

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMAZON.COM, INC., AMAZON WEB SERVICES, INC., and
AMAZON.COM SERVICES LLC,

Petitioner,

v.

ALMONDNET, INC.,

Patent Owner.

U.S. Patent No. 8,494,904

DECLARATION OF HENRY HOUH

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I, Henry Houh, Ph.D., declare as follows:

I. INTRODUCTION

1. I have been asked by the parties requesting this review, Amazon.com, Inc., Amazon Web Services, Inc., and Amazon.com Services LLC (“Petitioner”) to provide my expert opinions in support of the petition for Inter Partes review of U.S. Patent No. 8,494,904 (the “’904 patent” or “challenged patent”) challenging the patentability of claims 1, 3-11, 13-21, and 23-30 (the “challenged claims”).

2. In summary, it is my opinion that the challenged claims are disclosed and rendered obvious by the prior art. I set forth below my detailed opinions.

II. BACKGROUND AND QUALIFICATIONS

3. My professional career spans more than 25 years. During these years I gained extensive experience with web sites, Internet advertising, networking, communications systems, distributed systems and protocols, and streaming audio/video communications.

4. I am currently employed by Houh Consulting Inc. as an independent technical consultant. Until October 2022, I also worked as the co-founder of Einstein’s Workshop, a company that provides supplemental science, technology, engineering, and mathematics (“STEM”) education to children of all ages. I also co-founded and serve on the board of BlocksCAD, Inc., which provides educational computer-aided design software used around the world.

5. I have multiple undergraduate and graduate degrees from the Massachusetts Institute of Technology (“MIT”). I have a Bachelor of Science Degree in Electrical Engineering and Computer Science from MIT which I received in June 1989. I also have a Bachelor of Science Degree in Physics from MIT which I received in February 1990. I have a Master of Science Degree in Electrical Engineering and Computer Science from MIT which I received in February 1991. I have a PhD in Electrical Engineering and Computer Science from MIT which I received in February 1998. My thesis was directed to “Designing Networks for Tomorrow’s Traffic,” and was supervised by Professors David Tennenhouse and John Guttag.

6. I have worked with web technology almost continuously since shortly after the World Wide Web (“the web”) was created. In graduate school, I joined the Advanced Network Architecture (“ANA”) group at the Laboratory for Computer Science (“LCS”) at MIT, then headed by Prof. Tennenhouse and senior research scientist David Clark. Dr. Clark is generally considered to be one of the fathers of the Internet Protocol, having acted as chief protocol architect for the development of the Internet.

7. As part of my doctoral research at MIT from 1991-1998, I worked as a research assistant in the Telemedia Network Systems (“TNS”) group at the LCS. TNS’s research activities focused on high-speed networking and the types of

applications that require increased network bandwidth and computing power. The TNS group built a high-speed gigabit network and applications which ran over the network, such as applications for remote video capture, processing, and display on computer terminals. I designed the core networking hardware and software, including the high-speed data links and the device drivers for the network interface cards.

8. I set up the TNS group's web server around late 1993, which at the time was one of the first several hundred web servers in existence. I then created content rich web pages for the group and my research activities. Eventually, I, together with others with whom I worked, added live video demonstrations to TNS's web site.

9. I authored or co-authored at least twelve papers and conference presentations on my TNS group research. I also co-edited TNS's final report on its gigabit networking research effort. Some of my papers about web site development were presented at the first World-Wide Web conference held in 1994 at CERN in Geneva, Switzerland. CERN is the birthplace of the Web, and the conference was chaired by Tim Berners-Lee, the inventor of the World-Wide Web. When Tim Berners-Lee formed the World Wide Web Consortium at the MIT LCS to manage the progression of web protocols and standards, I assisted him in obtaining the consortium's domain names and setting up the consortium's web server.

10. I gained extensive experience creating web pages and setting up commercial websites in 1993-1997 and during this time I followed the evolution of the web very closely. I started and maintained the “Commercial Sites Index,” the first listing of all the companies on the web. I later sold this list to OpenMarket, then a leader in web and eCommerce servers. In 1994, I co-founded Agora Technology Group, a web-site development and management company. Agora developed web sites for clients including corporations, magazine publishers, and universities. Agora initially sold targeted advertising on some of the web sites based on the focused nature of the audiences on those web sites. Agora also developed web site management and publishing tools. As part of this experience, I regularly programmed using HTML and the Perl programming language. I sold my interest in Agora to focus on completing my Ph.D. Since then, I have continued to set up new web sites using numerous web application platforms, using frameworks and languages such as CGI, ASP, Zope, Joomla, Ruby on Rails, XML, XSLT, JavaScript, Perl, PHP, Python, and Ruby.

11. From 1997 to 1999, I was a Senior Scientist and Engineer at NBX Corporation, a start-up that made business telephone systems for streaming packetized audio over data networks instead of using traditional telephone lines. NBX was later acquired by 3Com Corporation, and the phone system I worked on at NBX was widely used by numerous businesses. As part of my work at NBX, I

designed the core audio reconstruction algorithms for the telephones, as well as the packet transmission algorithms. I also designed and validated the core packet transport protocol used by the phone system.

12. From 2003-2004, I was the architect for a next-generation web testing platform developed by Empirix, known as e-Test Suite. e-Test Suite is now owned by Oracle Corporation. e-Test Suite provided functionality and load testing for web sites by providing web developers with a method of creating scripts for emulating a user's interaction with a web site. As part of this project, I co-wrote a JavaScript interpreter for the e-Test Suite so it could understand the JavaScript code present on advanced web sites.

13. I worked at BBN Technologies from 2004 to 2009. BBN Technologies, formerly known as Bolt, Beranek and Newman, was a pioneer of the Internet. BBN received the first contract to build components of a packet switched network as part of the ARPANET, a U.S. Department of Defense effort funded through the Advanced Projects Research Agency ("ARPA"). While this effort preceded my time at BBN by many years, BBN continued to maintain a strong presence in network research and development, including in wireless networking, device discovery, and protocols for a "body area network."

14. In 2006, as part of my role at BBN Technologies, I helped found PodZinger Inc., now known as RAMP Inc. PodZinger created a full web-based

streaming audio and video search solution. The web site had a load-balanced back end that provided search and indexing solutions for our hosted multimedia (audio and video) content. Our PodZinger system processed videos to perform automatic speech recognition on the spoken contents of the videos, after which we produced a word transcript that we used in a search index for all our processed videos. I also worked on commercializing a service offered by BBN to monitor call centers and provide analytical data on each call. The business became known as AVOKE Analytics and provided call center analytics for large organizations such as Dell and the Centers for Medicare and Medicaid Services (“CMMS”).

15. I have web advertising experience. As I mentioned above, I co-founded Agora Technology Group which was funded, in part, through web advertisements. Later in 2008-2009, I helped evaluate different advertising network tools which were used in the roll-out of an advertising network while serving as the CTO of a venture-funded social network start-up company.

16. I am familiar with patents and have numerous provisional and non-provisional patent applications on which I am an inventor, including 4 provisional patent applications, and around 20 non-provisional applications. These patent applications deal with various areas of technology including, but not limited to utilizing network processors, network and packet delivery systems; tagging media content; dynamic presentation of advertising and other content using enhanced

metadata; methods for web site testing; and organizing and managing files that are transmitted over a network.

17. Several of my patents are directed to targeted advertising. U.S. Patent No. 9,697,230, titled “Methods and apparatus for dynamic presentation of advertising, factual, and informational content using enhanced metadata in search-driven media applications,” is directed to applications that use metadata generated from the analysis of corresponding media files to determine placement of content such as targeted advertising, which can be shown concurrently with or within the media playback. U.S. Patent No. 9,697,231, titled “Methods and apparatus for providing virtual media channels based on media search,” is directed to creating a virtual media channel from a search result or rule set, and in which content, such as targeted advertising, can be further inserted into the channel, based on the search and metadata associated with the results.

18. Further details on my education and work experience are contained in my curriculum vitae, attached as EX1018. My curriculum vitae contains my qualifications, including a list of all publications I authored within the preceding ten years; and a listing of any other cases in which I have testified as an expert at trial or by deposition within the preceding four years.

III. COMPENSATION AND RELATIONSHIP WITH PARTIES

19. I am being compensated for my time at a rate of \$925 per hour. This compensation is not contingent upon my performance, the conclusions I reach in my analysis, the outcome of this matter, or any issues involved in or related to this matter.

20. I have no financial interest in Petitioner or any related parties.

IV. MATERIALS CONSIDERED

21. I have reviewed and considered, in preparing this declaration, the '904 patent (EX1001), its prosecution history (EX1003), and the following prior art references:

- U.S. Patent No. 5,948,061 to Merriman et al., filed on October 29, 1996 and titled “Method of Delivery, Targeting, and Measuring Advertising Over Networks” (“Merriman061”) (EX1004);
- U.S. Patent No. 6,415,322 to Jaye, filed on February 26, 1999 and titled “Dual/Blind Identification” (“Jaye”) (EX1005);
- U.S. Patent No. 6,073,241 to Rosenberg et al., filed on August 29, 1996 and titled “Apparatus and Method for Tracking World Wide Web Browser Requests Across Distinct Domains Using Persistent Client-Side State” (“Rosenberg”) (EX1006);

- U.S. Patent No. 8,566,154 to Merriman et al., filed on February 26, 2002 as a continuation of an application filed July 27, 1999, and titled “Network for Distribution of Re-Targeted Advertising” (“Merriman154”), (EX1007); and
- U.S. Publication No. 2002/0026351 to Coleman, filed on June 30, 1999 and titled “Method and System for Delivery of Targeted Commercial Messages” (“Coleman”) (EX1019).

22. I am also aware of and considered in forming my opinions presented in this declaration, other information available to a person of ordinary skill in the art at the time of the effective filing date of the challenged patent (“POSITA”), such as other patents, reference materials, articles, and standards, and knowledge of a POSITA.¹ These include:

- Zeff, R., et al., *Advertising on the Internet*, John Wiley & Sons, Inc., 1997 (EX1008) (“Zeff”);
- Mena, J., *Data Mining Your Website*, Digital Press, 1999 (EX1009) (“Mena”);

¹ I understand that the challenged patent has an effective filing date of December 13, 1999 as I discuss in more detail below.

- Fielding, R., Gettys, J., Mogul, J., Frystyk, H., Masinter, L., Leach, P., and Berners-Lee, T., “Hypertext Transfer Protocol -- HTTP/1.1”, RFC 2616, June 1999 (available at: <https://web.archive.org/web/20000815084854/http://www.w3.org/Protocols/rfc2616/rfc2616.txt>, Internet Archive capture August 15, 2000) (EX1010);
- Berners-Lee, T. and Connolly, D., “Hypertext Markup Language - 2.0”, RFC 1866, November 1995 (available at: <https://web.archive.org/web/20001118042500/https://www.ietf.org/rfc/rfc1866.txt>, Internet Archive capture August 16, 2000) (EX1011).
- Kristol, D. and Montulli, L., “HTTP State Management Mechanism”, RFC 2109, February 1997 (available at: <https://web.archive.org/web/20000914191404/https://www.rfc-editor.org/rfc/rfc2109.txt>, Internet Archive capture September 14, 2000) (EX1016).

23. I understand that Petitioner and Patent Owner are involved in a parallel litigation involving two patents, including the challenged patent.

24. Should new information be disclosed or discovered during this proceeding, I may supplement and further elaborate on the opinions I express in this declaration as necessary. Nothing in this declaration should be interpreted as an

opinion that no grounds of invalidity exist other than the ones in the petition. I do not express such an opinion and have not reached such an opinion.

V. BASIS OF OPINIONS

A. Legal Standard for Anticipation

25. I understand that a claimed invention is unpatentable as “anticipated” by a single prior art reference if it discloses each and every element of the claim. I also understand that, even if a claim is not explicitly disclosed in the prior art reference, the prior art reference may nevertheless anticipate the claim if the subject matter of the claim is inherently present from the perspective of a POSITA. Moreover, I understand that even if the prior art reference does not disclose the limitations of a claim in the same arrangement or combination of the limitations of the claim, it may nevertheless anticipate if a POSITA would envisage the claimed arrangement or combination.

B. Legal Standard for Obviousness

26. I understand that a claimed invention is unpatentable as “obvious” if the differences between the claimed invention and the prior art are such that the subject matter of the claim as a whole would have been obvious to a POSITA.

27. It is my understanding that “obviousness” is a question of law based on underlying factual issues including (1) the scope and content of the prior art, (2) the differences between the prior art and the asserted claims, (3) the level of ordinary

skill in the pertinent art, and (4) the existence of secondary considerations such as commercial success, long-felt but unresolved needs, and failure of others.

28. I understand that a single reference can render a patent claim obvious if any differences between that reference and the claims would have been obvious to a POSITA. Alternatively, the teachings of two or more references may be combined in the same way as disclosed in the claims, if such a combination would have been obvious to a POSITA. In determining whether a combination based on either a single reference or multiple references would have been obvious, I understand that it is appropriate to consider the following factors:

- Whether the teachings of the prior art references disclose known concepts combined in familiar ways, and when combined, would yield predictable results;
- Whether a POSITA could implement a predictable variation, and would see the benefit of doing so;
- Whether the claimed elements represent one of a limited number of known design choices, and would have a reasonable expectation of success by those skilled in the art;
- Whether a POSITA would have recognized a reason to combine known elements in the manner described in the claim;

- Whether there is some teaching or suggestion in the prior art to make the modification or combination of elements claimed in the patent; and
- Whether the innovation applies a known technique that had been used to improve a similar device or method in a similar way.

