# EXHIBIT 4

**UNITED STATES DISTRICT COURT**
**EASTERN DISTRICT OF VIRGINIA**
**NORFOLK DIVISION**

| | | |
|---|---|---|
| I/P ENGINE, INC., | ) | |
| Plaintiff, | ) | |
| v. | ) | Civ. Action No. 2:11-cv-512 |
| AOL, INC. et al., | ) | |
| Defendants. | ) | |

# EXPERT REPORT OF OPHIR FRIEDER ON INFRINGEMENT OF U.S. PATENT NOS. 6,314,420 AND 6,775,664

**CONFIDENTIAL OUTSIDE COUNSEL ONLY**

## Table of Contents

## I. INTRODUCTION

1. I have been retained by Dickstein Shapiro LLP, attorneys for I/P Engine, Inc. ("I/P Engine") in the above-captioned case, which I understand to be a patent infringement case involving U.S. Patent Nos. 6,314,420 ("the '420 patent") and U.S. Patent No. 6,775,664 ("the '664 patent").

2. I am a professor in the Department of Computer Science at Georgetown University.

3. I have been asked to evaluate in this report whether the search advertising systems made, used, sold, offered for sale, or imported by Google Inc. ("Google"), AOL Inc. ("AOL"), IAC Search & Media, Inc. ("IAC"), Gannett Company, Inc. ("Gannett"), and Target Corporation ("Target") (collectively "Defendants") or their publisher/customers include every element of, or performed every step of, 14 patent claims asserted by I/P Engine. In other words, I was asked to assess whether Defendants have directly or indirectly infringed the 14 asserted claims from the I/P Engine patents.

4. I was asked to evaluate the following 14 claims:

- U.S. Patent No. 6,314,420, claims 10, 14, 15, 25, 27 and 28;
- U.S. Patent No. 6,775,664, claims 1, 5, 6, 21, 22, 26, 28 and 38.

5. I have also been asked to evaluate in certain instances whether, in the alternative, the systems and activities of Defendants include the equivalent of the elements or steps of the 14 asserted claims that I was asked to consider. In other words, with respect to certain elements alleged by Defendants to not be met by their systems and activities, I was asked to consider

whether, assuming that element was not met literally, Defendants' systems or activities nevertheless include or perform substantially the same function, in substantially the same way, to achieve substantially the same result as those elements of the 14 claims, or are otherwise insubstantially different from those elements of the 14 claims.

6. I expect to testify at trial to the opinions set forth in this report, and the bases for those opinions. In addition, I expect to testify in rebuttal to the positions taken by the Defendants with regard to infringement or related concepts. Moreover, I intend to use demonstrative exhibits at trial based on the matters discussed and evidence referenced in this report to explain to the jury and the Court the opinions and discussions set out in this report.

7. I reserve the right to revise, amend, or supplement this report and my opinions set forth in this report based on evidence or information, including documents or deposition testimony of Defendants or third parties, that was not available for review at the time I drafted this report. I also intend to continue my review of the materials and documents listed in Exhibit 1 attached to this report that may further inform my opinions in this report.

8. I understand that, on July 23, 2012, Defendants supplemented their non-infringement positions and added a number of new positions that had never been previously disclosed. I have not had an opportunity to review those supplemental responses or those new positions. I am informed by counsel that the court may preclude Defendants from relying on those new theories. In the event that Defendants are permitted to rely upon those newly asserted theories, then I expressly reserve the right to amend this report.

## II. BACKGROUND

9. I hold a Bachelor of Science in Computer and Communication Sciences, a Master of Science in Computer Science and Engineering, and a Ph.D. in Computer Science and

Engineering from the University of Michigan. From 1987-1990 I was a member of the technical staff at the Applied Research Area of Bell Communications Research. From 1990-1998 I was a professor in the Department of Computer Science at George Mason University; I was on leave from 1996-1998. From 1996-1998, I was a professor in the Division of Electrical and Computer Science and Engineering at the Florida Institute of Technology. From 1998-2009 I was a professor and director of the Information Retrieval Laboratory in the Department of Computer Science at the Illinois Institute of Technology. Since 2010, I have been the Robert L. McDevitt, K.S.G., K.C.H.S. and Catherine H. McDevitt, L.C.H.S. Professor in Computer Science and Information Processing & Chair of the Department of Computer Science at Georgetown University. I am also a Professor in the Department of Biostatistics, Bioinformatics, and Biomathematics in the Georgetown University Medical Center.

