of ATM network products allegedly containing the patented feature, an analysis of the price of the integrated circuits embodying the accused functionality relative to the price of the entire ATM product, and a review of industry license agreements. Provided alternative reasonable royalty damages based upon the *Georgia-Pacific* factors in addition to a determining the important negotiating points in a hypothetical licensor / licensee negotiation.

- Evaluated claimed reasonable royalty damages in a patent infringement matter relating to implantable rate responsive pacemakers and implantable cardioverter devices ("ICDs"). Analysis included an assessment of alleged infringing sales of pacemakers and ICDs, a review of license agreements, and an analysis of the defendant's cost savings associated with the allegedly infringing technology as compared to its next best alternative. Determined reasonable royalty damages based upon the *Georgia-Pacific* factors, and the important negotiating points in a hypothetical licensor / licensee negotiation.

- Evaluated Plaintiff's lost profits and reasonable royalty damages in a patent infringement matter relating to DVR technology. Analysis included an assessment of Plaintiff's sales of DVR products and monthly subscriptions in the absence of the alleged infringement and an incremental revenue and cost analysis. Determined reasonable royalty damages based upon the *Georgia-Pacific* factors and a determination of important negotiating points in a hypothetical licensor / licensee negotiation.

- Evaluated lost profit damages in a patent infringement matter involving blasting hole drilling rigs. At issue were the lost profits stemming from lost rig sales and lost replacement part sales. With respect to lost rig sales, evaluated the model types, geographic sales coverage, and model prices of the entities involved. Also evaluated the capacity of the Plaintiff to make the additional claimed sales. With respect to lost replacement part damages, evaluated the likely stream of replacement part sales over the life of the drilling rig. Royalty calculations were performed on sales not subject to lost profit calculations.

Intellectual Property: Theft of Trade Secrets Cases

- Evaluated Plaintiff's economic damages suffered as a result of Defendant's misappropriation of trade secrets relating to a to-be-commercialized medical device for the treatment of obesity and Type II diabetes. Plaintiff's claims related to Defendant's misappropriation and use of Plaintiff's trade secrets, breach of confidences, breach of confidential disclosure agreements, unjust enrichment at Plaintiff's expense, and certain misrepresentations. Evaluated Plaintiff's trade secret-related damages using a hypothetical negotiation / reasonable royalty approach.

- Evaluated Plaintiff's claimed damages in a trade secret matter relating to sales configuration software. Plaintiff alleged Defendant copied and used the software internally in unauthorized ways, used the misappropriated trade secrets in conjunction with competing software products, and disclosed the trade secrets to competitors. Evaluated Plaintiff's lost profits relating to Defendant's unauthorized use of the sales configuration software and also evaluated disgorgement-related damages.

- Evaluated Plaintiff's claimed damages in a trade secret theft case in the golf equipment industry. Plaintiff claimed disgorgement of global profits and other unjust enrichment due to the alleged misappropriation of certain golf club design trade secrets through the Defendant's sale of the company and assets to a large sporting goods company. Analysis included calculating net profits from the sale of the accused golf clubs and evaluating claimed reasonable royalty damages.

- Evaluated Defendant's assessment of the incremental costs associated with a contract to provide integrated bonusing software to a casino. The contract allegedly was won through the use of misappropriated trade secrets from the Plaintiff. At issue was the allocation of development and common costs to the contract in dispute. Also evaluated Plaintiff's antitrust counterclaim to Defendant's patent infringement suit relating to the technology used as a foundation for the integrated bonusing software.

- Evaluated damages in a theft of trade secrets matter dealing with next generation switching equipment in the telecommunications industry. At issue was the alleged theft of trade secrets when the Defendant firm hired nine employees of the Plaintiff firm. Analyzed Plaintiff's claimed inability to maintain its projected market share, the alleged accelerated entry of the Defendant firm into the next generation switching equipment market, disgorgement measures of damages, and reasonable royalty measures of damages.

- Evaluated damages suffered by a Plaintiff in the business of installing systems delivering ultra-high purity air, water, gas and chemicals to companies manufacturing integrated circuits. Plaintiff alleged a former managerial employee breached his fiduciary duty by engaging in wrongful use of trade secrets, wrongful solicitation of employees and customers, and unfair competition with the original employer. Analysis involved estimating the lost sales and lost profits to the original employer by estimating the number of bid opportunities missed because of the alleged actions of the former employee, adjusting for changing industry conditions.

- Critiqued Plaintiff's damage model in a trade secrets case in the printed circuit board industry. Plaintiff was claiming lost profits due to the misappropriation of trade secrets through Defendant's hiring of four key management personnel from the Plaintiff's company. Issues evaluated included the appropriateness of the "proxy/yardstick" approach undertaken to estimate lost revenues, and the incremental profit rates used to translate lost revenues into lost profits.