29. In an obviousness evaluation based on a combination of multiple prior art references, I understand that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but other times the nexus linking two or more prior art references may be simple common sense. I further understand that obviousness analysis recognizes that market demand, rather than scientific literature, often drives innovation, and that a motivation to combine references may be supplied by the direction of the marketplace.

C. Level of Ordinary Skill in the Art

30. I understand that the '904 patent should be interpreted from the perspective of a person having “ordinary skill in the art” as of the effective filing date of the patent application (i.e., a POSITA). For the purposes of this declaration, I assume that the effective filing date of the patent application leading to the '904 patent is no earlier than December 13, 1999, and I understand that Patent Owner has not claimed an earlier priority date in the parallel litigation. I am familiar with the technological field at issue and the state of the art as of that date.

31. I understand that the education level of those in the technological field, sophistication of the technology, types of problems encountered, prior art solutions to those problems, and the speed at which innovations are made in the field may factor into establishing what the appropriate level of ordinary skill should be.

32. The specification of the challenged patent states that it “generally relates to a mercantile method,” and more specifically, “to a mercantile method directed to brokerage of attributes of information.” EX1001, 1:29-33. The claims of the challenged patent generally describe “a method of collecting profiles of Internet-using entities” involving (a) receiving “an electronically URL-redirection partial profile” of an entity that uses a user computer, (b) adding the received partial profile to a maintained profile, and (c) generating and storing a record of which unaffiliated third party contributed particular profile attributes to the maintained profile, (d) wherein the maintained profile is used for targeted advertising. *Id.*, e.g., 16:59-17:16 (claim 1).

33. In my opinion, a POSITA would have experience in online advertising and computer science. A POSITA’s education could include a bachelor’s degree in business or economics, with an emphasis on the use of technology in marketing or advertising, or have similar knowledge gained through actual work experience. Such a person could also hold a bachelor’s degree in computer science or equivalent industry experience, and work with a team that includes software engineers. A

person could also have qualified with more formal education and less technical experience, or vice versa.

34. I had at least the requisite level of skill with respect to the subject matter of the challenged patent at the time of the effective filing date as demonstrated by my qualifications listed above and my CV (EX1018).

D. Claim Construction

35. I understand that, in *Inter Partes* Review (“IPR”) proceedings, a claim of a patent shall be construed using the same claim construction standard that would be used to construe the claim in a civil action filed in a U.S. district court (which I understand is called the “*Phillips*” claim construction standard), including construing the claim in accordance with the plain-and-ordinary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

36. I applied plain-and-ordinary meaning to all terms of the challenged claims for my analysis in this proceeding. This construction is consistent with the Court’s Claim Construction Order for U.S. Patent No. 8,244,582 (“’582 patent”), the parent of the challenged patent, in *AlmondNet, Inc. et al. v. Amazon.com, Inc., et al.*, 6:21-cv-00898 (W.D. Tex.). There, the Court found that plain-and-ordinary meaning is appropriate for the following terms that also appear in the challenged claims: “unaffiliated third parties”/“unaffiliated third party,” “partial profile,”

“available,” “automatically with the computer system”/“automatically,” “URL redirection,” and “indicia of instructions.” EX1012.

37. I understand from the Court’s Claim Construction Order (EX1012) that Patent Owner argued the term “unaffiliated third parties”/“unaffiliated third party” means “a party not having common ownership with the party or parties that control said programmed computer system.” EX1012, 18-24. Patent Owner additionally argued the term “URL redirection” means “obtaining certain information for at least a portion of an accessed page / site from a different location.” *Id.*, 33-37. My opinion is that Patent Owner’s argued constructions are consistent with the plain-and-ordinary meanings of these terms. *See Id.*, 22-24, 36-37.

38. I am not an attorney, and my opinions are limited to what I believe a POSITA would have understood the meaning of certain claim terms to be, based on the patent specification and prosecution history in light of the POSITA’s knowledge.

VI. OVERVIEW OF THE ’904 PATENT

39. The ’904 patent was filed as Application No. 13/585,779 (the “’779 application”) on August 14, 2012. The ’779 application is a continuation of Application No. 13/115,949 (the “’949 application”) filed on May 25, 2011. The ’949 application is a continuation of Application No. 12/186,918 (the “’918 application”) filed on August 6, 2008. The ’918 application is a division of Application No. 11/099,861 (the “’861 application”) filed on April 6, 2005. The

'861 application is a continuation of Application No. 09/593,993 (the "'993 application") filed on June 14, 2000. The '993 application claims priority to Israel Application No. 133,489, filed December 13, 1999 (the effective filing date). EX1001.²

40. The '904 patent states that it is directed to "accumulating descriptive profile data" through "profile providers who contribute profile elements about an online visitor." EX1001, Abstract. The '904 patent describes a website using a profile to "make better profit from [a] visitation" by allowing the website to "know more about the visitor." *Id.*, 2:38-40, 4:1-4. For example, a profile can be "used by an advertiser for generating targeted advertising." *Id.*, 8:30-35.

41. The '904 patent describes a method for building a profile about a visitor involving a website forwarding a "partial profile" of the visitor to a server. *Id.*, 4:2-8. The server searches a databank of existing profiles and incorporates the received partial profile into one of the existing profiles. *See id.*, 3:39-49; 12:55-64. The existing profile is one believed to be related to the same visitor, based on having a matching "name, address, URL, [or] cookie." *Id.*, 9:40-52.

² I understand Patent Owner has not claimed an earlier priority date in the district court proceeding.

42. The '904 patent specification describes a “profile” as a “collection of attributes that describe a person or an organization or any other entity that can be described by a combination of data,” such as for example, a person’s gender, age, education, interests as reflected in his behavior or as reported by the person or membership in a club, etc. *Id.*, 2:38-45. Further, the '904 patent explains that “profile attributes include, among other things, attributes that enable the identification of the entity described by the profile such as name, address, URL, [and] cookie” and can also include “information learned about the entity described by the profile from a communication protocol such as the information learned about the visitor to a website from its http header.” *Id.*, 2:51-59. The patent’s description of a “profile” also applies to partial profiles. *See id.*, 7:53-54 (explaining that “[i]n the context of the preferred embodiment of the present invention, all profiles are, by definition, partial”).

43. The '904 patent describes the partial profile forwarding process as using conventional cookies and redirects:

The web-site forwards particulars from the visitor’s credentials (a partial profile), as well as (optionally) a redirect to a portion of the visitor's page to a server located in cyberspace (at a juncture in a data communications topology). By redirecting a portion of the visitor’s page to the server, the visitor’s browser reports to the server a cookie the server put on the visitor’s computer in the past, if any. This server interconnects the user’s transactions and the server own cookie (if used)

with a computer having therein software for running the method of the present invention.

EX1001, 4:4-14, 12:10-20. The computer that receives the forwarded information “uses the forwarded visitor credentials with its server cookie (if any) to search the associated databank.” *Id.*, 4:17-18. In my opinion, a POSITA would have recognized and appreciated that the compilation of the features recited in the challenged claims was not unique and instead would have been a predictable compilation of conventional technologies/techniques.

VII. RELATED LITIGATION AND RELATED PATENTS

44. I understand that the '904 patent is the subject of pending litigation involving Petitioner and Patent Owner: *AlmondNet, Inc. and Datonics LLC v. Amazon.com, Inc., et al.*, No. 6:24-cv-00234 (W.D. Texas, May 3, 2024) (the “parallel litigation”). I understand that Patent Owner sued Petitioner for alleged infringement of the '904 patent. *See* EX1013.

45. I understand that the '904 patent has been involved or is currently involved in other litigations, including: *AlmondNet, Inc. v. LiveIntent Inc.*, Case No. 1:24-cv-00831 (D. Del.); *AlmondNet, Inc. v. Lotame Solutions Inc.*, Case No. 1:24-cv-00376 (D. Del.); *AlmondNet, Inc. v. Oath Holdings Inc. and Yahoo Inc.*, Case No. 1:16-cv-00247 (D. Del.); and *AlmondNet, Inc. v. Yahoo! Inc.*, Case No. 1:16-cv-01557 (E.D. N.Y.).

46. I also understand that the parent patent of the '904 patent, the '582 patent, was involved in a prior district court proceeding involving Petitioner and Patent Owner, *AlmondNet, Inc. et al. v. Amazon.com, Inc., et al.*, 6:21-cv-00898 (W.D. Tex.). See EX1012 (claim construction order referencing '582 patent). The '582 patent was additionally the subject of U.S. Patent Office proceedings initiated by Petitioner and third parties. These include IPR2022-01455, IPR2022-01436, IPR2022-01260, and CBM2017-00052. In IPR2022-01436, the Board instituted the IPR against challenged claims 11, 13-16, 19, and 20 of the '582 patent and issued a Final Written Decision holding these claims unpatentable over a combination of Rosenberg, Zeff³, and Sterne⁴, or Rosenberg, Zeff, Sterne, and U.S. Patent No., 5,978,791 ("Farber"). EX1014.

47. I also understand that two other patents related to the '904 patent, U.S. Patent No. 7,979,307 (the "'307 patent") and U.S. Patent No. 8,775,249 (the "'249 patent"), were and are the subject of U.S. Patent Office proceedings filed by third parties, including IPR2024-00413, IPR2024-00414, IPR2024-00415, and

³ Zeff, R., et al., *Advertising on the Internet*, John Wiley & Sons, Inc., 1997 (EX1008) ("Zeff").

⁴ Sterne, Jim, *What Makes People Click: Advertising on the Web*, Que Corporation, 1997 ("Sterne").

CBM2017-0049 for the '307 patent, and IPR2024-00416, IPR2024-00417, IPR2024-00418, and CBM2017-00050 for the '249 patent. I am aware that two of these IPRs were instituted: IPR2024-00413 challenging the '307 patent, and IPR2024-00416 challenging the '249 patent. I understand that both instituted IPRs include grounds challenging claims of the respective patents based on a combination of Merriman061 and Jaye.

VIII. PRIOR ART TO THE CHALLENGED PATENT

A. Technological Background

48. Targeted Internet advertising using profiles containing attributes received from third parties would have been well known to a POSITA at the time of the effective filing date of the challenged patent. Advertisers have long considered it highly desirable to “target advertisements to the appropriate potential customer base, rather than to broadcast advertisements in general.” EX1004, 1:12-15. For example, in the pre-Internet era, advertisements in printed publications were targeted to expected readers of the publications. *Id.*, 1:15-22. Similarly, broadcast television advertisers generally targeted their advertisements “to programs appropriate for the desired customer base.” *Id.* This type of targeting carried over to the Internet era. For example, it was well-known that ads could be targeted to the types of visitors expected to visit specific websites. *See, e.g.*, EX1008, 78 (“Obviously, for example, SportsLine and SportsZone are excellent sites for reaching sports fans”).

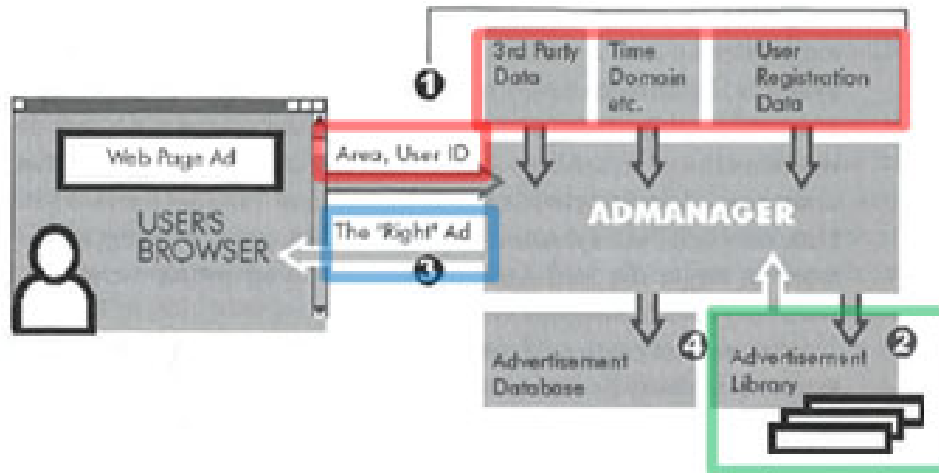
49. A POSITA would have known that website advertising enables better targeting than traditional advertising models. As explained in Zeff, website advertising “gives advertisers the opportunity to precisely target an audience, enabling them to deliver advertisements that are customized to each user’s particular interests and tastes.” EX1008, 16. For example, website advertisers can focus their targeting “on users from specific companies, SIC codes, geographical regions and nations, as well as by time of day, computer platform, and browser.” *Id.*, 19.

50. Better targeting is important because website publishers and Internet advertisers are highly motivated to use targeted advertising. Advertisers are willing to pay a premium for ads that are targeted to particular visitors (e.g., targeted to particular types of visitors) because targeted ads tend to be more effective. *See* EX1008, 18 (“the Web’s targeting and tracking capabilities have the potential to make it one of the most responsive media available to advertisers”). Website publishers can therefore increase revenue by using targeted advertising relative to non-targeted advertising. *Id.*, 37 (“targeting helps advertisers better reach their market and allows publishers to charge higher CPMs”), 43 (“It goes without saying that the more publishers can tell advertisers about their audience, the higher the CPM publishers can charge for advertising space”), 45 (“those publishers who can offer targeted advertising buys can usually charge higher advertising rates”), 95 (“[t]he more detailed audience profile you can draw, the more valuable your advertising real

estate”). Therefore, website publishers and other entities selling advertising space have a compelling economic incentive to use techniques, products, and services that provide and/or enhance ad targeting—doing so allows them to charge higher rates and make more money.