10. I teach and consult in many different aspects of computer science and engineering, including search, database and communications technology. My particular areas of expertise include information retrieval. A true and accurate copy of my curriculum vitae, including a listing of testimony that I have provided in the last five years, is attached hereto as Exhibit 2.

11. As a result of my education and professional experience, I have extensive knowledge of search, database and communications technologies, including information retrieval systems.

12. I have worked in the area of search technologies for over twenty years. I have extensive experience in the design and development of small and large scale software systems. I have been involved in the specification, development, integration and testing of computer systems with a wide range of requirements, sizes and types. These have included, by way of

example, custom hardware and software for search technologies. As a result, I have extensive knowledge and practical experience designing, implementing and analyzing computer systems using a wide variety of hardware, operating systems, programming languages, etc.

13. I am being compensated at the rate of $700 per hour for my work on this matter. My fee is not contingent on the outcome of this litigation or upon my reaching any particular conclusions or opinions.

## III. INFORMATION CONSIDERED IN FORMING MY OPINIONS

14. I understand that counsel for I/P Engine has made all material produced in this case available to me. I also understand that discovery is ongoing, and reserve the right to supplement or amend this report based on discovery that occurs after the date of this report.

15. Attached as Exhibit 1 is a listing of the information I have considered in forming my opinions.

## IV. APPLICABLE LEGAL PRINCIPLES

16. I have been informed of several principles concerning patent infringement and non-infringement, which I used in arriving at my conclusions.

17. I understand that a patent may be infringed either directly or indirectly.

18. I understand that direct infringement occurs whenever a patented invention is made, used, sold, offered for sale or imported without the permission of the patent owner.

19. I understand that indirect infringement takes two forms. A form of indirect infringement known as "inducement" may be found where a party induces or encourages another to take activities which directly infringe a patent.

20. I understand that a second form of indirect infringement, known as "contributory" infringement may be found where a party sells, offers to sell, or imports a component of a patented invention, knowing that the component is especially adapted for use in infringement, and that the component is not a staple article or commodity of commerce suitable for substantial noninfringing use. It is my understanding that assessment of whether an accused product or process infringes a patent claim of a U.S. patent is a two-step process. First, the language of the patent claims must be construed by the court. Second, the claims as construed are applied to the accused product or process to determine whether the accused product or process meets each and every element of the claim as construed by the court.

21. In this case, I understand that the first step of the process is complete, as the Court has already construed certain terms in its Memorandum Opinion & Order ("Opinion"), dated June 15, 2012, attached hereto as Exhibit 3. For convenience, attached hereto as Exhibit 4 is a table that summarizes the Court's constructions. In my report, I have applied the Court's construction. I have then performed the second part of the infringement determination by comparing the accused system to the claims as construed by the Court to determine whether the accused system contains each and every limitation of the asserted claims.

22. It is my understanding that the patentee has the burden of proving infringement by a preponderance of the evidence. I understand this standard to require that the patentee present evidence that as a whole shows that the fact sought to be proved is more probable than not.

23. It is also my understanding that patents are presumed valid.

24. It is my understanding that there are two types of infringement: literal infringement and infringement under the doctrine of equivalents.

25. For literal infringement, I understand that each accused product or process must contain each and every element of the asserted claims. However, if one or more claim limitations do not find literal correspondence in an accused system, I understand that infringement might still be found under the doctrine of equivalents if each limitation of the claim is met in the accused system either literally or equivalently.

26. For infringement under the doctrine of equivalents, I understand that each accused product or process must contain an element equivalent to each and every element of the asserted claims. I understand that infringement under the doctrine of equivalents may be found when the difference between the element in the accused system and the claimed element is insubstantial. I understand that the Court can use the function-way-result test to determine the extent of any difference. Under the function-way-result test, I understand that each accused product must contain an element which performs substantially the same function in substantially the same way to achieve substantially the same result as the claimed element. I understand that, under the doctrine of prosecution history estoppel, a patentee may not use the doctrine of equivalents to recapture any claim scope that was disclaimed or given up during prosecution.

## V. LEVEL OF ORDINARY SKILL IN THE ART

27. I have read the '420 and '664 patents from the perspective of a person of ordinary skill in the art (POSITA), which means the level of skill of a POSITA at the time of the filing of each patent (or the effective filing date of the applications that led to each of the patents). It is my opinion that a POSITA in the art of which the '420 and '664 patents are a part of would have a bachelor's degree or comparable degree in a field related to computer software, such as computer science, and a minimum of 3 years of software developer work experience.

## VI. THE PATENTS-IN-SUIT

28. I/P Engine initiated litigation against Defendants on September 15, 2011 in the U.S. District Court for the Eastern District of Virginia, asserting patent infringement of the '420 and '664 patents.