Intellectual Property: Copyright/Trademark/Trade Dress Infringement/False Advertising Cases

- Evaluated Plaintiff's claimed damages relating to the alleged failure of a TV station to deliver contracted gross rating points over a 6-year period. Plaintiff was claiming lost sales and lost profits based upon a regression analysis used to isolate a relationship between sales revenues and advertising. Demonstrated Plaintiff's regression omitted important explanatory variables (e.g., consumer income, promotions, discounts, competitors' prices, and other print and TV advertising conducted by the Plaintiff). Also demonstrated a failure to account for diminishing returns to advertising. Each of these errors served to increase the magnitude of the claimed relationship between sales revenues and advertising.

- Evaluated Plaintiff's unjust enrichment damages claims in a copyright infringement matter brought against a hospital and a construction company relating to a medical building design. Compared budgeted construction costs to actual construction costs and analyzed the revenues received by the construction company associated with the copyrighted attributes of the building design as opposed to unrelated construction costs. Also analyzed the likely demand-related reasons for revenues that would accrue to the hospital unrelated to the design of the hospital.

- Evaluated claimed damages in a false advertising matter involving tooth-whitening products between two large consumer product companies. At issue were allegedly false, misleading, and disparaging statements about Plaintiff's tooth-whitening products in comparative advertisements shown on television. Plaintiff sought to recover lost profits damages associated with reduced sales resulting from the alleged false advertising. Analyses included an evaluation and critique of Plaintiff's expert's claimed damages model including analysis of A.C. Nielsen scanner data and CMR media data. Analysis demonstrated that Plaintiff's expert did not measure properly the impact of the alleged misleading content, failed to account for alternative reasons for Plaintiff's sales declines, and implemented an incorrectly specified econometric model.

- Provided economic analysis relating to claims of unfair competition and misleading advertising in the pizza industry. Using economic indicia such as dollar sales revenue, trends in market share, growth in number of stores opened, same-store sales data, and store closure rates, evaluated whether the commercial success of a particular pizza company was due to customer acceptance of its pizza product or allegedly deceptive advertising. Also investigated the buying patterns of pizza consumers with respect to cross-chain patronage.

- Critiqued Plaintiff's damage claim in a matter involving alleged tortious interference with business relations and allegations of trade dress infringement. At issue was the projected sales and profitability of Plaintiff's tape dispensing machines during a period of alleged tortious interference by the Defendant and Plaintiff's simultaneous alleged trade dress infringement.

- Analyzed the lost profits of a Plaintiff in a trademark infringement case involving a law enforcement product sold through a mail-order catalog. Also analyzed the profits of the alleged infringer and the cost of remedial advertising.

- Assessed damages resulting from the alleged infringement of copyrighted training manuals. Analysis included identifying the corporate clients of the Plaintiff and Defendant firms and the reasons for customer switching unrelated to the use of the proprietary training manuals.

Intellectual Property: Commercial Success Cases

- Evaluated indicators of commercial success relating to a surgical hernia mesh fixation device employing a patented helical tacker design. Demonstrated that the patented device had achieved significant and sustained sales and sales growth. Also demonstrated that the sales of the patented device had grown faster than the sales of other hernia mesh fixation devices and achieved a majority share of sales when compared to staplers and other hernia mesh fixation products.
- Submitted a rebuttal declaration to the U.S. Patent and Trademark Office relating to the claimed commercial success of intrusion prevention system ("IPS") products asserted to practice a patent undergoing an *Inter Partes* reexamination. Opined that an economic nexus had not been established between the claimed teachings of the patent and the commercial success of stand-alone IPS products. The patent holder had not demonstrated that the claimed teachings of the patent were commercially successful separate and apart from (a) features not claimed by the patent, (b) economic factors extraneous to the claimed invention, or (c) features covered by other patents present in the IPS products.
- Evaluated Plaintiff's analysis regarding the claimed nexus between a patented technology and the commercial success of the accused devices in this patent infringement matter relating to text messaging using a limited keypad such as those found on cell phones. Analyses demonstrated Plaintiff's failed to consider many factors that lead to the commercial success of the accused devices unrelated to the patent in dispute.

Breach of Contract / Breach of Fiduciary Duty Cases

- Evaluated Counter-Plaintiff's claimed damages arising from Counter-Defendant's failure to honor a most-favored licensee provision in a licensing agreement relating to a semiconductor patent portfolio. Opined as to the economic interpretation of certain licensing terms and the differences and similarities between lump sum, per unit, and percentage of revenue royalty payments. Compared the licensing terms between the Counter-Defendant and another party with the licensing terms between Counter-Defendant and Counter-Plaintiff.
- Evaluated Plaintiffs' claimed damages arising from an alleged breach of contract related to the sale of a community club house and other recreational facilities in an age-restricted residential neighborhood. Plaintiffs' claimed that since they were not given the opportunity to exercise their right-of-first refusal to purchase the contested real estate assets, they lost the value of the equity associated with the real estate assets and they were required to make excessive operating expense payments. Determined that Plaintiffs' expert failed to properly consider the economic factors driving the value of the real estate assets in question.
- Evaluated Plaintiff's breach of contract damages claim relating to the use of a national brand name and other support for the development of a time share resort. Concluded Plaintiff had not demonstrated an economic causal link between Plaintiff's allegations and the quantum of damages being claimed. Adjusted Plaintiff's claimed damages for various conceptual and computational errors, including alternative actions that might have been undertaken by the Plaintiff in the absence of the alleged wrongful conduct.
- Evaluated claimed damages in an alleged breach of fiduciary duty matter between a franchisee and a major fast food franchisor relating to the development and managing of fast-food franchises. Plaintiff claimed economic harm due to franchisor's refusal to grant certain additional franchisees to Plaintiff that Plaintiff claimed would otherwise be in competition with the Plaintiff's existing franchises. Concluded Plaintiff's impact analysis failed to take into account many factors affecting the performance of the Plaintiff's existing franchises that were unrelated to the alleged wrongful conduct.