51. I turn now to the underlying technology for providing targeted advertising on the web. A web server computer provides the functionality of a website, including serving web pages in response to requests from web browsers. *See, e.g.*, EX1009, 209; EX1004, 3:24-38; EX1005, 4:53-5:4. Typically, the ads shown on the web pages returned by the web server are selected by ad server software, which may execute on the web server computer or on a dedicated ad server computer. When a user’s browser requests a web page from the website, the ad server software compares information about the user “to the advertising banners in its database, and then chooses the most appropriate banner for the user based on the advertisers’ targeting requests.” EX1008, 37.

52. Zeff includes an illustration demonstrating how Ad Manager ad server software from Accipiter works:



Id., 38 (annotated).⁵ As shown, AdManager matches data about the current ad impression, including data about the user, with an ad from an advertisement library, serves the selected ad to the user, and then records information about the served ad in a database. *Id.*, 37. The user’s browser shows the ad within the web page.

53. By the time of Zeff’s publication in 1997, website publishers operated thousands of websites accepting advertising. EX1008, 25. There were also many advertisers who wanted to advertise on those websites. *Id.*, 28-29. Website publishers who operated their own ad servers typically needed to negotiate ad sales directly with the advertisers. The advertisers, in turn, needed to negotiate directly with the website publishers from whom they sought to buy ad space. This many-to-many relationship created market inefficiencies.

⁵ All annotations and emphases are added unless otherwise noted.

54. Ad networks arose to address these inefficiencies. An ad network acts as an intermediary between the publishers and advertisers by operating an ad server that handles advertising for multiple websites. The website publishers can thus delegate ad sales to the ad network, and advertisers can purchase advertising space from the ad network instead of dealing with individual website publishers. As Zeff describes it:

[A]n ad network brings together a group of sites with advertising inventory to sell in order to offer greater access and ease to publishers and advertisers alike. For publishers, this means access to more advertisers through the network's salesforce; for the advertisers, this means that with one buy they can purchase impressions on a host of sites. As the cliché promises, there is power in numbers, and ad networks bring the power of a selling block to individual sites.

Id., 103.

55. As of 1997, two years before the effective filing date of the challenged patent, there were at least a dozen ad networks in operation. EX1008, 29 (Table 2.4). DoubleClick was a major ad network at the time.⁶ Using DoubleClick, “[a] media buyer can make one purchase with DoubleClick and have an ad placed on dozens of sites.” *Id.*, 59.

⁶ Google acquired DoubleClick in 2007. EX1015.

56. The ad networks provided targeted advertising. For example, “[b]y managing the advertising on all of its member sites, DoubleClick extends an advertiser’s reach to a niche audience” by delivering “the advertisement to users who meet the [targeting] criteria across its entire network.” *Id.*, 39. In fact, Zeff states that ad networks offer advertisers “the best reach for targeted ad delivery – especially as technology improves targeting capabilities.” *Id.*

57. As I describe above, targeted advertising is performed by matching targeting criteria for an ad with information about the user (i.e., a person who uses a web browser on a computer to request and view a web page from a website) to whom the ad will be shown. A POSITA would have known that a common way to store the information about a user is in a profile. Zeff demonstrates that creating and using profiles for targeted advertising was well known by 1997:

Advertisers want to know—indeed, they must know—who they will reach by advertising on your site. Consequently, you need to be able to provide a profile of your audience. This profile can be compiled through interactive strategies such as registration, surveys, or even games and contests. You can also implement many of the new technologies available for greater targeting and personalization--of ads. The more detailed audience profile you can draw, the more valuable your advertising real estate. If your site can deliver an already targeted consumer market, your real estate has a higher value than generic “land” on another site.

Id., 95-96.

58. A POSITA would have known there are a variety of ways to collect profile information about a user. As Zeff says, profile information “can be compiled through interactive strategies such as registration, surveys, or even games and contests.” *Id.*, 95. *See also id.*, 43 (“publishers ask their users to answer surveys, fill out questionnaires, and register in an effort to form demographic profiles”).

59. A POSITA also would have known that profile information can be collected from third parties. Mena recognized in 1999 that “[t]here is an entire industry of information resellers who accumulate, organize, and package data for companies and marketers wishing to improve their sales, retain their customers, and enhance their relationships with their clients.” EX1009, 243.

60. A user’s online behavior, such as the websites and web pages the user visits, is one type of profile information of which a POSITA would have been aware. This type of profile information may be collected by direct observation. For example, Zeff describes the Firefly network which uses a “Firefly Passport” to “track a user’s actions and learn the user’s preferences” by following “the user on any Firefly-enhanced site that he or she visits.” EX1008, 50-51.

61. Profile information describing a user’s online behavior may also be collected from third party websites. DoubleClick, for example, built profiles by collecting profile information from websites participating in the DoubleClick

Network. According to Mena, “[t]he DoubleClick system tracks user movements between various member websites run by clients on their advertising networks” and “serve[s] up a unique ad for each user, depending upon a user’s interests as expressed via their selections in the websites that are part of the DoubleClick network.” EX1009, 267. In other words, “DoubleClick uses its network of sites to collect information on where users have gone and what they are likely to respond to positively” and “allows advertisers to target their best prospects based on the most precise profiling criteria available.” EX1009, 268.

62. Engage Technologies (“Engage”) is another company that built user profiles by collecting profile information describing users’ online behaviors from third party websites.⁷ According to Mena, Engage “sells software that is designed to enable sites to distinguish anonymous and registered visitors and customers.” Engage’s software includes Engage.Journal, which is “for website data collection and visitor individualization.” EX1009, 268. Engage.Journal “identifies individual website visitors using global and local ‘certificates’” which can “be transmitted to a global server, housed either at Engage Technologies or at an organization’s site, which allows visitor information to be captured and correlated across multiple websites and Internet domains.” *Id.*, 269. The information is stored in a “proprietary

⁷ My understanding is that Engage Technologies no longer operates.

database of millions of Internet user profiles, which include historic and multi-site views of anonymous, individual users' interests, experiences and usage patterns" which website members can access using the Engage.Knowledge service. *Id.*, 268.

63. To explain how companies such as DoubleClick and Engage built user profiles using information collected from third party websites, I first explain how the DoubleClick ad network served ads on publisher websites according to Zeff's Figure 9.2, attributed to DoubleClick and titled "How DoubleClick Delivers Targeted Advertising":

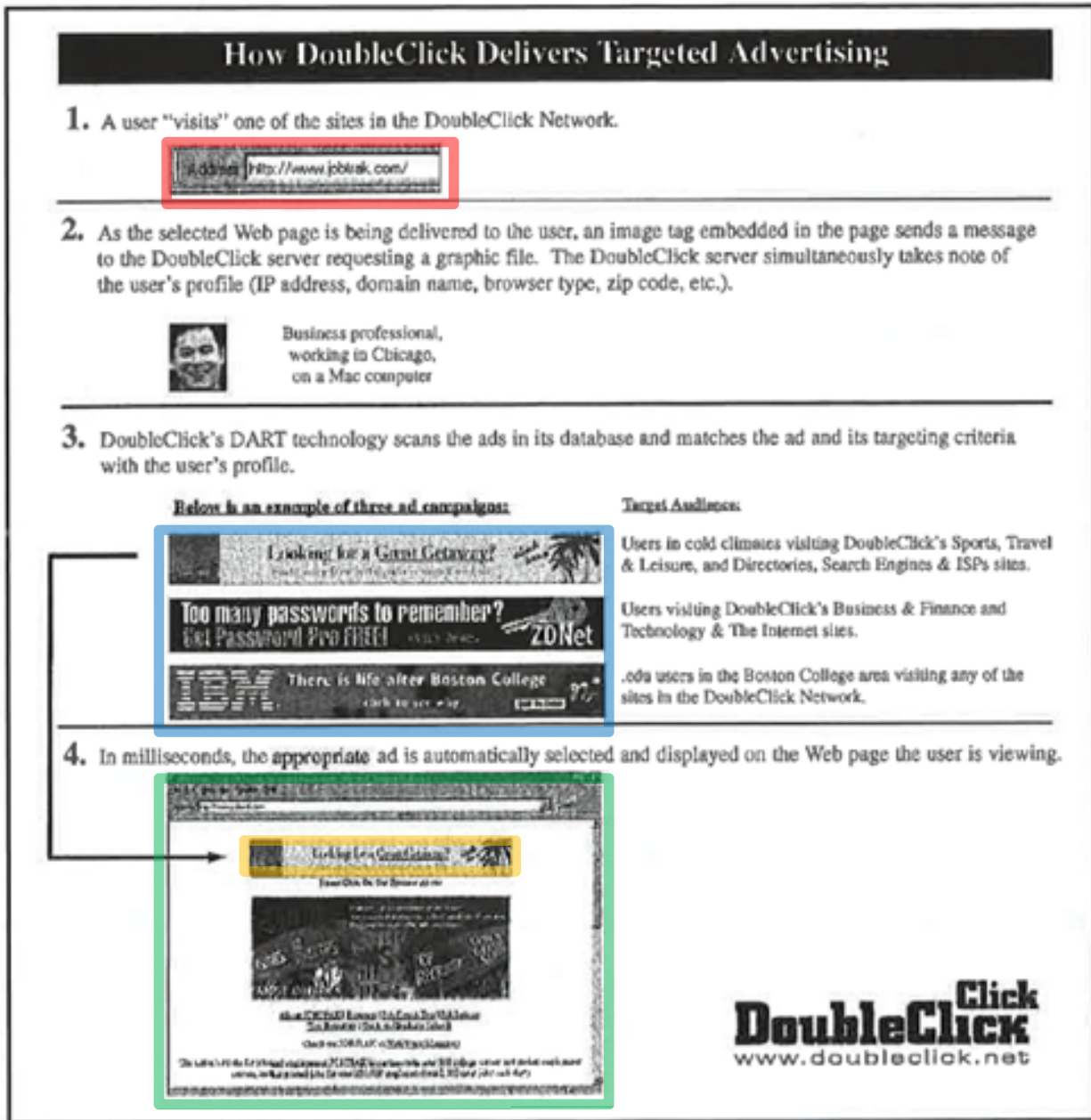


FIGURE 9.2 DoubleClick Network targeting options.

Source: Courtesy of DoubleClick

EX1008, 104.

64. A POSITA would have understood Figure 9.2 (reproduced above, annotations added) as follows. At step 1, a user visits “one of the sites in the

DoubleClick Network,” in this case www.jobtrak.com, using a web browser (shown in the red box). At step 2, the web server for www.jobtrak.com delivers a web page to the user’s browser (shown in the green box). The figure says “an image tag embedded in the page sends a message to the DoubleClick server requesting a graphic file.” A POSITA would have understood this statement to mean that the image tag in the web page delivered by the web server for www.jobtrak.com causes the user’s browser to make a request to DoubleClick’s ad server for a graphic file specified by the image tag. DoubleClick’s ad server receives the request made due to the image tag and “takes note of the user’s profile.”

65. At step 3, the DoubleClick’s ad server “scans the ads in its database” and identifies an ad having targeting criteria that matches the user’s profile. Figure 9.2 shows three ads (shown in the blue box), each having different targeting criteria. The first ad is targeted to “[u]sers in cold climates visiting DoubleClick’s Sports, Travel & Leisure, and Directories, Search Engines & ISP sites.” The second ad is targeted to “[u]sers visiting DoubleClick’s Business & Finance and Technology & The Internet sites.” The third ad is targeted to “.edu users in the Boston College area visiting any of the sites in the DoubleClick Network.”

66. Step 4 illustrates that DoubleClick’s ad server selects the first ad, “which is displayed on the Web page the user is viewing.” A POSITA would have understood this to mean that DoubleClick’s ad server sends the selected ad to the

user's browser in response to the request caused by the image tag, and the user's browser displays the ad (shown in the orange box) integrated within the web page from www.jobtrak.com.

67. This figure thus explains that the web server for www.jobtrack.com serves content for a web page, but DoubleClick's ad server serves the ad on the page. A POSITA would have understood that DoubleClick used this technique to simultaneously serve ads for multiple sites. Zeff explains that DoubleClick's ad network "sells advertising for over 35 high-traffic sites," "manag[es] the advertising on all of its member sites," and "delivers the advertisements to users who meet the criteria across its entire network." EX1008, 39.

68. I now explain how a POSITA would have understood an ad network such as DoubleClick or other entity like Engage to collect profile information about a user's online behavior from third party websites. This process uses cookies to identify respective browsers who request web pages from websites. "*Cookies* are small text files created by servers on visiting browsers' hard disks that contain an identification code." EX1009, 218-219. "A cookie is most often used as an identification tag." EX1008, 41.

69. Typically, when a web server of a website receives a request from a browser, the server checks to see whether the request includes a cookie. If not, the web server automatically generates a unique identifier for the browser and includes

an instruction in its response telling the browser to store a cookie containing the identifier on the user's computer. *See* EX1009, 219 (“The usual way cookies work is when a CGI script identifies a new user, it adds an extra header to its response with an identifier for that web visitor and other information that the server may capture from the client's input. This new header data informs the browser to add this information to the client's cookie file.”), 223 (explaining how a server tells a browser to save an ID in a cookie); EX1008, 41 (“when a user goes to a site, he or she is issued a unique ID, that is, a cookie.”)