### A. The '420 Patent

29. The '420 patent is entitled "Collaborative/Adaptive Search Engine" and issued on November 6, 2001. According to the face of the patent, the application which matured into the '420 patent was filed on December 3, 1998. Accordingly, I understand that this patent should be read from the perspective of a POSITA in the 1998 time frame, which is the period of the effective filing date of this patent.

30. In the present litigation, claims 10, 14, 15, 25, 27, and 28 of the '420 patent are asserted.

31. An embodiment of the invention is described by the '420 patent with reference to FIG. 9 of the '420 patent. In this embodiment, when a user enters a query into the information processing system, a scanning system scans a network (for example, the internet, an enterprise-wide network, or an intranet) to collect informons.[1] A search return processor receives the informons and combines content-based data about the informons (received from a content based filter structure) with collaborative feedback data about the informons (received from users through a feedback processor) in the demand search mode.[2] By combining these two sets of

[1] '420 Patent at 25:6-18. The process of collecting informons may also be performed in advance of the demand search by a user. *Id.* at 25:45-52. The system can include a database, or a memory system, where an index of previously collected informons are stored so that the search engine system can retrieve the informons when a search is requested. *Id.*

[2] *Id.* at 25:57-61.

data, the search return processor calculates a rating predictor for each informon, and the rating predictor is used in filtering each informon for relevance to the query.[3] Using a combination of content-based data and collaborative feedback data in filtering operations of a search engine produces significantly improved search results.[4]

### B. The '664 Patent

32. The '664 patent is a continuation of the '420 patent and issued on August 10, 2004. I understand that the '664 patent should be assessed from the perspective of a POSITA in the 1998 time frame, which is the period of the effective filing date of the '420 patent from which this patent claims priority.

33. In the present litigation, claims 1, 5, 6, 21, 22, 26, 28 and 38 of the '664 patent are asserted.

34. FIG. 9 of the '664 patent illustrates an embodiment, and the '664 patent includes the same description and figure as FIG. 9 of the '420 patent, described above.

## VII. OVERVIEW OF MY OPINIONS REGARDING INFRINGEMENT

35. Based on my analysis, as discussed below, my opinion is that Google's AdWords, AdSense for Search, and AdSense for Mobile Search systems infringed and continue to infringe each of the 14 asserted claims of the '420 and '664 patents from 2004 through the present. In addition, it is my opinion that AOL has infringed and continues to infringe each of the 14 asserted claims of the '420 and '664 patents during the period from 2004 through present via its use and ongoing promotion of Google's AdSense for Search systems (either rebranded, such as

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[3] *Id.* at 14:40-67.

[4] *Id.* at 2:20-26.

through the use of AOL Search Marketplace, or otherwise), IAC has infringed and continues to infringe each of the 14 asserted claims of the '420 and '664 patents from 2008 through present via its use and ongoing promotion of Google's AdSense for Search systems, Target has infringed and continues to infringe each of the 14 asserted claims of the '420 and '664 patents from 2009 through present via its use and ongoing promotion of Google's AdSense for Search systems, and Gannett has infringed and continues to infringe each of the 14 asserted claims of the '420 and '664 patents from 2009 through present via its use and ongoing promotion of Google's AdSense for Search systems.

## VIII. ACCUSED SYSTEMS

36. If asked, I may also testify generally about the history of the search industry.

37. I provide below a summary of my understanding of how the accused systems operate. I reserve my right to supplement this summary based on additional information obtained during the course of discovery in this litigation.

Google Systems

38. I/P Engine accuses Google's AdWords, AdSense for Search, and AdSense for Mobile Search systems of infringing the '420 and '664 patents.

39. In October 2000, Google launched the Google AdWords system.[5] This was a "self-service ad program" that provided "online activation with a credit card, keyword targeting and performance feedback."[6] In the version of the AdWords system launched in 2000,

[5] IPE0022806-807.

[6] IPE0022807.

advertisers paid Google each time an advertisement was displayed on a search results page.[7] Advertisers paid a set cost per thousand impressions (CPM) to Google.[8]

40. In February 2002, Google released an upgrade to the AdWords system referred to as AdWords Select.[9] This upgrade included "a number of new enhancements, including cost-per-click (CPC)-based pricing."[10] This pricing "enables advertisers to pay only when their ads are clicked on by users."[11] The AdWords Select upgrade also introduced a new ranking methodology. In the new system, ranking on the www.google.com website was determined by "a combination of ad performance (click-thru rate) and how much an advertiser agrees to pay per click."[12]

41. In 2004, Google released another upgrade to the AdWords system. Google introduced a system referred to internally as the Smart Ads Selection System ("SmartASS") (referred to herein as "SmartAds").[13] [redacted]

[7] IPE0022841-843; *see also* G-IPE-0009729.