- Evaluated claimed breach of contract and misrepresentation damages in a suit brought by a global information technology company against a global professional services company relating to a joint venture agreement under which a human resources outsourcing company was formed. Analysis included conducting a client-by-client analysis regarding the specific wrongful conduct associated with each client of the joint venture and estimated the associated economic damages. Based upon certain parameters contained in the contract, also calculated the purchase price overpayment had certain performance issues come to light prior to the closing of the joint venture agreement.
- Evaluated a developer's/franchisee's damages claim against a major sandwich franchisor for the alleged breach of a five-state area development agreement. Reviewed the area development agreement, analyzed the revenues, costs, and profitability associated with franchised outlets, and estimated the Plaintiff's lost franchise fees and lost royalty income based upon various alternative scenarios discussed by the Parties.
- Evaluated the claimed damages of a calling card distribution company due to Defendant's alleged breach of a contract relating to the servicing of the calling cards. Conducted market research on the calling card industry, analyzed alternative reasons for the alleged decline in calling card sales, and evaluated Plaintiff's damages expert's report.
- Evaluated Plaintiff's damages claim concerning the alleged failure of a call center to properly process inquiries relating to the newspaper and television marketing of a collectible doll in the likeness of a recently deceased public figure. Analyzed advertising expenditures, response rates across cities, major news announcements related to the marketing of such merchandise, and contributing problems caused by Plaintiff's actions. Estimated damages by comparing sales in an unimpacted period with sales in the alleged impacted period.
- Evaluated Plaintiffs' damages claim relating to the underwriting and loan servicing of subprime automobile loans. Plaintiffs' contended the servicing company did not properly administer the portfolio of subprime automobile loans thereby causing excessive loan losses. Analysis demonstrated that Plaintiffs' financial experts failed to take into account alternative reasons for Plaintiffs' performance. Analysis of Plaintiffs' loan volume, interest income, loan loss rate, and deteriorating industry conditions also demonstrated that Plaintiffs' business plan did not provide a reasonable basis from which to calculate claimed damages.
- Evaluated Plaintiff's claim of lost profits relating to the collection of ballots for a Mexican telecommunication company in Mexico's Equal Access program. Analyzed a database of telephone customers, including statistics such as the length of service, average monthly consumption patterns, current billing status, and differences between residential and commercial customers. Developed an alternative claimed damages model taking into account consumption patterns and the turnover rate of customers, among other factors.
- Evaluated Plaintiffs' claim of lost success fees, lost closing fees, and underpayment of value relating to Defendant's acquisition of an oncology laboratory and the alleged failure to consummate additional acquisitions. Analysis demonstrated Plaintiffs' projections regarding the profitability of the proposed acquisitions were not reasonable given the historical financial performance of the targets. Also demonstrated Plaintiffs were not underpaid for the assets of the acquired laboratory since no investor or buyer was willing to provide funds to Plaintiffs pre-acquisition and since Plaintiffs in their valuation approach inappropriately assigned all post-acquisition synergies and gains to the Plaintiffs.
- Evaluated Plaintiff's damage claim arising from an alleged misappropriated opportunity to develop a computer superstore franchise in Mexico based on the equivalent U. S. concept. Demonstrated Plaintiffs overstated per store revenue, understated store-level costs, and used inappropriate financial and strategic assumptions regarding the number of stores opened, the amount of capital required, outside investor contribution, equity shares, and strategic acquisitions. Plaintiffs also conducted a valuation based on companies bearing little or no resemblance to a computer superstore.