70. The user's browser automatically includes the cookie (with the identifier) in any subsequent requests to the same website. The web server uses the cookie to recognize the browser; it can do this because separate requests from the same browser include the same cookie identifier. EX1009, 219 (“Any subsequent request to that URL from the browser will include the cookie information as an extra header in the request.”), 223 (explaining how a browser request includes a cookie); EX1016 (RFC 2109, describing how web browsers and servers use cookies); EX1005, 5:20-48; EX1006, 2:5-3:6.

71. A web server can thus use cookies to identify requests coming from the same browser. Hence, cookies identify *browsers*, not people. Mena addresses this point, stating that “[c]ookies unfortunately are limited to identifying browsers, not individuals.” EX1009, 219; *see also id.*, 225 (cookies “track browsers, not people”).

Zeff similarly says “[c]ookies are mapped to the browser, not to the individual” and “[t]he hard drive on which cookies are placed may be used by several people.” EX1008, 43. A POSITA would have understood that a computer executes the browser, and thus a cookie that identifies a browser also identifies the user computer on which the browser is located.

72. A POSITA also would have understood that a browser is often used by one person, or a small set of people, and thus a cookie that identifies a browser may be said to identify the person using the browser. *See, e.g.*, EX1008, 41 (“when a user goes to a site, he or she is issued a unique ID, that is, a cookie”); EX1009, 219 (cookies “are passed by servers to browsers so that each time a website visitor returns to a server that passed the cookie it can recognize it.”); EX1006, 2:15-21.

73. Due to these understandings, a POSITA would have known it was conventional at the effective date of the challenged patent to describe cookies as variously identifying a browser, computer, and user. Despite the differences in terminology, these cookie descriptions refer to the same underlying technology for identifying a browser, which is set forth in RFC 2109 (EX1016). I follow this convention herein.

74. Cookies are accordingly used to build profiles of people using web browsers. One way to use cookies to build user profiles is by storing records of browser requests to a website provided by a web server in an associated database,

which effectively tracks the user's activities on the website. In addition, if the user provides additional profile information while interacting with the website by, e.g., registering or responding to a survey, this information can also be included in the profile. Mena describes this process:

One of the most common uses of cookies is for the tracking of visitors as they navigate through a website. By collecting a visitor's cookie every time a page is requested, say for a different product or service in your site, specific patterns or paths can be mined to determine what parts of your website are the most popular. Also, you may begin the process of profiling your online customers by linking cookies to referrer log and demographic data or registration information on your visitors and customers. This profile can then be used for subsequent analysis and marketing applications. Cookies can also be used to record what type of products and services a visitor has seen and purchased so that subsequent visits can be personalized to match their specific tastes and interests.

EX1009, 222-223; *see also id.*, 49 (a key value in a cookie will “allow you to link the information from your server log files, cookies, and forms with your data warehouse and other demographic and household information”); EX1008, 41 (“Each time the user accesses another page on the Web site, the server requests the ID tag. Then the user (for example, ID#345243) is recorded as he or she moves throughout the site. Each time the user clicks on an advertisement or fills out a survey, the actions can be recorded in a database as those performed by that user.”).

75. Profiles created in this manner are used for targeted advertising. For example, “[i]f a publisher checks an ID tag, and discovers that according to his or her database, the user visited the auto section of his or her Web site three times, he or she can deliver an advertisement to the user for a car manufacturer.” EX1008, 41; *see also* EX1009, 224 (“[c]ookies can be used to target and rotate ads”).

76. However, a browser cookie cannot be read by a web server in a domain other than the one that placed it. In other words, “[a] user may receive cookies from any number of Web sites, but Web sites can only access the specific cookies that they placed on the user’s hard drive.” EX1008, 40; EX1009, 219 (“Netscape developed cookies as a means for servers to identify a specific browser, with the specification that only the server that provided the cookie can be the one that can access it and retrieve it. This means that identification cookie codes sent to your cookie.txt file by another server could not be accessed by a different website.”), 220 (“Only pages from the original server are allowed to read that cookie. This means snap.com cannot read the cookies issued by yahoo.com or infoseek.com.”); *see also* EX1001, 3:2-3 (“Each cookie is reported (by the computer browser) only to the web site server that installed that cookie.”); EX1005, 5:31-48.

77. Since each web server can read only the cookie it placed in a browser and cannot read cookies placed by web servers in other domains, different web servers typically use different cookie identifiers for the same user. For example,

web server A might use identifier “1234” while web server B uses identifier “5678” for the same user. As a result, developers working in the years preceding the effective filing date of the challenged patent developed various techniques that enabled different web servers to recognize the same user. This recognition allows interested parties to pool profile information about the user acquired by different web servers and enable better ad targeting to that user.

78. One technique of which a POSITA would have been aware uses a “redirect” to cause a user’s browser to pass a cookie identifier and/or other profile information about a user between websites. A redirect occurs when a web server instructs a web browser to obtain information from a different location. *See, e.g.,* EX1012, 33-37 (Patent Owner arguing that “URL redirection” means “obtaining certain information for at least a portion of an accessed page / site from a different location”).

79. For example, a redirect occurs when first web server sends a browser a web page including an instruction causing the browser to request certain content for the page from a second web server, e.g., by using the image tag I described earlier. The redirect allows the second web server to use its own cookie to recognize the browser. In addition, the first web server can pass profile information to the second web server via the redirect, such as by encoding the profile information into the URL for the content that the first web server instructs the browser to request from the

second web server. When the browser requests the content from the second web server, the second web server decodes the profile information from the URL and associates it with the identified user. EX1009, 230-233; EX1005, 5:5-8:28.

80. Mena discloses multiple web servers using this type of redirect-based information exchange to establish a common cookie identifier for a user. Mena describes server software called the “Microsoft Personalization System” (MPS) that uses a redirect and “allows developers to create globally unique identification cookies (GUIDs) that are identical in multiple websites, allowing for the sharing of cookies between multiple domains.” EX1009, 230. In detail:

The way this feature works is when a visitor appears at a server using this feature instead of sending a cookie, the MPS **redirects** the user to a different server. This second server then checks for a cookie, assigns a cookie if required, and bounces the visitor back to the original server with a message for that server about the cookie it set up. The original server then assigns a cookie that matches the cookie set by the master server. The result is a set of persistent cookies for two different domains with the same value.

EX1009, 230. A POSITA would have understood this description to mean that when a user’s browser makes a request to a first web server, the first web server instructs the browser to make a request to the second web server (i.e., redirects the browser to the second web server) and does not provide the browser with a cookie. The browser makes the request to the second web server, and the second web server

determines its cookie identifier for the browser, which may be new or preexisting. The second web server then “bounces” (which a POSITA would have understood to mean redirects) the browser back to the first web server in a way that causes the browser to send the second web server’s cookie identifier to the first web server (“a message for that server about the cookie it set up”). The first web server then instructs the browser to create a cookie for the first web server that contains the same identifier used by the second web server.

81. Mena also alludes to DoubleClick and Engage using this type of redirect-based cookie sharing. Mena describes DoubleClick as an example of a company that commingles cookies “via server networks.” EX1009, 242; *see also id.*, 24 (DoubleClick provides “the aggregate pooling of cookies through ad networks”), 267 (DoubleClick Network is “a collection of over 60 highly trafficked sites that commingle their cookies in order to place the appropriate ad to visitors”). For Engage, Mena describes Engage.Journal, which “identifies individual website visitors using global and local ‘certificates,’ where “[c]ertificate information can...be transmitted to a global server...which allows visitor information to be captured and correlated across multiple websites and Internet domains.” EX1009, 269.

82. A POSITA would have been aware of this technique for sharing profile information using a redirect and the benefits of using the technique for creating

profiles. *See, e.g.*, EX1009, 320-322 (“Through the strategic use of site-specific data merged with external data, you will be able to ‘profile’ who your customers are” which “may involve merging your log files with a collaborative or personalization service provider using shared cookies, pooled over a network of websites” like the “commingling of cookies” provided by DoubleClick).

83. A POSITA also would have been familiar with a variety of different pricing models for Internet advertising that were in use during the late 1990s. EX1008, 56-72 (describing different pricing models). A common model was CPM, which refers to “cost per mille,” or the cost an advertiser pays for one thousand views (or “impressions”) of an ad. *Id.*, 56-57. The CPM could be set by a website publisher or ad network, for example. *Id.*, 56-59. A publisher could retain an ad network to sell the ad space on the publisher’s website. In this case, the ad network would typically take commissions on the ads it places. *Id.*, 106.

B. Summary of the Prior Art

1. Merriman061 (EX1004)

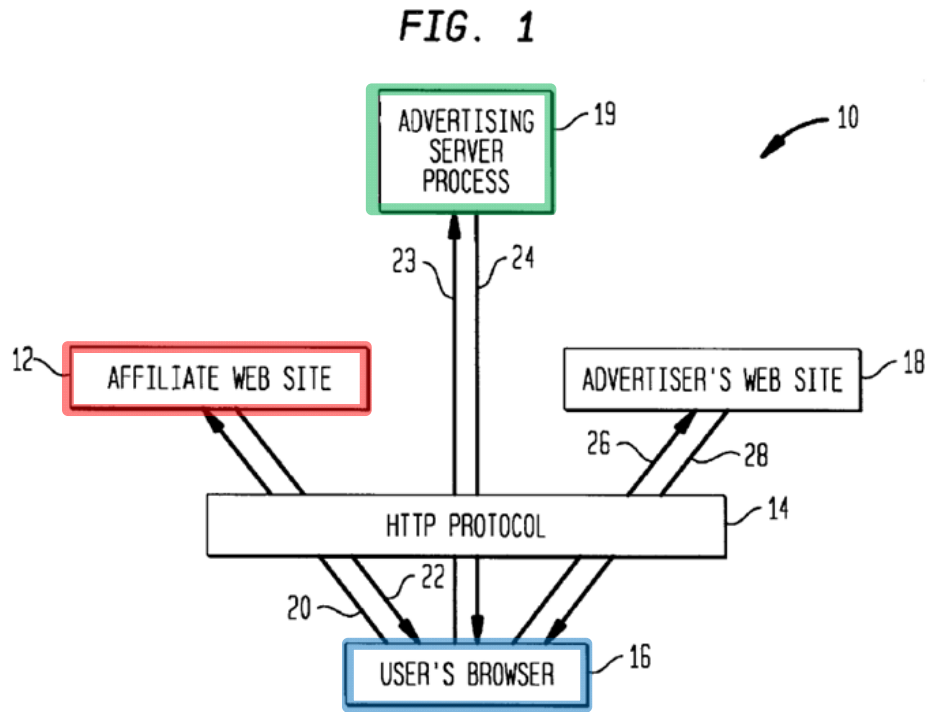
84. Merriman061, U.S. Patent No. 5,948,061, is entitled “Method of Delivery, Targeting, and Measuring Advertising over Networks.” Merriman061 was filed on October 29, 1996, and issued September 7, 1999. EX1004. I understand that Merriman061 is prior art because its filing and issue dates predate the December

13, 1999 effective filing date of the challenged patent. I form no opinion as to whether Merriman061 is entitled to an earlier priority date.

85. Merriman061 is assigned on its face to “Double Click, Inc.” EX1004, 1. I understand that “Double Click, Inc.” is related to the “DoubleClick” I referenced above in the Technological Background.

86. Merriman061 describes “[m]ethods and apparatuses for targeting the delivery of advertisements over a network such as the Internet.” EX1004, Abstract. Merriman061 discloses a system including “an advertising server” that, responsive to a user “accessing the page of a site,” selects an “appropriate one of the advertisement based upon profiling of users and networks.” *Id.* A POSITA would thus have understood that Merriman061 is directed to providing targeted advertising.

87. Merriman061 illustrates the various entities involved in its operation in Figure 1.



EX1004, Fig. 1. These entities include a **user browser 16** (blue), “at least one **affiliate web site 12**” (red), an “**advertisement (ad) server web site 19**” (green, shown as an “advertising server process” in the figure), and an “one or more individual advertiser’s web sites 18.” *Id.*, 2:59-62.

88. The affiliates are “one or more entities that generally for a fee contract with the entity providing the advertisement server [to] permit third party advertisements to be displayed on their web sites.” *Id.*, 2:62-65. When “a user using a browser accesses or ‘visits’ a web site of an affiliate, an advertisement provided by the advertisement server 19 will be superimposed on the display of the affiliate’s web page displayed by the user’s browser.” *Id.*, 2:65-3:1. In other words, an affiliate website displays ads provided by the ad server.

89. Merriman061's system operates in a manner consistent with Figure 9.2 from Zeff that I described above. EX1008, 104. When the user's browser requests a web page from the affiliate website, the website provides "all of the information available" for the page "except for one or more advertising objects such as banner advertisements." EX1004, 3:30-34. Instead of sending the ad, "the affiliate's web server sends back a link including an IP address for a node running an advertiser server process 19 as well as information about the page on which the advertisement will be displayed." *Id.*, 3:35-38.

90. The link may be "a hypertext markup language (HTML) tag." EX1004, 3:39-40. A POSITA would have understood an HTML tag to be the element defined by RFC 1866. *See* EX1011, 34. This element "refers to an image or icon via a hyperlink." *Id.* The element includes a SRC ("source") attribute that "specifies the URI of the image resource." *Id.*, 35. A "URI" is a Uniform Resource Identifier which "is a formatted string that serves as an identifier for a resource, typically on the Internet." URIs commonly "include Uniform Resource Locators (URLs)." *Id.*, 9.