[8] IPE0022843.

[9] IPE0022808; IPE0022845-846.

[10] IPE0022845.

[11] *Id.*

[12] *Id.*

[13] *See, e.g.*, G-IPE-0476688-89; G-IPE-0518677-96.

[14] G-IPE-223584; G-IPE-0224366.

[15] G-IPE-0224358.

[16] Deposition of Jonathan Glen Alferness for Google Inc., dated June 21, 2012 ("Alferness Deposition") at 13:17-17:2; 53:16-20; 101:17-108:23.

Google first publicized "Quality Score" in July 2005.[17] In 2008, AdWords updated Quality Score so that it would be computed at the time of each search query.[18]

42. Google introduced AdSense for Search in 2002.[19] AdSense for Search is a system that enables third party website owners to place advertisements provided by the AdWords system on their own search results pages.[20] When users click on the advertisements, Google and the website owners share the revenue received from the advertisers.[21]

43. Google introduced AdSense for Mobile Search in September 2007.[22] AdSense for Mobile Search is a system that enables mobile website owners to place advertisements provided by the AdWords system on their own mobile website search results pages.[23] When users click on the advertisements, Google and the mobile website owners share the revenue received from the advertisers.[24]

44. It is my understanding that AdSense for Mobile Search operates in the same manner as AdSense for Search. An advertiser may specify that their ads be run on a mobile device through AdSense for Mobile Search rather than through AdSense for Search.[25] The back ends of the systems are similar in that the ads are provided to the user from Google in the same

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[17] *See* IPE0022848-850; Alferness Deposition at 53:16-20.

[18] IPE0022851.

[19] G-IPE-0865313.

[20] IPE0022861-863.

[21] G-IPE-0796947.

[22] IPE0022866-867.

[23] *Id.*

[24] *Id.*

[25] *See* Alferness Deposition at 144:17-145:10.

[redacted]