- Evaluated Plaintiff's claim of lost profits arising from an alleged breach of contract involving two tubular inspection equipment manufacturing companies. Analyses demonstrated that Plaintiff's expert overstated the projected utilization rate of the company's equipment and associated revenue and understated the projected incremental costs that would have been incurred by Plaintiff. Analyses demonstrated market demand would not support the equipment utilization rate projected by Plaintiff's expert.
- Evaluated Plaintiff's claim of damages in a breach of contract matter in the magazine publishing and distribution industry. Plaintiff claimed Defendants breached a distribution agreement by suspending distribution pending the resolution of a trademark infringement dispute. Plaintiff abandoned the magazine, claiming lost profits and the estimated lost value of the magazine had it been sold after its fourth year of publication. Analysis demonstrated Plaintiff's expert overstated subscription-based revenues, distorted the cost/revenue structure that would have existed for the magazine, and overstated the likelihood of success by ignoring the failure of similar genre magazines.
- Evaluated the damages sustained by the public safety division of an information technology services firm due to the early termination a ten-year services agreement to provide enhanced 9-1-1 services to a governmental agency. One-time up-front implementation costs in setting up the 9-1-1 system and ongoing operational costs were compiled in constructing a cost reimbursement damage claim. Also evaluated the reasonableness of an early termination charge schedule designed to represent the one-time buyout total if the governmental entity opted to terminate the contract before the ten-year term expired.
- Evaluated the damage claim of a bank arising from an allegedly defective conversion of the bank's data processing system. Areas investigated included the softening macroeconomic environment surrounding the bank during the relevant time period, the changing financial services market, internal bank ratios, and technical flaws contained in Plaintiff's damage calculations.
- Estimated lost sales and lost royalty payments to a "thick" potato chip producer due to a breach of contract. Involved was the construction of a damage model, analyses of the market for potato chips and per capita potato chip consumption, and projecting the rate of introduction of a new potato chip into regional markets.
- Calculated damages and provided other economic analyses in a "lack of best efforts" breach of contract case in the carbonated soft drink industry. At issue was the impact on sales due to the "lack of best efforts" vs. the impact on sales from contemporaneous new entrants into the market.
- Calculated damages in a breach of contract matter involving an association of nephrologists and a management company operating 12 kidney dialysis clinics. Areas of investigation included the "profitability available for distribution" from the clinics, the projected rate of growth in patients, the rate of introduction of new clinics, and the costs associated with running the clinics. A damage model was developed which projected the profits that would have been distributed to the management company over the life of the contract in the absence of the breach.
- Evaluated claimed damages against a hospital for allegedly breaching a contract allowing hyperbaric oxygen services on hospital premises. Investigations included assessing the local market for hyperbaric services, evaluating Plaintiff's business growth potential given the physical space constraints at the hospital, and demonstrating Plaintiff had fully mitigated claimed future damages through the establishment of an alter ego firm at a nearby local hospital.

<u>Class Certification Engagements</u>

- Evaluated Plaintiffs' position that the economic injury allegedly suffered by putative class members could be quantified on a class-wide basis in a matter where a beverages company marketed certain beverages as "All Natural" when they contained high fructose corn syrup ("HFCS"). Demonstrated that wide variations existed in the beverages' retail prices across distribution outlets, across geographic areas, and across the time periods considered. Also demonstrated that wide variations existed in the beverages' retail prices because of promotional discounts and coupons and because the company did not sell directly to consumers. Consequently, whether consumers paid a price premium because of the "All Natural" labeling (and how much, if any) could not be determined by proof common to the proposed class. A comparison of the average retail prices of the "All Natural" beverages in dispute to identified benchmark products did not support the allegation that the "All Natural" beverages possessed a systematic price premium as a result of the "All Natural" labeling.

- Evaluated the commonality of purchasing circumstances of proposed Class members in a class action matter against a national quick service restaurant ("QSR") chain. Plaintiffs alleged the QSR misrepresented the trans fat levels contained in the QSR's french fries. Plaintiffs also alleged the proposed Class paid a price premium for certain food products based upon the alleged misrepresentations. After reviewing survey data, marketing materials, and pricing data, concluded that individual inquiries were required to establish different customer's awareness of the alleged misrepresentations, different customer's reliance upon the alleged misrepresentations in their purchasing decisions, and other important economic factors impacting each customer's purchase decision.

- Evaluated Plaintiffs' claim that Class members' alleged damages could be "mechanically calculated" in a class action matter against a payphone company's auditor. The payphone company had filed bankruptcy and the Class members alleged the auditor misrepresented the company's financial statements, upon which the Class members allegedly relied. Conducted economic and market research and identified factors that caused a general decline in the payphone industry which contributed to the bankruptcy of the company. Analyzed the claimholders' database and identified issues relating to the database that precluded Plaintiffs' expert from mechanically calculating the damages allegedly suffered by class members.

<u>Lender Liability Cases</u>

- Evaluated Plaintiff's allegations that it was capital constrained and consequently economically damaged as a result of its loans being placed into the special assets department of its lender. Analyzed the Plaintiff's unused cash, credit, and other available funds. Also analyzed Plaintiff's successful access to the capital markets, acquisition spending, R & D spending, sales performance, and profitability relative to peer companies.

- Analyzed Plaintiffs' damage claim in a lender liability suit relating to Defendant's alleged failure to fund certain residential housing development and construction loans. Evaluated Plaintiffs' changing five-year business plan projections, including revenue growth, geographic expansion, market share, salesmen coverage, cost structure, and profitability assumptions. Also evaluated Plaintiffs' strategy for "exiting" the business and the alleged value of their ownership at that time.