91. The user's browser then transmits a request for an ad using the link (e.g., the tag/element) to the ad server, and includes with the request:

- (i) the user's IP address, (ii) a cookie if the browser 16 is cookie enabled and stores cookie information, (iii) a substring key indicating the page in which the advertisement to be provided from the server is to be

embedded, and (iv) MIME header information indicating the browser type and version, the operating system of the computer on which the browser is operating and the proxy server type.

EX1004, 3:44-52. In response to this request, the ad server selects the appropriate ad and sends the ad to the user's browser, which displays the ad in combination with the web page content received from the affiliate web server. *Id.*, 3:59-63.

92. To select which advertisement to display to the user, the ad server "first attempts to identify the user." EX1004, 5:10-12. The ad server may identify the user using the cookie identifier received with the request:

[A]ny incoming request for an image or a multimedia object is examined to determine[] the IP address of the requesting browser. The advertising server then notes whether a cookie was received in the MIME heading of the request. From these two pieces of information, a user identification is determined. If a cookie was detected, then the cookie contains the user's identification number that can be accessed in the database.

Id., 5:13-20. If the request does not include a cookie, the ad server instructs the user's browser to create a new cookie. EX1004, 5:21-29.

93. Once the ad server identifies the user, "the ad server obtains from a database all of the information known about the user including[:]"

the user's geographic location, the domain type (commercial educational, governmental, the Internet service provide[r]), the organization type where the user works (for example a SIC code), the

company size, the number of employees in that company, the particular types of advertisements that the user has clicked on by SIC or other appropriate coding and the number of times that the user has been exposed to each advertisement currently in the system.

EX1004, 5:50-59. In addition, “the specific type of user and domain name information profiled and used as matching criteria may include other or different criteria.” *Id.*, 8:54-56. The ad server compares the targeting criteria of available ads to the information about the user and selects an ad to return to the user. *Id.*, 5:64-6:59. The ad server “stores the fact that the advertisement was sent to the user by storing that information in the database based upon the user ID.” *Id.*, 6:63-65.

2. Jaye (EX1005)

94. Jaye, U.S. Patent No. 6,415,322, is entitled “Dual/Blind Identification.” Jaye was filed on February 26, 1999, and issued July 2, 2002. EX1005. I understand that Jaye is prior art because its filing date predates the December 13, 1999 effective filing date of the challenged patent. I form no opinion as to whether Jaye is entitled to an earlier priority date.

95. Jaye is assigned on its face to “Engage, Inc.” EX1005. I understand that “Engage, Inc.” is related to the “Engage” I referenced above in the Technological Background.

96. Jaye initially notes that “a user accessing the Internet jumps from server to server” but “it is extremely difficult...for a first vendor on a first server to know

that a user who accessed a particular one of the first vendor's pages also accessed a particular page of a second vendor on a second server" because "there is no built in mechanism on the Internet for globally identifying users so that vendors on different servers can share such information." EX1005, 1:39-47. Jaye does recognize, however, that there are "instances where a group of cooperating vendors have adopted a cross-server user identification scheme that globally identifies the users to the vendors." *Id.*, 1:47-50.

97. Jaye describes a "distributed identification scheme" in which individual local servers provide local profiles to an enterprise server. EX1005, 2:12-14. The enterprise server compiles "a global user profile from local user profiles generated by the local servers." *Id.* The enterprise server may share the global user profiles it generates using this scheme with advertisers. Such profiles are "useful for vendors who sell items through the Internet." *Id.*, 1:17-20, 2:6-10.

98. Jaye's distributed identification scheme uses a system including "a group of servers" that may be accessed by a user via a client, the group of servers including "at least one local server and an enterprise server in communication with the local server." *Id.*, 2:15-17, 4:5-23. Jaye illustrates the various entities involved in its profiling system in Figure 7 (annotations added, showing local servers 15 and 17 in red, the enterprise server 16 in green, and the client 12 in blue):

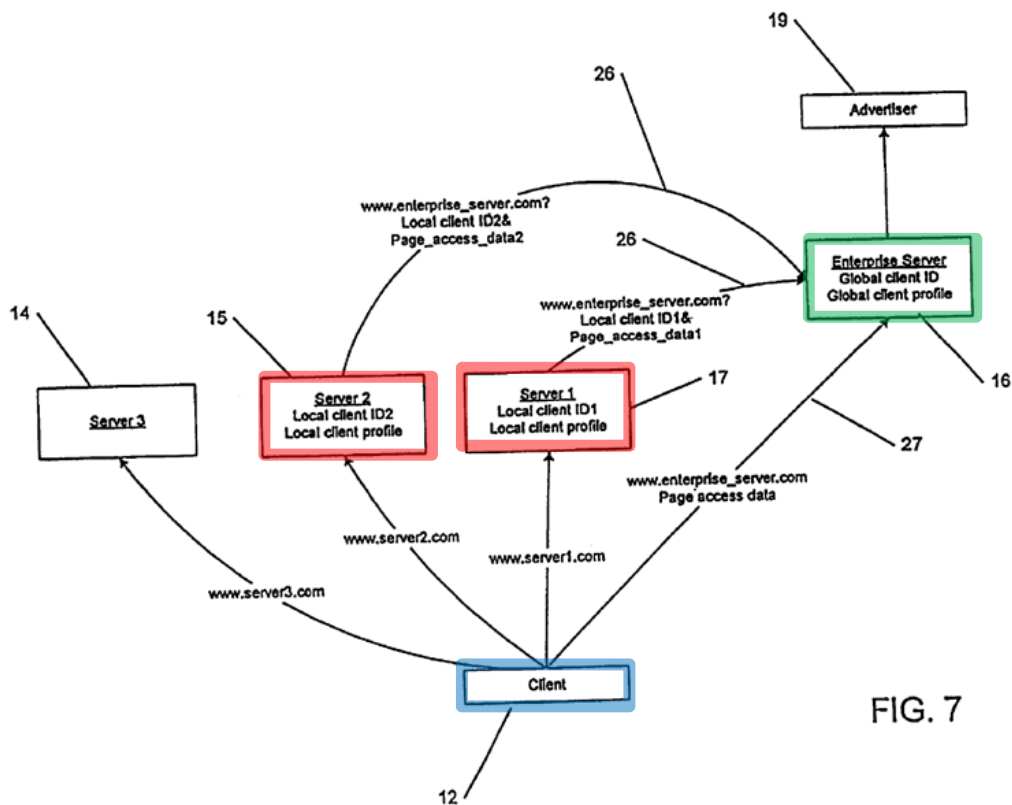


FIG. 7

EX1005, Fig. 7. A POSITA would have recognized that the **local servers** are web servers providing web sites. Jaye identifies the servers in Figure 7 using URLs for sample websites, e.g., www.server1.com, www.server2.com. Jaye also describes the local servers as having other characteristics possessed by web sites, such as providing HTML pages in response to requests from the client. *Id.*, 4:64-5:11. The **enterprise server** may also be a web server, as it is simply a designated one of the local servers. *Id.*, 4:24-31. A POSITA also would have recognized that the **client** includes a web browser as the client “may be any one of a variety of conventional,

commercially available, hardware and software combinations configured to access Internet servers.” *Id.*, 4:7-9; 6:47-56.

99. When a user uses the client to visit web pages of a local server, the local server “establishes a local ID for the user” and a “local user profile based on user interaction with the local server.” EX1005, 2:18-21. The local user profile “can store a list of the web pages viewed by the user while visiting the server 15 and other information about the content of these web pages.” *Id.*, 9:42-45. “Then, at a selected time, such as once a day,” the local server “upload[]s the contents of the local database of server 15 to a global database of the enterprise server.” *Id.*, 10:29-34.

100. The enterprise server “links the local ID to a global ID assigned to the user by the enterprise server and records in a database the information about the local user profiles to form the global interest profile of the user.” EX1005, 2:21-24. Thus, “[t]he enterprise server 16 combines the information for each user so that, for example, it is possible to correlate accesses by a particular user of Web pages on the local server 15 with accesses by the same user of Web pages on the local server 17.” *Id.*, 5:6-11. “However... it is the enterprise server 16, rather than the local servers 15 and 17, that correlates the cross-server information on a per user basis.” *Id.*, 5:11-14.

101. Jaye discloses two “conventional” techniques by which a local server can send profile information of a user to enterprise server. Both involve forcing the

client to transfer from the local server to the enterprise server, and thereby causing the client to pass profile information to the enterprise server, which Jaye also illustrates in Figure 2.

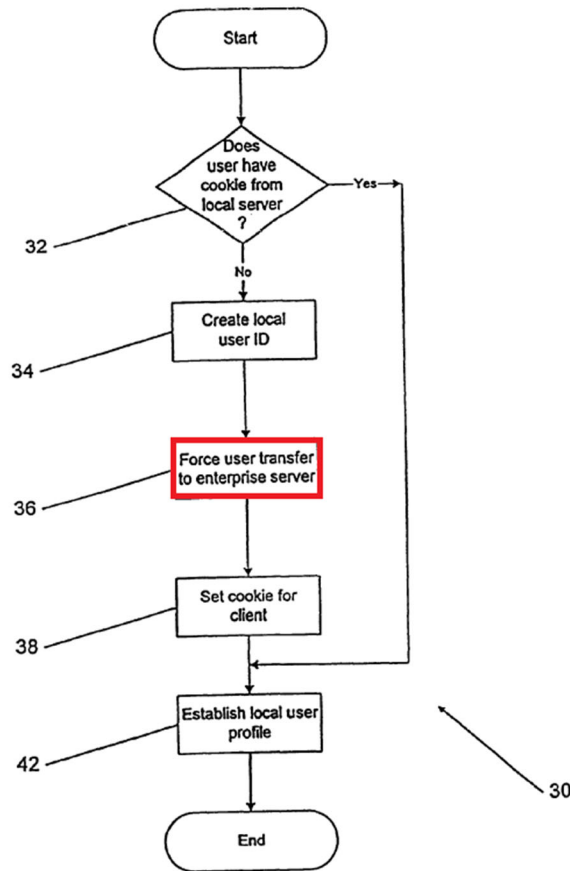


FIG. 2

EX1005, Fig. 2, 6:32-7:6.

102. For the first technique, “the local server may use conventional techniques to insert a special URL into the HTML page requested by the client” which “points to the enterprise server 16 and calls for insertion of a graphics image having zero width and height.” EX1005, 6:36-40. “The special URL may also

contain additional information, such as information identifying the local server and information indicating the local ID of the user.” *Id.*, 6:40-43. Jaye includes an example of the special URL: “http://enterprise_server_id/go?local_server_id&client_information.” *Id.*, 6:43-46.

103. A POSITA would have understood that Jaye’s first technique is redirecting the browser from the local server to the enterprise server using an image tag, similar to the approach disclosed in Merriman061. In this case, the URL used in the image tag includes an ID identifying the local server (“local_server_id”) and additional information about the client. These IDs are encoded in the URL after the question mark symbol (“?”), which signifies that the IDs are query parameters directed to the web server receiving the request. EX1010, 19 (defining “?” as indicating a query); EX1009, 213 (example URL containing query parameters). When the user’s browser requests the file using this URL, the enterprise server extracts the profile information from the URL and responds by providing the browser with the image having zero width and height.

104. Jaye’s second technique for sending the server’s local ID of a user to an enterprise server “involves providing an HTTP response message [from the local server] to the browser which forces the browser to look for a different URL.” EX1005, 6:48-50. Here, the local server provides a response message to the browser the includes the HTTP “Redirection” status code and the location of the enterprise

server. *Id.*, 6:48-53. For example, the response message may be “location: server_URL comments.” *Id.*, 6:50-54.

105. A POSITA would have understood that Jaye’s second technique is using the “Redirection” status code, which “indicates that further action needs to be taken by the user agent in order to fulfill the request.” EX1010, 61. In Jaye’s example URL, the “location: server_URL” describes the location of the enterprise server to which the client should make the redirected request. EX1005, 6:54, EX1010, 57-61. A POSITA would have understood that this URL can pass profile information to the enterprise server in the same manner as the first technique.

106. Jaye refers to the second technique using “redirection” as an alternative to the first technique. EX1005, 6:47-48. However, a POSITA would have understood both of techniques to be redirections according to the plain and ordinary meaning of this term because both techniques instruct the browser to obtain information from a different location. Instead, Jaye is merely indicating that the second technique uses the HTTP “Redirection” status code described by RFC 2616 (EX1010, 57-61) while the first technique does not.

3. Rosenberg (EX1006)

107. Rosenberg, U.S. Patent No. 6,073,241, is entitled “Apparatus and Method for Tracking World Wide Web Browser Requests Across Distinct Domains Using Persistent Client-Side State.” Rosenberg was filed on August 29, 1996 and

issued on June 6, 2000. I understand that Rosenberg is prior art because its filing date predates the December 13, 1999 effective filing date of the challenged patent. I form no opinion as to whether Rosenberg is entitled to an earlier priority date.

108. Rosenberg discloses that content on the World Wide Web, such as “news, product reviews, and literature,” is often “free to the user,” with its cost being “underwritten by advertising.” EX1006, 1:32-35. For advertisers, it is desirable to use tracked activity information to “learn as much as possible about the” user, “to know audience demographics...[in order] to more accurately choose appropriate advertisements.” *Id.*, 1:35-40. However, while individual servers can track user activity on their site using cookies, they cannot read cookies set by servers in other domains due to security restrictions, which makes it difficult to use cookies to track users’ behaviors across the Internet. *Id.*, 2:5-3:3.