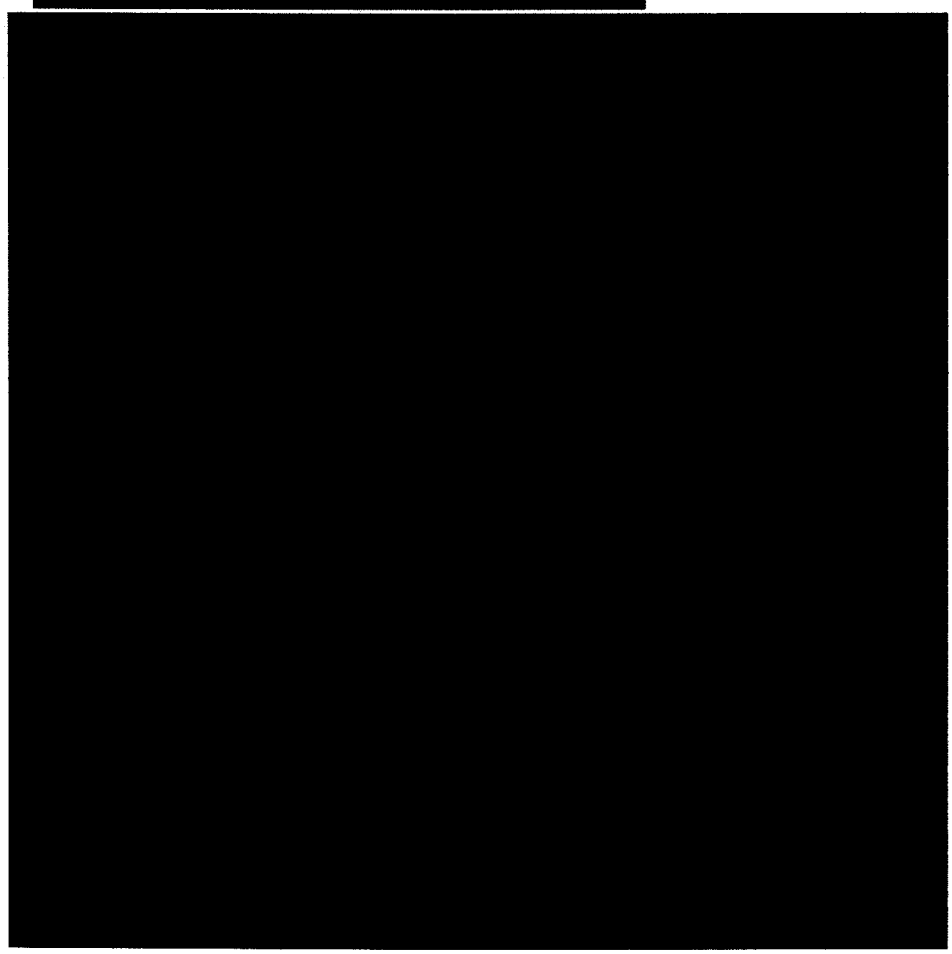


**Figure 1.**

[redacted]

[26] *See* Alferness Deposition at 145:11-22; 213:20-214:14.

[27] *See id.* at 145:11-22; 213:20-216:6.

47. [redacted]

48. [redacted]

[28] *See* G-IPE-0630637 ("Life of a Query"); Alferness Deposition at 189:6-190:21.

[29] G-IPE-0223567; G-IPE-0630637.

[30] G-IPE-0223567; G-IPE-0630638.

[31] Alferness Deposition at 55:15-56:10; 77:12-22; G-IPE-0008856-871.

[32] IPE0022870-874; AOL-01202803-804; G-IPE-0630638.

[33] *See, e.g.,* G-IPE-0223566-573.

[redacted]

49. Google has used the term Quality Score to communicate aspects of pCTR to the public, including its customers.[35] Google has described Quality Score as being calculated based on factors including "the historical clickthrough rate (CTR) of the keyword and the matched ad on Google" and "the relevance of the keyword and the matched ad to the search query."[36] Quality Score is described as being used to determine eligibility for the ad auction and to determine ad position.[37] [redacted]

### A. SmartAds Computes Predicted Click-Through Rates (pCTR)

50. [redacted]

[34] *Id.*

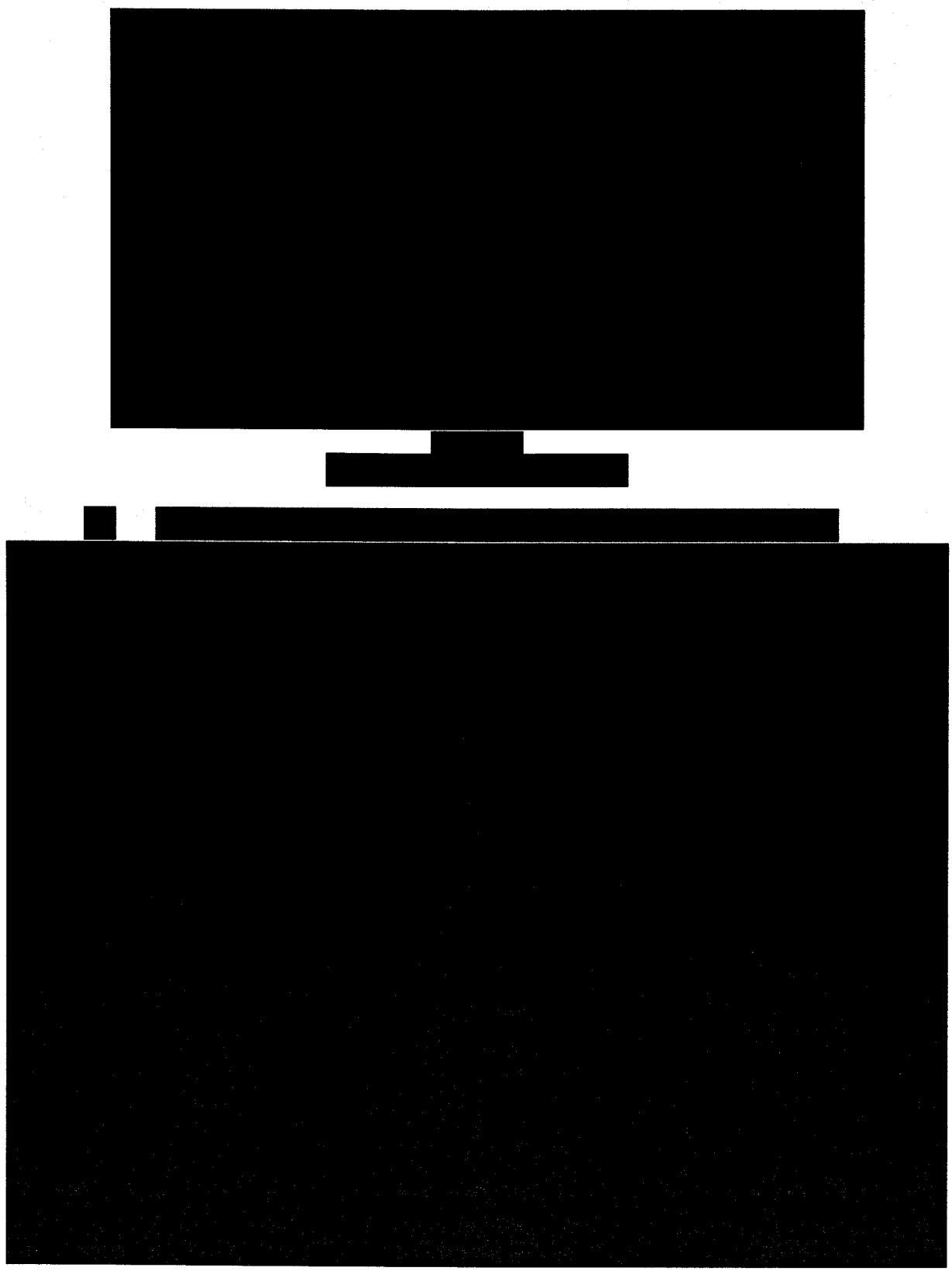
[35] Alferness Deposition at 13:17-17:2; 101:17-108:23.