- Evaluated damages in a lender liability case involving the bankruptcy of a gear manufacturing company. The bankruptcy was allegedly due to the failure of a bank to fully fund a previously committed loan. Investigations included researching alternative market-related reasons for the decline in the gear manufacturer's business as well as evidence of internal mismanagement on the part of the company's owners.

- <u>Other Matters</u>. Evaluated damages, causation issues, and liability issues in various lender liability cases involving the calling in of loans, the failure to fund previously committed loans, the failure to release collateral, and the misappropriation of loan payments. Cases involved firms in the wire and cable, drywall/construction, PVC piping, and auto dealership industries, among others.

Professional Negligence (Non-Securities / Non-Merger) Cases

- In an alleged professional negligence matter, a lender to distressed companies sought $40 million in damages from an auditor in connection with a $130 million credit facility extended to an HDTV company. The lender failed to collect when the borrower filed for bankruptcy. The auditor was alleged to have made negligent misrepresentations associated with the borrower's financial statements; the lender asserted it had relied upon the borrower's financial statements when entering into the credit facility. Performed economic causation and damages-related analyses. Identified the known or knowable risks associated with providing a credit facility to the borrower, including certain accounts receivable collection risks and market softness risks. Opined that it was the materialization of these known and knowable risks that caused the lender's claimed losses.
- Evaluated claimed damages against a major law firm for alleged professional negligence when filing a patent for the treatment of septic shock. Researched (among other things) the FDA approval process, associated statistics regarding the product category allegedly covered by Plaintiff's patent, and various industry projections regarding the category growth. Performed a discounted cash flow analysis, an incremental profitability analysis, a licensing analysis, and provided an alternative calculation of claimed damages.
- Evaluated Plaintiffs' claimed damages relating to an alleged failure by a law firm to properly file certain patent applications relating to a video processor recorder. Plaintiffs' business opportunities and licensing fees in the United States and Europe were allegedly lost due to the ensuing delays. Analyzed Plaintiffs' causation linkages to claimed damages, length of the claimed damages period, forecasted units sold, forecasted market share, forecasted costs of production, and claimed licensing rate.
- Evaluated claims by a Department of Insurance appointed liquidator that alleged the auditor of a bankrupt insurance company breached its fiduciary duty, resulting in a $100 million deficit on the insurance company's books. Conducted various analyses of a claims register database, including a comparison of indemnity payments and reserves per claim before and after the appointed liquidator took control of the liquidation process. Analyses demonstrated both the indemnity payments and reserves per claim were higher after the appointed liquidator took over the liquidation process, implying the liquidator over-paid and over-reserved claims.

Entertainment/Sports-Related Engagements

- Evaluated the claimed damages of a movie production company against a major home video rental company. At issue was the claim that the refusal of the home video rental company to commit to carry a particular movie in its stores caused the movie production company to suffer lost profits when its distributor then refused to release the movie theatrically. Demonstrated that Plaintiff's methodology for estimating lost box office revenues was inappropriate and failed to account for important determinants of movie attendance.
- Analyzed Plaintiffs' lost profits and reasonable royalty damages in a patent infringement matter relating to offset head lacrosse sticks. Analysis included an assessment of Plaintiffs' sales in the absence of the infringement, the distribution of the lost sales to the models that would have been sold in the absence of the infringement, and an incremental revenue and cost analysis. Also analyzed Plaintiffs' competitors, pricing patterns, productive capacity, and geographic coverage in support of the lost profits claim. Reasonable royalty damages were assessed using the *Georgia-Pacific* factors and a determination of important negotiating points in a hypothetical licensor / licensee negotiation.
- Estimated the diminished box office revenues suffered by a theatrical release due to the breach of a quick service restaurant promotional tie-in arrangement with a major pizza chain. Developed a database of recently released films and related film characteristics such as genre, rating, critics review, box office revenues, media spending, production budget, season of release, and talent. A regression model was then developed to quantify the relationship between media spending and box office revenue. An industry review of quick service restaurant promotional tie-in arrangements was also conducted.

- Evaluated Plaintiffs' claimed damages in a breach of contract matter involving the sale of certain minority interests in a National Basketball Association team. At issue were Plaintiffs' tag-along rights whereby limited partnership interests could be included in any sale by the general partner on the same terms and conditions. Damages were calculated as the difference between the formulaic value of the minority interests versus the market value of the minority interests when sold separately. Discounts for lack of control and reduced marketability were analyzed.
- Evaluated Plaintiff's damages claim relating to a NASCAR racing team sponsorship agreement. Plaintiff contended the Internet service provider sponsor interfered with the racing team's ability to sell advertising banners that were part of the sponsorship agreement. Analyses included assessing the appropriate methodology for valuing a NASCAR race team and assessing comparable transactions. Also analyzed the financial performance of the race team, the economic terms of the sponsorship agreement, and the risks associated with a barter arrangement.
- Estimated damages arising from a breach of contract claim between an electronic retailer and a local television station. At issue was the lost profits to the electronic retailer when the local television station discontinued broadcasting the electronic retailer's programming.
- Analyzed the market and evaluated damages on behalf of a television station denied access to a cable system. At issue was whether the cable operator was attempting to monopolize the market for local television advertising. Analysis included an estimation of the advertising revenues that would have been received by the local television station had it been allocated a channel on the cable system.
- Estimated damages arising from a breach of contract claim between a video-cassette manufacture/distributor and a theatrical motion picture producer/distributor. At issue was whether the motion picture distributor manipulated the theatrical release of certain titles distorting the films the video-cassette producer could distribute under the terms of the agreement.