109. Rosenberg describes a technique in which servers observe a common protocol to track web browsers “across distinct domains.” EX1006, 1:7-11, 3:11-30, 4:52-64, 7:47-58, 7:62-8:11. A database server collects profile information contributed by the other servers, and “each server” in the group can access the collected information. *Id.*, 5:12-14, 7:47-58. For example, a server can access and “interpret[] this information” to “return a customized page to the client computer 22.” *Id.*, 7:10-13. This allows for “editors and advertisers to tailor their content to users.” *Id.*, 3:4-8.

110. Rosenberg illustrates the various entities involved in its user tracking system in Figure 1 (reproduced below, annotations added).

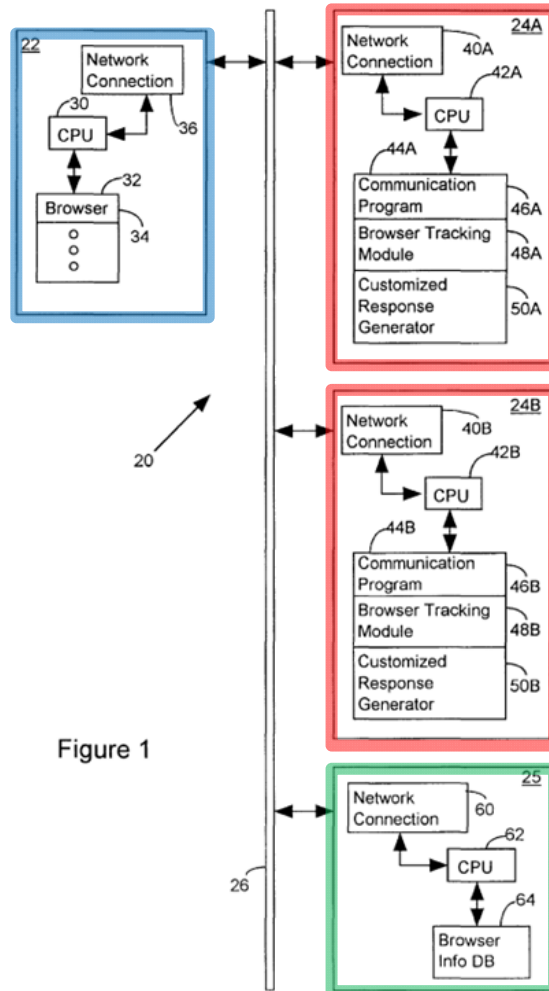


Figure 1

EX1006, Fig. 1. Rosenberg’s system includes “at least one client computer 22” (shown in blue above), “at least one server computer 24[A and B]” (red), and a “server computer 25 that is used as a database server” (green). *Id.*, 4:2-6, 4:19-21.

111. In operation, a client browser operating on the client computer requests a page from a first server. EX1006, 5:1-9. The first server determines whether it “has set a cookie for this browser” and, if not, “generates a unique identification

value” for the browser. *Id.* The first server provides the unique identification value to the database server, and the database server creates a new database entry for the browser identified by the unique value. *Id.*, 2:15-17, 5:9-16, 7:66-67.

112. The first server also sets a cookie containing the identifier in the client browser and instructs the browser to convey the identifier to the other cooperating servers. EX1006, 5:17-24. This instruction causes the browser to generate requests containing the identifier, and send the requests to the other servers, which thereafter use the identifier in their respective cookies for that browser. *Id.*, 5:28-54. Thus, the cooperating servers and the database server use the same identifier for the client browser, which allows the browser to be tracked across multiple server domains. *Id.*, 5:55-6:58; 7:46-61.

113. The first server instructs the browser to convey the identifier to a second server by returning a page to the browser that includes within it “HTML that references a specific URL on another server computer.” EX1006, 8:12-15. “The URL has the form: ‘http://B/B-correlate?’i’, where i’ is an encoding of the identifier ‘i’.” *Id.*, 8:15-18. The HTML causes the browser makes a request to the URL at the second server, and the second server “extracts the query string (the data after the ‘?’, in this example, the value ‘i’) from the request and decodes it to yield i.” *Id.*, 8:27-30. The second server then responds to the request by setting a cookie at the browser

including the identifier. *Id.*, 8:31-33. Therefore, the first and second cooperating servers use the same cookie identifier for the browser.

114. Rosenberg describes “several ways in which an HTML reference to another site can be embedded in a page.” EX1006, 8:34-35. One way is to use an “HTML cross-site reference with a frame tag,” such as “<FRAME SRC=‘http://www.search.com/cnet.cgi?3676778’>,” where “3676778” is the unique identifier. *Id.*, 8:56-61. Another way is to use an “HTML cross-site reference with an HTML form submission tag,” such as “<FORM METHOD=GET ACTION=‘http://www.search.com/cnet.get.cgi?3676778’>.” *Id.*, 8:66-9:6. A third way is an “HTML cross-site reference with an image tag,” such as “.” *Id.*, 9:8-17. A fourth way is to use an “HTML cross-site reference statement with an HTTP redirect command” such as “Location: http://B/B-correlate?a”. *Id.*, 9:18-24. A POSITA would have understood and considered all these techniques to be redirections according to the plain and ordinary meaning of this term because they all instruct the browser to obtain information from a different location.

4. Merriman154 (EX1007)

115. Merriman154, U.S. Patent No. 8,566,154, is entitled “Network for Distribution of Re-Targeted Advertising.” Merriman154 was filed on February 26, 2002, and issued October 22, 2013. EX1007. Merriman154 is a continuation of

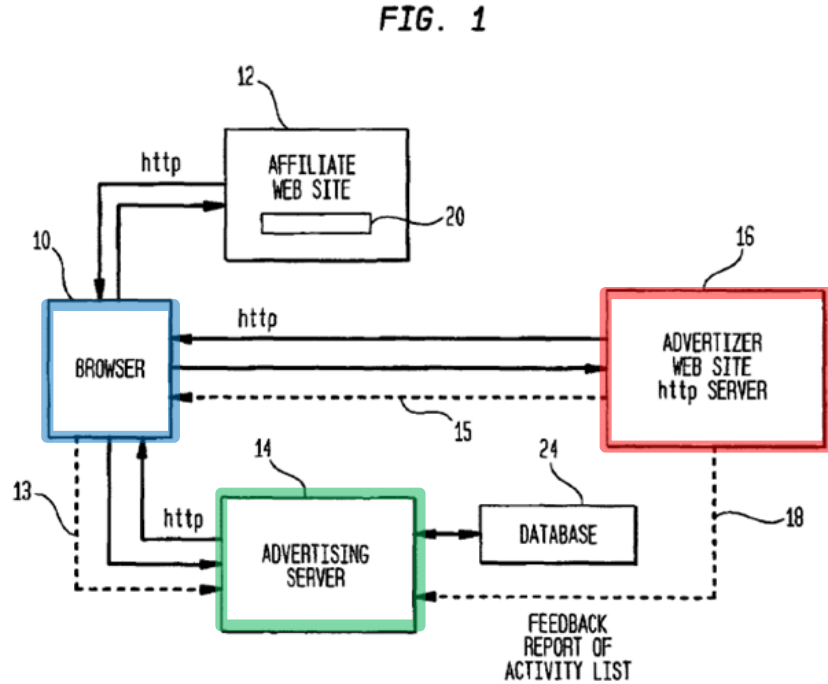
Application No. 09/362,008, filed on July 27, 1999 and a continuation-in-part of Application No. 09/094,949, filed on June 15, 1998. *Id.* Merriman154 also claims the benefit of three provisional applications: 60/095,146, filed on August 3, 1998; 60/048,940, filed on June 16, 1997; and 60/049,877, filed on June 17, 1997. *Id.*

116. I understand Merriman154 is entitled to a priority date of at least July 27, 1999 by virtue of being a continuation of Application No. 09/362,008 filed on that date. I understand that Merriman154 is thus prior art because its priority date predates the December 13, 1999 effective filing date of the challenged patent. I form no opinion as to whether Merriman154 is entitled to an earlier priority date.

117. Merriman154 is assigned on its face to Google Inc. EX1007. I understand Merriman154 was initially assigned by its inventors, Dwight A. Merriman and Kevin J. O'Connor, to DoubleClick Inc. in 1999. EX1017, 2. I understand that "DoubleClick, Inc." is related to the "DoubleClick" I reference above.

118. Merriman154 relates to a type of targeted advertising it calls "re-targeting" in which "a new follow up (re-targeted) advertisement from a specific advertiser who targeted that viewer previously, is selected for that viewer based on the viewer's own past behavior at that specific advertiser's web site." EX1007, 3:30-34.

119. Merriman154 illustrates the various entities involved in its targeted advertising system in Figure 1.



EX1007, Fig. 1. Merriman154’s system includes a **user browser 10**, and “at least one affiliate web site 12,” who is “a publisher or other content provider having advertising space 20 to fill,” an “**advertising server 14**,” and “**advertiser web sites 16**.” *Id.*, 4:27-39, 5:9-11. When a user uses the **browser 10** (blue) to access the **advertiser web site 16** (red), the activities of the user at that site are communicated back to the **advertising server 14** (green) via a feedback path. *Id.*, 4:39-43.

120. The “feedback path 18 may be achieved by a number of alternative mechanisms.” EX1007, 4:44-45. For example, “bulk feedback” may be performed

in which “the advertiser periodically emails the information directly, or transfers it in bulk form in a file transfer operation” to the advertising server. *Id.*, 4:45-50.

121. Alternatively, “feedback of individual activities of the user at [the] advertiser site 16 may be communicated in real time back to the advertising server 14 using by spotlight tags.” EX1007, 4:51-54.

A spotlight tag is a minimal graphic (e.g., a one pixel image) containing a redirect message back to the advertising server 14. Spotlight tags are placed on web pages by the advertiser and contain other imbedded information such as information identifying the specific advertiser web page (as for example, identifying a purchase confirmation page stating “thank you for your order” etc.)

Id., 4:54-61. “When the user requests (i.e., visits) an advertiser page containing a spotlight tag, a reply message 15 redirects the users [*sic*, user’s] browser 10 back to the advertising server 14 via request 13 to access the minimal one pixel graphic image.” *Id.*, 4:62-65. This reply message “provides real time reporting of user activities while the user is in the advertising [*sic*, advertiser] web site 16.” *Id.*, 4:66-5:2; 5:38-49. The advertising server 14 subsequently uses the activities reported by the advertiser web site 16 to provide a re-targeted ad to the user on the affiliate website 12. *Id.*, 6:5-19.

C. General Motivations to Combine the Prior Art References

1. Merriman061 and Jaye

122. In my opinion, a POSITA would have been motivated to combine Merriman061 and Jaye. Both references relate to targeted advertising on the Internet and are thus analogous to each other and the challenged patent. *See, e.g.*, EX1004, 1:8-11 (“This invention...relates to the targeting of advertisements delivered over networks such as the Internet.”); EX1005, 14:22-25 (“The enterprise server may parse the global user profile and release to an interested party, such as an advertiser, only those portions that are of interest to the advertiser and/or to which the advertiser subscribes.”).

123. Furthermore, Merriman061 explains that “it is considered highly desirable to target advertisements to the appropriate potential customer base.” EX1004, 1:13-15, 1:52-53. Merriman061 accordingly discloses techniques for gathering profile information about users and using the profile information to target ads to the users. *See, e.g.*, EX1004, Abstract, 1:64-2:3, 2:7-30, 4:44-5:7, 5:50-5:60, 7:46-8:30, 8:39-46. Jaye, in turn, recognizes the importance of collecting profile information for targeted advertising. *See, e.g.*, EX1005, Abstract, 1:18-38, 2:6-10, 14:22-25. Jaye specifically discloses techniques for consolidating profile information from local web sites visited by users into more comprehensive global profiles that may be shared with “interested outside parties, such as advertisers.”

EX1005, 2:6-8, 2:15-3:40, 5:5-19, 6:1-7:45, 8:40-10:41. A POSITA in possession of Merriman061 therefore would have been motivated to incorporate Jaye's techniques for collecting and combining profile information to enhance and improve Merriman061's ad targeting by providing more information about the users to whom the ads are targeted. I provide additional motivations to combine the references below.

2. Rosenberg and Merriman154

124. In my opinion, a POSITA would have been motivated to combine Rosenberg and Merriman154. Both references relate to targeted advertising on the Internet and are thus analogous to each other and the challenged patent. *See, e.g.*, EX1006, 3:4-8 ("passive tracking of a web browser...would allow editors and advertisers to tailor their content to users"); EX1007, 4:3-4 ("As a result of collecting user activity lists, the data is mined for prospects for future advertisements.").

125. Rosenberg specifically discloses a technique that "allows a web browser to be passively tracked so that content preferences and interests associated with the individual using the web browser can be identified." EX1006, 3:25-37, 4:52-5:54, 7:47-61, 7:62-9:24. Rosenberg's technique involves web servers sending profile information to a database server. EX1006, 4:52-5:62, 7:46-9:24. Merriman154 likewise discloses techniques by which web servers send profile information to a database in real time, for purposes of determining preferences and

interests associated with users, and a specific type of targeted advertising called “retargeting.” EX1007, 3:20-46, 4:3-10, 4:26-5:8, 5:33-54. A POSITA in possession of Rosenberg would have been motivated to incorporate Merriman154’s techniques for collecting profile information and using the information for targeted advertising to enhance and improve Rosenberg’s profile collection and to improve Rosenberg’s ad targeting by providing real time profile information and enabling retargeting. I provide additional motivations to combine the references below.