[36] G-IPE-0337659.

[37] IPE0022875-877.

[38] *Id.*; *see also* G-IPE-0264611; Alferness Deposition at 31:9-32:5; G-IPE-0261638-761.

[39] *See, e.g.*, G-IPE-0476688-89; G-IPE-0518677-96, G-IPE-0224358; Alferness Deposition at 53:15-20.



52. [redacted]

[40] G-IPE-0223575.

[41] *Id.*

[42] *Id.*

[43] *Id.*

[44] G-IPE-0223576-585.

[45] *Id.*

[46] *Id.*

54. [redacted]

**B.** [redacted]

[47] *Id.*; *see also* Alferness Deposition at 199:21-200:20.

[48] Alferness Deposition at 101:17-108:23; 110:2-118:21; G-IPE-0241639-42; IPE0000061-62.

[49] G-IPE-0223567, 570-573; *see also* G-IPE-0630639 ("Disabling Phase 1"); Alferness Deposition at 55:15-56-4.

[50] G-IPE-0223580.

[51] G-IPE-0223571.

[redacted]

[52] *Id.*

[53] Alferness Deposition at 72:10-75:12.

[54] Alferness Deposition at 75:13-76:5.

[55] Alferness Deposition at 64:19-65:3; 74:12-14.

[56] G-IPE-0223567-569; see also G-IPE-0630641 ("Disabling Phase 2").

[57] *Id.*; G-IPE-0223581.

[58] G-IPE-0223568; G-IPE-0223581-582.

[59] G-IPE-0223568.

[redacted]

[60] *Id.*

[61] *Id.*

[62] G-IPE-0223566-69.

[63] *Id.*

[64] G-IPE-0223568, 581-582.

[65] *Id.*

[66] G-IPE-0694062-63; Alferness Deposition at 28:16-29:5; 71:2-10.

[67] Alferness Deposition at 31:6-8.

### F. AOL Systems

61. AOL has been using AdSense for Search continuously since 2002.[68] In 2007, AOL launched the AOL Search Marketplace, a "white-label" version of Google AdWords.[69] AOL currently uses both Google's AdSense for Search and AOL Search Marketplace to display advertisements on the AOL.com search results page and search results pages of other AOL properties.[70]

62. [redacted]

[68] G-IPE-0868340-343; Deposition of Robert Hickernell for AOL ("Hickernell Deposition"), dated July 10, 2012 at 21:7-13.

[69] IPE0022878-879; Hickernell Deposition, at 18:11-22.

[70] Hickernell Deposition at 82:18-83:3.

[71] *Id.* at 18:15-22.

[72] G-IPE-0868340-343.

[redacted]

### G. IAC, Target, and Gannett's Use of AdSense for Search

64. IAC has been using AdSense for Search continuously since 2008.[75] Target has been using AdSense for Search continuously since 2009.[76] Gannett has been using AdSense for Search continuously since 2009.[77]

65. When a non-Google publisher, such as Target, Gannett, IAC or AOL, uses AdSense for Search to display advertisements from Google, "Google provides a JavaScript file" that is run on the publisher's website.[78] When a user enters a search query into the publisher's website, the query is entered "as a variable to the function" of the JavaScript.[79] The JavaScript makes a call to Google and the query is passed to Google.[80]

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[73] Alferness Deposition at 26:20-27:13; 211:22-214-18.