Tax-Related Engagements

- Participated in an analysis of the impact on tax revenues to the State of Texas from a change in tax laws relating to pension fund managers. Helped demonstrate that changing the apportionment rule from "location in which the investment services were performed" to "residence of the investment beneficiaries" would not result in a negative fiscal impact.
- Served as consulting partner on an engagement estimating qualifying research and expenditure costs in response to certain expenses disallowed by the IRS. Analysis included developing a methodology to estimate qualifying hours and qualifying costs for groupings of employees with missing data.
- Analyzed whether the salaries paid to the owners/managers of a heavy and highway construction company were reasonable in a matter before the IRS. Areas investigated included the cyclical nature of the construction industry, the resulting cyclical nature of compensation paid to construction industry executives, and the 50^{th} and 75^{th} percentile salaries paid to various types of executives in the construction industry.
- Participated in an analysis of the tax benefit versus detriment to a Plaintiff as a result of ownership in certain partnership interests over the 1982-1998 time period. Also involved was an analysis of cumulative suspended tax losses, partnership income available for distribution, and changing tax rates over time.
- Quantified the net out-of-pocket cash position of investors who purchased limited partnership interests in nine real estate partnerships in an alleged non-disclosure matter. Also quantified the impact caused by changes in the Federal income tax laws. Supporting analyses included comparing the actual and projected performance of the partnerships taking into account restructurings, refinancings, and dissolutions.

<u>Personal Injury and Wrongful Death Cases</u>

- <u>General Overview (Personal Injury)</u>. Assessed damages and lost earnings in various personal injury cases involving movie production workers, management consultants, financial consultants, nurses, medical doctors, chiropractors, secretaries, truck drivers, airline stewardesses, mechanics, engineers, maintenance personnel, carpenters, masonry workers, crane operators, machine operators, actresses, military aircraft production workers, tankermen, teachers, film editors, portfolio managers, hair stylists, automobile assemblers, landscape architects, sole proprietors, and real estate agents (among others). In each case, issues investigated included an assessment of the projected undamaged income, damaged income, expected work life of the individual, and appropriate discount rate to use. Assistance to the attorney included the preparation of deposition questions, economic analyses, and a critique of the opposing economist's damage model.

- <u>General Overview (Wrongful Death)</u>. Developed numerous damage models in wrongful death cases. Issues investigated included the projection of lost earnings, the projected personal consumption expenditures of the decedent, and projected lost pension benefits. Professions of the decedents included various types of entrepreneurs (e.g., boat store owners, etc.), white-collar workers (e.g. attorneys, architects, etc.), and blue-collar workers (e.g., demolition contractors, grocery store clerks, etc.). Ages of the decedents ranged from adults to teenagers to children.

- Evaluated claims of damages submitted by the family members of 88 decedents from an airplane crash. Family members were seeking damages in state and federal courts against the airline and certain parts manufacturers. Most of the decedents resided and worked in Asian countries. Researched various data sources for information regarding social security benefits, interest rates, and the relevant economic statistics for workers in these countries. Evaluated four Plaintiff damages experts' reports and testimonies, summarized our evaluation of these damage models, and calculated alternative damages figures. Analysis included evaluating lost earnings, lost business value, lost non-salary benefits, lost retirement funds, and lost savings.

<u>Wrongful Termination Cases</u>

- Evaluated Plaintiff's alleged lost earnings and lost future earnings capacity in a matter against a major shipping company in which the Plaintiff claimed to have resigned his legal counsel position due to the Defendant's alleged criminal conduct and its refusal to conduct an independent investigation. Analyzed various employee benefits offered by the Defendant including but not limited to the salaries of similarly-situated employees, long term incentive plans, 401(k) plan, paid vacation, stock options, and retirement benefits. Also analyzed promotion criteria, similar benefits received by the Plaintiff at alternative employment, and the lower cost of living associated with the geographical location of the alternative employment.

- Evaluated Plaintiff's claimed economic harm in a wrongful termination / negligent misrepresentation matter. Plaintiff claimed that pre-termination certain representations by the company dissuaded him from resigning and selling his stock holdings, thereby causing economic harm from the subsequent decline in the company's stock price. Analysis included quantifying the salary, bonuses, pension benefits, and severance pay the Plaintiff received during the additional time spent with the company as compared to the stock price declines that formed the basis of Plaintiff's damages claim.

- Evaluated Plaintiff's loss of earnings claim in an alleged wrongful termination matter in the long distance telecommunications industry. Plaintiff was an independent representative with a "downline" working for a company using a multilevel marketing sales approach. Analyzed the Plaintiff's historical earnings, business expenses, and the earnings of Plaintiff's peers to evaluate Plaintiff's net earnings in the absence of the alleged wrongful termination.