IX. INVALIDITY

A. Claims 1, 3-6, 10-11, 13-16, 20-21, 23-26, and 30 of the ’904 patent are obvious over Merriman061 and Jaye⁸.

1. Claim 1

[1.pre] “An automated method of collecting profiles of Internet-using entities, the method comprising:”

126. To the extent the preamble of claim 1 is limiting, Merriman061 discloses it. Merriman061 describes an advertising network that implements a method for “targeting the delivery of advertisements over a network.” EX1004, Abstract, 1:8-11, 2:6-7, 14:2-3. Merriman061’s method involves automatically collecting profiles of Internet-using entities.

⁸ Patent Owner disclaimed claims 2, 12, and 22 of the challenged patent. EX1001, 16.

127. The users to whom Merriman061 targets ads are “Internet-using entities.” Specifically, “[w]hen a user using a browser accesses or ‘visits’ a web site of an affiliate, an advertisement provided by the advertisement server 19 will be superimposed on the display of the affiliate’s web page displayed by the user’s browser.” EX1004, 2:65-3:1. A POSITA would have recognized that such users are “Internet-using entities” because the users use browsers to visit web sites on the Internet. *See, e.g.*, EX1004, 4:12-15 (“the user is a computer on an IP network using a browser, the affiliate web sites are web pages of affiliates located somewhere on the Internet and the ad server is a particular node on the Internet”).

128. The targeted advertising method disclosed in Merriman061 includes a method of collecting profiles of the users. “For each user,” Merriman061 collects information including “a user identification, IP addresses, ...the particular advertisements seen, ...[and] the number of times each such advertisement is seen.” EX1004, 4:44-51. The collected information may also include “a substring key indicating the page in which the advertisement to be provided from the server is to be embedded” and “MIME header information indicating the browser type and version, the operating system of the computer on which the browser is operating.” EX1004, 3:41-52. Merriman061 stores this information in a database. EX1004, 4:44-51.

129. A POSITA would have recognized that the collected information for a user is a “profile” for that user, and Merriman061 thus collects profiles of Internet-using entities. *See, e.g., id.*, 8:51-56 (“while specific user and domain profile information and matching criteria are discussed, it will be obvious to those of ordinary skill in the field that the specific type of user and domain name information profiled and used as matching criteria may include other or different criteria.”).

130. The method of collecting profiles disclosed by Merriman061 is an “automated method.” It is performed automatically when a user visits a website. *See, e.g., id.*, 3:41-52 (user’s browser automatically transmitting profile information to advertiser server), 4:25-28, 5:13-28, 6:17-19 (“For each user, data is kept about the number of times that a user has seen a given advertisement based upon the user ID.”), 7:45-8:30 (“Derivative Profile Process”).

131. Jaye also discloses an “automated method of collecting profiles of Internet-using entities.” Jaye discloses “a process,” which a POSITA would have understood to be a method, “for compiling anonymously a global user profile from local user profiles generated by the local servers.” EX1005, 2:12-14.

132. Jaye discloses compiling information for a plurality of users. EX1005, 5:5-6 (“The local servers 15 and 17 upload information about users’ page accesses to the enterprise server 16”). The users about whom the profiles are compiled are “Internet-using entities.” Specifically, the users are people who use client browsers

to visit web servers on the Internet. EX1005, 4:7-10 (“The client 12 may be any one of a variety of...hardware and software combinations configured to access Internet servers by any one of a variety of suitable means”), 4:64-66 (“The client 12 requests HTML pages from the servers 15-17 that, when displayed, may include user-actuatable links to other HTML pages”), 4:48-50 (“The local servers 15 and 17 can be accessed by users in the same manner that other conventional Internet servers are generally accessible”), 6:48-51 (“Redirection involves providing an HTTP response message to the browser which forces the browser to look for a different URL”).

133. Jaye specifically states that the profiles of the users are “collected.” EX1005, 9:5-8 (“The process for building a user profile begins with the step of collecting useful information about the interest behavior of a user 12 looking at different content stored at an exemplary local server 15”), 8:46-49 (“This collected information can be used to characterize the user’s interest in a given interest category and to determine what available content would be of interest to the user”), 10:13-15 (“Although data collection has been described for a user’s activities at one web site, it will be understood that the data collection process 70 can occur on a number of different web sites”).

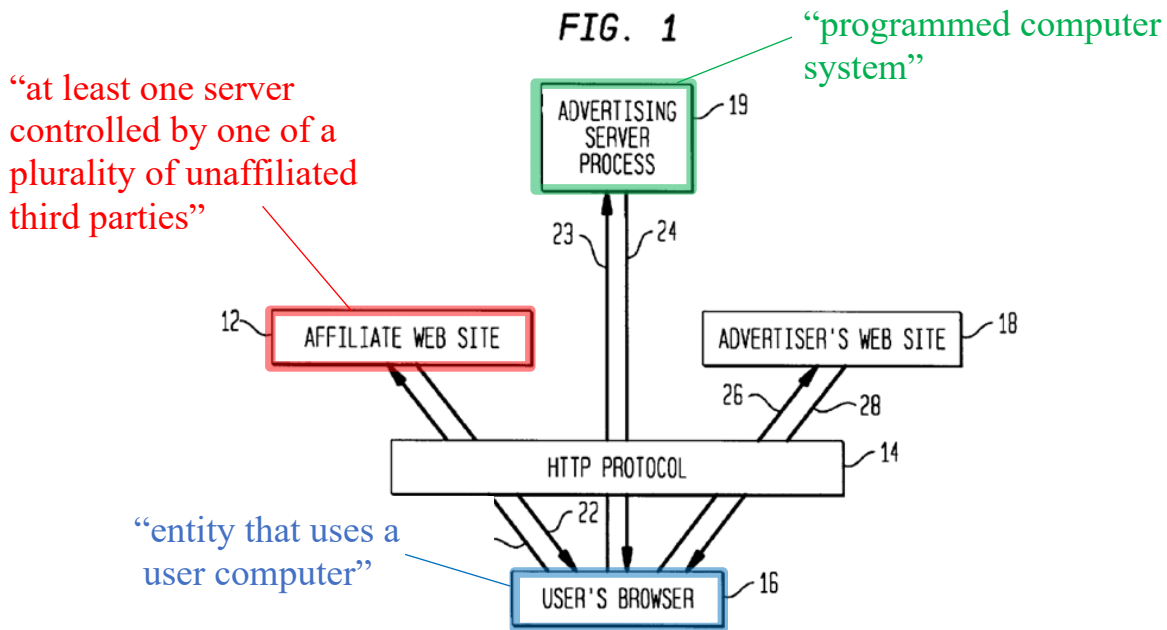
134. Jaye’s method of collecting profiles is “automated.” Jaye explains that the “method steps of the invention can be performed by a programmable processor executing a program of instructions to perform functions of the invention.” EX1005,

13:47-50. A POSITA would have understood from this description that the programmable processor executing a program of instructions is performing an automated method.

[1.a(i)] “(a) electronically receiving at a programmed computer system coupled to a global computer network, from at least one server controlled by one of a plurality of unaffiliated third parties, an electronically URL-redirectioned partial profile of an entity that uses a user computer coupled to the global computer network to access a website, which partial profile [...] contains at least one profile attribute related to the entity...”

135. Merriman061 alone and in combination with Jaye discloses this limitation.

136. Merriman061 teaches the basic structure, including the claimed “programmed computer system coupled to a global computer network,” “at least one server controlled by one of a plurality of unaffiliated third parties,” and “an entity that uses a user computer coupled to the global computer network to access a website.” These entities are shown in Figure 1:



EX1004, Fig. 1.

137. The illustrated “advertising server process” (19) is a “programmed computer system coupled to a global computer network.” Merriman061 explains that the “advertising server process” is “an advertisement (ad) server web site 19.” EX1004, 2:60-61. The ad server may “comprise one or more servers” “implemented on one computer platform,” and performs various processes for which a POSITA would have understood it is programmed, including an “advertising server process, reporting process, derive profile process and management process.” *Id.*, 4:20-24; 9:8-16. The ad server is coupled to the Internet, which a POSITA would have understood is a global computer network. EX1004, 3:15-18 (“the computers supporting the...advertising server process will be at entirely different nodes on the Internet”), 4:15 (“the ad server is a particular node on the Internet”).

138. Merriman061 also illustrates an “affiliate web site” which is “at least one server controlled by one of a plurality of unaffiliated third parties.” The web site is provided by a web server which is at least one server. EX1004, 3:28-35 (“the affiliate’s web server...”), 4:16-17 (“The affiliates...may be actual dedicated web servers”).

139. A POSITA would have understood that the web server providing the web site is controlled by a publisher that is one of a plurality of publishers. *See* EX1008, 26 (“In the sellers’ camp, the key players are the publishers, who produce the sites with advertising space to sell”), *id.* (“Today there are more than a quarter-million Web sites, and over a thousand of these accept advertising...And the top publishers are beginning to earn enough advertising revenue to near profitability”).

140. A POSITA also would have understood that the plurality of publishers are third parties to the entity that operates the ad server. Zeff explains that publishers and ad networks are separate entities. EX1008, 28 (“To assist sites in generating revenue from advertising, ad networks have formed to sell advertising for publishers who participate in their networks”). Thus, the publisher that controls the affiliate website server is “one of a plurality of...third parties” as claimed.

141. Although Merriman061 refers to website 12 as an “affiliate web site,” a POSITA would have understood that the website publisher is an “unaffiliated third party” to the entity controlling the ad server. Merriman061 uses the term “affiliate”

to refer to an entity that “for a fee contract[s] with the entity providing the advertisement server” to “permit third party advertisements to be displayed on their web sites,” so that when “a user using a browser access or ‘visits’” the website, “an advertisement provided by the advertisement server 19 will be superimposed on the display of the affiliate’s web page displayed by the user’s browser.” EX1004, 2:59-3:4. A POSITA would have understood from this description that the ad server is controlled by an ad network company, such as DoubleClick, while the website is controlled by the publisher, where the website publisher contracts with the ad network company for the ad server to serve ads on the website. The publisher controlling the affiliate website is thus not affiliated with the entity controlling the ad server because it engages in an arm’s length transaction to contract for ad delivery on the publisher’s site.

142. My interpretation of “unaffiliated third parties” is consistent with the plain-and-ordinary meaning of the term and with AlmondNet’s proposed construction of the same term in the parent ’582 patent as “a party not having common ownership with the party or parties that control said programmed computer system.” *See* EX1012, 18-24. There is no suggestion in Merriman061 that the party controlling the affiliate website has common ownership with the party that controls the ad server. Nor would have a POSITA expected such a relationship, given that Zeff explains that website publishers and ad networks are separate entities. *See, e.g.,*

EX1008, 39 (“An advertising network sells advertising for a group of publishers.”). The server providing Merriman061’s affiliate website is thus “at least one server controlled by one of a plurality of unaffiliated third parties,” despite Merriman061 referring to it as an “affiliate.”

143. Merriman061 further discloses “an entity that uses a user computer coupled to the global computer network to access a website.” Merriman061 describes “a user browsing on the Internet” who “accesses an affiliate’s web site.” EX1004, 3:6-7. The “user operates a web browser...on a computer or PDA or other Internet capable device.” EX1004, 3:24-29. The user is thus an entity that uses a computer coupled to the global computer network, the Internet, to access a website.

144. Merriman061 further “electronically receiving at a programmed computer system coupled to a global computer network, from at least one server controlled by one of a plurality of unaffiliated third parties, an electronically URL-rediacted partial profile of an entity that uses a user computer coupled to the global computer network to access a website, which partial profile [...] contains at least one profile attribute related to the entity.” In particular, Merriman061 discloses electronically receiving, at the ad server (“a programmed computer system”) from an affiliate website (“at least one server controlled by one of the plurality of unaffiliated third parties”), an electronically URL-rediacted partial profile of a user (“entity”) that uses a user computer coupled to the Internet to access the affiliate

website, where the partial profile contains at least one profile attribute related to the user.

145. Specifically, when a user accesses the affiliate web site, “the user’s browser generates an HTTP message 20 to get the information for the desired web page,” whereupon the web site “transmits one or more messages back 22 containing the information to be displayed by the user’s browser” except for “one or more advertising objects such as banner advertisements” which “do not reside on the affiliate’s web server.” EX1004, 3:5-15, 3:24-38. The messages include “a link including an IP address for a node running an advertiser server process 19 as well as information about the page on which the advertisement will be displayed.” *Id.*, 3:35-38. The link “may be a hypertext markup language (HTML) tag, referring to, for example, an inline image such as a banner.” *Id.*, 3:38-41.

146. A POSITA would have understood that the affiliate website sending a message to the user’s browser that includes “a link including an IP address” of the ad server, where the link “may be a hypertext markup language (HTML) tag,” is an electronic URL redirection. The affiliate website sends the message electronically via the Internet. Further, a POSITA would have understood that the message instructs the user’s browser executing on the user computer to request an image from a URL specified by the SRC attribute of an element, where the URL specifies the location of the image on the ad server. *See* EX1011, 9, 34-35.