[74] *Id.*

[75] Deposition of Kevin Patrick Cotter for IAC, dated June 20, 2012 at 24:18-56:19; G-IPE-0868541-619; G-IPE-0868528; G-IPE-0868526; G-IPE-0868521; G-IPE-0868506.

[76] TAR-IPE-0000206-11; TAR-IPE-0000166-85; TAR-IPE-0000114-5; TAR-IPE-0000056-7.

[77] Deposition of Stephen Michael Kurtz for Gannett, dated June 26, 2012 ("Kurtz Deposition") at 28:17-20; 34:15-20; GAN-IPE-0000001-23; GAN-IPE-0000024; GAN-IPE-0000025.

[78] *See* Christopherson Deposition at 36:25-37:8; *see also* Kurtz Deposition at 39:22-40:13; Deposition of Celia Ann Denery for IAC, dated June 20, 2012 ("Denery Deposition") at 33:2-19.

[79] *See* Christopherson Deposition at 37:4-8; *see also* Kurtz Deposition at 40:17-22; Denery Deposition at 33:2-19.

[80] *See* Christopherson Deposition at 37:3-13; *see also* Kurtz Deposition at 40:4-9, 17-22; Denery Deposition at 33:10-19.

66. In response to the "JavaScript variable," Google responds by sending advertisements back to the publisher.[81] The received advertisements are displayed in the order that they are received from Google.[82] The publishers do not know, nor does Google provide them any information about, what happens between when the query is sent to Google and when the advertisements are returned.[83]

67. I understand that IAC, Target, and Gannett's use of AdSense for Search utilizes filtering steps that are the same as those described above with reference to AdWords in all relevant respects.[84] IAC, Target, and Gannett's use of AdSense for Search uses SmartAds models that train on data from the partner websites that the AdSense for Search advertisements appear on.[85]

## IX. INFRINGEMENT ANALYSIS

68. I have examined the 14 asserted claims of the '420 and '664 patents and compared them with Google's AdWords, AdSense for Search, and AdSense for Mobile Search and AOL's Search Marketplace systems (collectively "Defendants' systems").

69. Based upon my examination of information relating to Defendants' systems it is my opinion that the systems literally infringe the 14 asserted claims of the '420 and '664 patents because they include each and every limitation of those claims.

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[81] *See* Christopherson Deposition at 37:9-18; *see also* Kurtz Deposition at 41:19-42:4; Denery Deposition at 34:11-16.

[82] *See* Christopherson Deposition at 71:10-14; *see also* Kurtz Deposition at 42:9-43:1; Denery at 34:19-24.

[83] *See* Christopherson Deposition at 37:19-25; *see also* Kurtz Deposition at 43:8-44:7; Denery Deposition at 34:25-35:6.

[84] *See* Alferness Deposition at 26:20-17:13; 108:24-110:25; 200:21-201:3; 211:22-213:10.

[85] *Id.*

70. The accompanying charts (incorporated as Exhibit 5), which contain a comparison of the 14 asserted claims of the '420 and '664 patents with the above-described Defendants' systems, set forth the bases of my opinion that those systems infringe those claims literally.[86] If any claim limitation was for some reason found not to be literally present, in my opinion, and as expressed in the accompanying charts, Defendants' systems would still infringe these 14 claims of the '420 and '664 patents under the doctrine of equivalents because any differences between those systems and the limitations of those claims would be considered insubstantial by one of ordinary skill in the art.

71. [redacted]

[86] As described above, it is my understanding that the systems are interrelated systems that, for purposes of my report, have no significant differences related to the infringement issues in this case. Accordingly, in the Exhibit 5 chart, I provide an infringement analysis that is applicable to all systems and refer to the systems collectively as "AdWords."

[87] As noted above, pCTR is sometimes referred to as Quality Score.

[88] Alferness Deposition at 131:9-17; 258:25-271:16.

[89] *See, e.g.*, G-IPE-0338613; G-IPE-0106274; G-IPE-0224368; G-IPE-224358; G-IPE-0407258; G-IPE-0171129; G-IPE-0171697; G-IPE-0223579.

72. Defendants also actively induced and contributed to the infringement of the asserted claims by their end users, customers, and publishers, who obtained beneficial use of those systems (used alone or together with other components with which the systems were specifically designed to operate). Defendants induced their end users, customers, and publishers, to infringe by, for example, instructing their customers to use the systems and by supplying the components of those systems for their customers to use. My understanding is that Defendants had knowledge of the patents-in-suit at least as of the date of the filing of this lawsuit, September 15, 2011.