- Evaluated Plaintiff's damage claim in a wrongful termination matter involving an insurance broker/branch manager. Evaluated Plaintiff's alleged damage period, earnings in the absence of the termination, fringe benefits, business expenses, and offsetting earnings. The sales patterns of the relevant insurance products at the state and national level were incorporated into the analysis. Also analyzed trends within the company with respect to branch manager positions.

- Evaluated the damages suffered by the manager of an over-the-counter trading department in an alleged wrongful termination action. Since the compensation of the manager was based on the profitability of the department, one issue investigated was the reason for the decline in the post-termination performance of the department.

- Other Matters. Assessed damages and lost earnings in other wrongful termination cases involving internal medicine specialists, neurosurgeons, anesthesiologists, entertainment company executives, brokers/traders, secretaries, accountants, attorneys, quality assurance managers, company presidents, real estate brokers, property managers, insurance brokers/managers, and military aircraft production workers. Areas investigated include many of the same items as described in personal injury cases.

Other Economic Engagements

- Conducted an economic analysis of historical and projected lost revenues due to SEC-related independence constraints for an information technology consulting entity. The analysis demonstrated that SEC rules requiring SEC registrants to disclose the amount of non-audit fees paid to its auditor, as well as constraints on the consulting entity's ability to perform outsourcing or managed application services for audit clients significantly impacted business growth relative to the market and its closest competitors. The analysis also demonstrated that certain revenue projections assuming independence relief were appropriate in light of market conditions and the independence constraints.

- Conducted an economic cost/benefit analysis of the SEC's proposed rule changes relating to non-audit services performed by auditing firms for audit clients. Analyses demonstrated that public accounting firms have an incentive to protect their brand name capital and that purchasers of non-audit services have an incentive to maintain investor confidence in the reliability of the audited financial statements.

- Performed an economic impact analysis on behalf of a major pipeline corporation seeking to gain regulatory approval for the construction of an oil pipeline in the Pacific Northwest. Evaluated the net economic impact of the project on employment, income, and consumer expenditures in the region. New employment opportunities resulting from construction and maintenance of the pipeline were compared to the potential lost jobs associated with the alternative means of transporting the petroleum.

- Participated in a major antitrust risk assessment exercise for a large industrial corporation. Work performed included evaluating the major litigation risks in the areas of monopolization, price discrimination, price fixing, illegal tying, and exclusive dealing. A detailed questionnaire designed to collect relevant economic data and identify potential risks was constructed and sent to the corporation's division managers.

- Evaluated revenue projections relating to an electronic toll collection system. The system was designed to recover lost toll revenue and other administrative fees from toll violators traveling along a consortium of tollways in New York, New Jersey, and Delaware. Analyzed four critical revenue drivers in the projections (number of transactions, violation rates, citation rates, and collections rates) and the potential variability of certain components of the projections by compiling comparative data through interviews with industry participants. Analysis was used in assisting lenders evaluating the economic viability of the project.

- In a bankruptcy matter, analyzed the expected rate of return that could be earned on a portfolio of assets. Included in the analysis was determining the investment portfolio of a prudent pension fund manager and the historical risk premiums earned on each category of assets in the portfolio. The assets were being held to meet future pension plan liabilities.

- Conducted an analysis of low-cost housing in Los Angeles County (CA) to determine whether sufficient housing was available to house the County's general relief recipient population. In separate engagements, conducted similar studies for San Bernardino County (CA) and Alameda County (CA). The Alameda County study also analyzed earned income incentives and food stamp allotments as a source of income in addition to the County's monthly general relief assistance. An affordable housing analysis was also conducted for the State of New Jersey's Department of Health relating to the state's child exclusion policy and AFDC recipients.
- Conducted an economic analysis on behalf of the California Public Utilities Commission. Tasks included incorporating elasticities into alternative rate design and pricing models, analyzing subsidies accruing to various residential consumer groups under alternative rate designs, and estimating the relative welfare loss associated with each alternative rate design.

Fraud/Criminal-Related Engagements

- Evaluated claimed damages in a suit brought by Plaintiff relators against a major information technology company for allegedly submitting false and fraudulent claims to the U.S. government under a Medicaid program providing health-cost reimbursements to school districts. Conducted various benchmarking analyses including analyzing a "claimed amount" versus "paid" pattern analysis and a reimbursement rate analysis across Defendant-administered school districts and non-Defendant-administered school districts. Also conducted a reimbursement rate benchmarking analysis associated with school districts before and after administration by the Defendant. Concluded there was no economic evidence of a systematic effort to defraud the U.S. government.
- Evaluated Plaintiff's claim of damages stemming from the alleged embezzlement of funds and falsification of income statements by a bank official relating to a mortgage lending division of a bank. Analysis identified errors made by the bank in specifying the length of the damage period and not properly accounting for accounts receivable collections made post-discovery of the alleged illegal acts.
- Analyzed skilled nursing facility nursing ratios in a criminal health care fraud matter relating to Medicare reimbursements. At issue was Defendant's ratio of skilled nursing costs to unskilled nursing costs alleged to be outside of governmental guidelines. Analyzed facility-level ratios by establishing peer groups of facilities based upon size of facility, number of participating beds, skilled utilization percentage, state location, average length of stay, and facilities with similar levels of acuteness.
- Estimated freight overcharge damages on behalf of a major multinational information technology services firm. Analysis required the utilization of a database of all freight shipments made over a five-year period, including incorporating subsequent credit memos, discounts, and dimensional weight charges. Analysis compared actual freight charges to rates charged by alternative carriers for shipments of identical ship method (e.g., ground, next day, two day), weight, and destination.
- Performed economic analysis relating to a health care criminal matter in which a group of doctors and a hospital were alleged to have conspired to receive remuneration in return for the referral of Medicare-eligible patients. Analyze included evaluating the savings from reduced admissions rates and from reduced average length of stays. Also analyzed the profitability of certain laboratory-related work.

TEACHING EXPERIENCE

Macroeconomic Principles and Intermediate Macroeconomics

Topics covered included unemployment/full employment, inflation/price stability, economic growth/gross domestic product, determination of national income, and monetary and fiscal policies.

Microeconomic Principles and Intermediate Price Theory

Topics covered included functioning of markets (demand and supply analysis), elasticities, theory of the firm (profit maximization), industry performance, allocation of resources, and government regulation.

Companies In Crisis

Topics covered included companies, markets, and industries in contemporary crisis situations from external or internal changes in the operating environment or significant conflict. Topics included case studies focusing on solutions for companies facing competitive issues, management issues, or litigation-related issues.

PUBLICATIONS

"An Economic Framework for Analyzing Covenants Not to Compete" (with Elaine Fleming and Steven Herscovici), Expert Witnesses, ABA Section of Litigation, Spring/Summer 2011, Vol. 7 No. 1.

"Financial Expert Witness Challenges and Exclusions: Results and Trends in Federal and State Cases Since Kumho Tire" (with Lawrence F. Ranallo), Accountants' Handbook, Tenth Edition 2004 Supplement, *forthcoming*, edited by D.R. Carmichael, New York: John Wiley & Jones, Inc., 2004.

"Accounting for Damages in Intellectual Property Litigation" (with Tony Samuel and John Davis), Building and Enforcing Intellectual Property Value – an International Guide for the Boardroom 2003.

"Challenges to the Admissibility of Financial Expert Witness Testimony" (with Lawrence F. Ranallo), Litigation Services Handbook, 2002 Supplement, edited by Roman L. Weil, Michael J. Wagner, and Peter B. Frank, 2A.1 – 2A.17, New York: John Wiley & Sons, Inc., 2001.

"Calculation of Lost Earnings" (with Carlyn R. Taylor and Randi L. Firus), Litigation Services Handbook, edited by Roman L. Weil, Michael J. Wagner, and Peter B. Frank, 11.1 – 11.16, New York: John Wiley & Sons, Inc., 2001.

"Preparing the Financial Expert or Economist" (with George G. Strong, Jr.), Witness Preparation, V. Hale Starr, 13.4 – 13.4.1, New York: Aspen Law & Business, A Division of Aspen Publishers, Inc., 1998.

"The Effect of Institutional Setting on Behavior in Public Enterprises: Irrigation Districts in the Western States" (with John M. McDowell), Arizona State Law Journal, Vol. 1982, No. 2, 453 – 496.

SELECTED CLIENTS OVER THE PAST FOUR YEARS

Selected clients over approximately the past four years include but are not limited to: Abbott Laboratories; Akamai Technologies, Inc.; America Online, Inc.; Apple Inc; Autobytel Inc.; Blackboard Inc.; Blackstone Group; Blockbuster Inc.; Bioengineered Supplements & Nutrition, Inc.; CDX Gas; Chrysler; Cigna; Covidien; Crane Co.; Cummins-Allison Corp.; DirecTV, Inc.; Electronic Data Systems; Ernst & Young LLP; Google; Gorlick Distribution Centers; Haggar; Halliburton; Idearc; Juniper; LG Electronics, Inc.; Lutron Electronics Co. Inc.; McDonald's Corporation; Medtronic, Inc.; Microsoft Corporation; National Dairy Holdings, L.P.; New York Times, Company; Nike, Inc.; Nintendo; Nortel Networks Inc.; Research in Motion; Rohm Co. Ltd.; Samsung; Shure, Inc.; SIGA Technologies; Snapple Beverage Corporation; St. Jude Medical, Inc.; Stolt Nielson; TiVo Inc; Tyco Heathcare; UBS; United States Surgical Corporation; Verizon; Versata (f/n/a Trilogy); Volkswagen Group of America, Inc.; Waste Management; Wachovia Corporation; Wells Fargo & Company; Wendy's; Wyndham International, Inc.; Yahoo!