## X. RESPONSE TO DEFENDANTS' NON-INFRINGEMENT POSITIONS

73. I have reviewed Defendants' non-infringement contentions described in their respective responses to I/P Engine's Interrogatory Nos. 6 and 7 dated March 30, 2012, and I disagree with their conclusion that they do not infringe the asserted claims. As mentioned above, I have not had an opportunity to review the supplemental responses in the responses dated July 23, 2012, and I expressly reserve the right to amend this report to address those responses.

74. Defendants contend that the accused systems do not involve "scanning a network." The Court has construed this phrase to mean "looking for or examining items in a network." The AdWords system looks for or examines items in a network when it performs targeting to find advertisements relevant to the query.[90] As explained above, and in the attached claim charts, the advertisements are stored on multiple computers on a network, and the targeting step involves looking for and examining the items on this network.

[90] *See, e.g.*, G-IPE-0223567; G-IPE-0630638.

75. Additionally, AdWords conducts a crawl of the Internet to collect additional information about the landing pages of advertisements.[91] This is an additional instance of "looking for or examining items in a network." While Defendants suggest that this crawl does not meet the "scanning a network" limitation of claims 10 and 25 because it does not occur at the time of query, their contention is not persuasive because there is no requirement in the claims that the scan of the network must occur after a query is received.

76. [redacted]

77. Defendants contend that AdWords does not receive "collaborative" feedback data. It is my understanding that this contention is based on a construction of "collaborative feedback" that is inconsistent with the Court's construction ("data from system users regarding what informons such users found to be relevant"). As described above and in Exhibit 5, the click-

[91] *See* IPE0000066 ("[t]he AdWords system retrieves advertiser landing pages to help us better understand the relevance and quality of your AdWords ads as a whole. . . . To fully understand the quality of your specified page, the system may follow other links on the page."); *see also* G-IPE-0223570; G-IPE-0171697; G-IPE-0820298-99; G-IPE-0591639-40; G-IPE-0247648; G-IPE-0491639; G-IPE-0605010; G-IPE-0191539.

through data received and logged by Google [redacted] is information on which advertisements users found to be relevant to their queries.

78. Defendants contend that the claims require that "the filter system" and "the feedback system" be "different systems." Nothing in the claims require that these be "different systems" and my understanding is that the Court declined to adopt Defendants' proposed construction that these must be "different systems." Moreover, there are different systems or software modules within AdWords that include the features recited in the claim, as described above and in Exhibit 5.

79. I reserve the right to supplement my analysis if Defendants update or clarify their non-infringement positions.

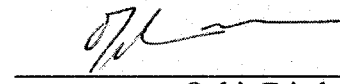
## XI. RELATED PATENTS

80. The '361 patent is entitled "System and Method for Influencing a Position on a Search Result List Generated by a Computer Network Search Engine." It was filed on May 28, 1999, and it issued on July 31, 2001. I have reviewed the '361 patent to determine its general field of use, the stated goals of the patent, and the technologies involved to achieve those goals. The '361 patent generally relates to the selection and positioning of items (such as advertisements) on a search results page in response to a search query. While the '361 patent has differences from the patents-in-suit, it is my opinion that the '361 patent and the patents-in-suit generally relate to similar subject matter. [redacted]

[redacted]

[redacted]

81. Executed on this 25th day of July, 2012, in Washington, DC.

By 
Ophir Frieder

## CERTIFICATE OF SERVICE

I hereby certify that on this 25th day of July, 2012, the foregoing **EXPERT REPORT OF OPHIR FRIEDER ON INFRINGEMENT OF U.S. PATENT NOS. 6,314,420 AND 6,775,664** was served via email, on the following:

Stephen Edward Noona
Kaufman & Canoles, P.C.
150 W Main St
Suite 2100
Norfolk, VA 23510
senoona@kaufcan.com

David Bilsker
David Perlson
Quinn Emanuel Urquhart & Sullivan LLP
50 California Street, 22nd Floor
San Francisco, CA 94111
davidbilsker@quinnemanuel.com
davidperlson@quinnemanuel.com

Robert L. Burns
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP
Two Freedom Square
11955 Freedom Drive
Reston, VA 20190
robert.burns@finnegan.com

Cortney S. Alexander
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP
3500 SunTrust Plaza
303 Peachtree Street, NE
Atlanta, GA 94111
cortney.alexander@finnegan.com

/s/ Armands Chagnon
Senior Paralegal