Additionally, a POSITA would have understood the message from the affiliate website to be a “electronic URL redirection” because it instructs the user’s browser to [transmit a request 23](#) to obtain the image from a different location, i.e., the location on the ad server referenced by the URL. This understanding is consistent with the plain-and-ordinary meaning of the term and with AlmondNet’s construction of the term “URL redirection” used in the parent ’582 patent as meaning “obtaining certain information for at least a portion of an accessed page / site from a different location.” EX1012, 33-37. It is also consistent with the ’904 patent, which refers to “redirecting a portion of the visitor’s page to [a] server.” EX1001, 4:4-10, 12:17-20.

147. Merriman061’s ad server electronically receives an electronically URL-redirected partial profile of the user from the affiliate web server because of the URL redirection caused by the tag in the link the user’s browser receives from the affiliate web server. The ’904 patent defines a profile as “[a] collection of attributes that describe a person or an organization or any other entity that can be described by a combination of data.” EX1001, 2:38-40. Moreover, profile attributes include “attributes that enable the identification of the entity described by the profile such as name, address, URL, [and] cookie” as well as “information learned about the entity described by the profile from a communication protocol such as the

information learned about the visitor to a web site from its http header.” EX1001, 2:51-59. “[A]ll profiles are, by definition, partial.” EX1001, 7:53-54.

148. Upon receiving the link from the affiliate web server, the “user’s browser 16” transmits “a message 23 using the received IP address to access such an object indicated by the HTML tag from the advertisement server 19.” EX1004, 3:41-44. The message 23 includes information about the user such as “(i) the user’s IP address, (ii) a cookie if the browser 16 is cookie enabled and stores cookie information, (iii) a substring key indicating the page in which the advertisement to be provided from the server is to be embedded, and (iv) MIME header information indicating the browser type and version, the operating system of the computer on which the browser is operating and the proxy server type.” *Id.*, 3:35-52.

149. This information is profile information containing at least one profile attribute related to the user (the entity), and is a partial profile, according to the definition in the ’904 patent and knowledge of a POSITA. For example, the information includes attributes that enable the identification of the user, such as the IP address and cookie, and information learned about the entity described from the header, such as the browser type and version, and computer operating system. The information also describes the person by including “a substring key indicating the page in which the advertisement to be provided from the server is to be embedded,” which indicates that the user used the browser to visit that page.

150. A POSITA would have understood that the ad server receives the electronically URL-redirected partial profile of the user “from” the affiliate web server because the affiliate web server uses the redirect to cause the user’s browser to provide the profile information to the ad server. *See* EX1004, 2:19-26 (“the affiliated page’s encoding includes an embedded reference...[t]hat causes the user’s browser to contact the” ad server). However, Merriman061 does not disclose the details of how ad server receives profile information via the URL redirection.

151. Jaye discloses that when a client requests a webpage from a “local server 15,” the local server 15 may redirect the client to an “enterprise server 16.” *See* EX1005, 2:31-40, 5:5-9, 6:32-46. To do so, Jaye’s local server “forces a transfer” of the client “to the enterprise server 16” by “insert[ing] a special URL into the HTML page requested by the client 12” to retrieve an image having “zero width and height.” *Id.*, 6:32-46; EX1009, 268-69 (referring to the enterprise server as a “global server”). Jaye illustrates this process in Fig. 2:

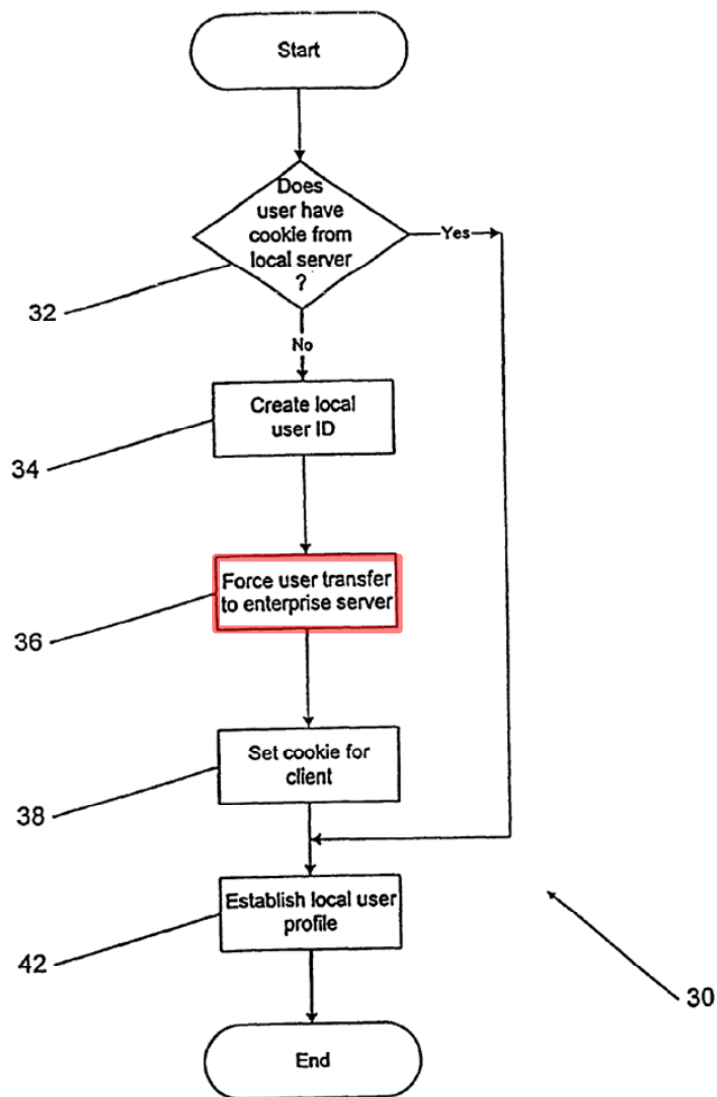


FIG. 2

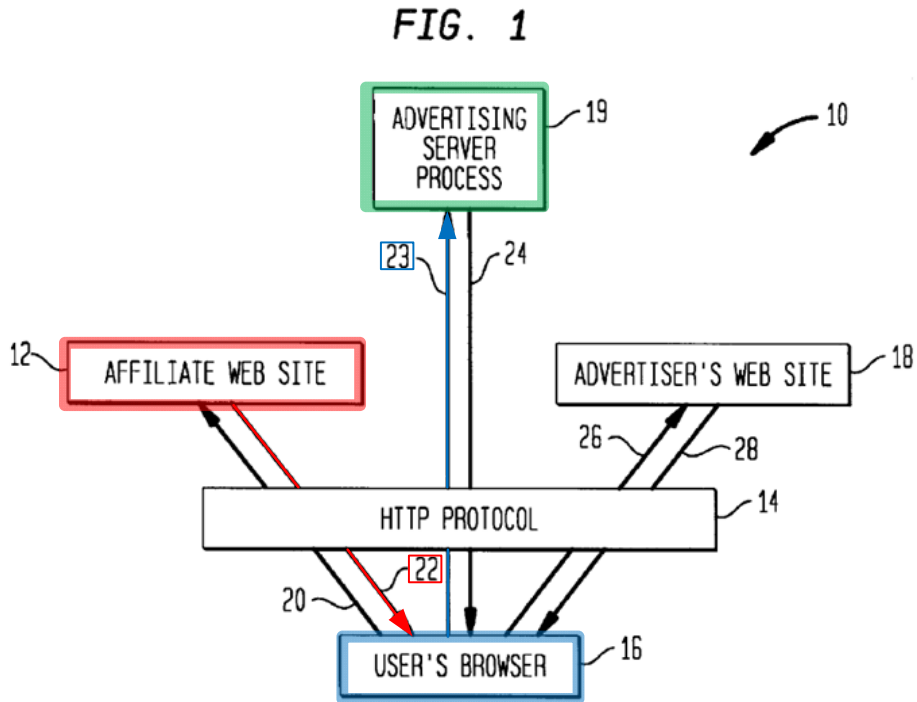
EX1005, Fig. 2.

152. A POSITA would have understood that Jaye here describes an electronic URL redirection similar to that of Merriman061, where the affiliate website sends the user's browser 16 an HTML tag as part of a requested page that redirects the user's browser to a URL of the ad server 19, which is a form of electronic URL-redirection.

153. Jaye further discloses that the redirection causes the enterprise server to receive “an electronically URL-redirection partial profile of an entity that uses a user computer coupled to the global computer network to access a website, which partial profile [...] contains at least one profile attribute related to the entity.” The “special URL” used for the electronic URL redirection may include “additional information” provided by the local server. EX1005, 6:32-43. This additional information is “appended to the end of the URL in the form of `http://enterprise_server_id/go?local_server_id&client_information.`” EX1005, 6:43-46.

154. A POSITA would have understood that this URL appends the address of the enterprise server (“enterprise_server_id”) with profile information including an ID identifying the local server visited by the user that is conveying the information to the enterprise server (“local_server_id”) and additional information about the user visiting the local server (“client_information”), e.g., the local ID of the user. Jaye confirms this understanding by describing “steps performed by the enterprise server 16 in response to a forced transfer by a local server.” EX1005, 7:46-49. In these steps, “the enterprise server 16 receives the new assigned local ID as well as the server identification from the calling local server,” which “may be encoded in the special URL provided by the local server.” *Id.*, 7:49-53.

155. A POSITA would have found it obvious to modify Merriman061 with Jaye such that Merriman061's affiliate website uses Jaye's special URL to append profile information (i.e., a partial profile) to the URL that redirects the user's browser to the ad server in messages 22 and 23. EX1004, 3:35-38; EX1005, 6:32-43.



EX1004, Fig. 1. A POSITA would have found it obvious that the appended profile information may include the profile information taught by Jaye and information identifying the web page being visited by the user as taught by Merriman061. EX1004, 3:44-52. Jaye explains that the electronic URL redirection may include “additional information” provided by the local server and provides a sample URL explaining how to do it. EX1005, 6:32-43. In combination, the ad server receives the electronically URL-redirectioned partial profile of the user from the affiliate website

because the affiliate’s website causes the user’s browser to provide profile information about the user to the ad server. EX1004, 3:24-52; EX1005, 6:34-58.

156. A POSITA would have been motivated to make this combination and found this modification obvious because it would efficiently convey additional profile information to Merriman061’s ad server in real time and enable more precise targeting. EX1004, 1:52-53; EX1005, 1:18-25; EX1008, 16, 28, 43, 105. Including Merriman061’s “substring key” in Jaye’s special URL along with the other information Jaye discloses conveniently identifies the website, web page, and user who visited that site and page. EX1004, 3:35-52; EX1005, 6:40-46. Jaye confirms this information is useful for targeted advertising and Merriman061 discloses the ad server stores this type of profile information in a database:

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON
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EX1004, Fig. 3A, 4:43-55; EX1005, 1:28-38.

157. This modification is a combination of prior art elements disclosed in Merriman061 and Jaye according to known methods to yield predictable results. Merriman061 teaches that the affiliate website redirects the user’s browser to the ad server using an HTML tag including a URL that contains information including “a substring key indicating the page in which the advertisement to be provided from the server is to be embedded.” EX1004, 2:19-23, 3:44-52. Jaye

discloses that the profile information may be appended to a redirection URL using the string “?local_server_id&client_information,” for example. EX1005, 6:40-46. In the combination, the redirection URL simply “contain[s] additional information” taught in Merriman061. EX1004, 3:44-52; EX1005, 6:40-43. A POSITA would have been motivated to make this combination because it provides a straightforward way to enhance the user profile information with the elements of Merriman061 and Jaye and it provides that profile information in real time, which would improve the ability to target advertisements using the most current and more complete information about the user. A POSITA would have had a reasonable expectation of success because using a URL in this way is conventional. EX1005, 4:7-20, 6:26-38, 7:49-57; *see also* EX1008, 41; EX1009, 218-219.

158. Additionally, a POSITA would have been motivated to combine Merriman061 and Jaye because it would improve Merriman061’s ad targeting and increase advertising revenue for the ad network and affiliate website publishers. Merriman061 teaches that it is “highly desirable to have a method of targeting...advertising to the appropriate user.” EX1004, 1:52-53, 1:13-22. Zeff explains that “[w]eb advertising...gives advertisers the opportunity to precisely target an audience, enabling them to deliver advertisements that are customized to each user's particular interests and tastes.” EX1008, 16. “Appropriately targeting ads means achieving greater response for the advertisers and the ability to charge a

higher CPM for publishers.” *Id.*, 105. Said another way, “the more publishers can tell advertisers about their audience, the higher the CPM publishers can charge for advertising space.” *Id.*, 43. And ad networks, such as DoubleClick, “sell advertising for publishers who participate in their networks.” *Id.*, 28. A POSITA would have recognized that using Jaye’s technique for passing real-time profile information via a special URL would tell advertisers more about website audiences (visitors), and would have been motivated to use these techniques within an ad network like that of Merriman061 to support higher prices for ads and therefore increase revenue for the ad network and website publishers.

[1.a(ii)] “... which partial profile is available to one of the third parties”

159. Merriman061 in combination with Jaye discloses that the partial profile is “available to one of the third parties,” e.g., the publisher of the affiliate website. The partial profile is “available” to the affiliate website because the website must have access to the partial profile to append the profile information to the URL as taught in both Merriman061 and Jaye. EX1004, 3:44-52; EX1005, 6:22-31, 6:43-46. In the combination, the partial profile the ad server receives from the affiliate website includes the “substring key indicating the page in which the advertisement to be provided from the server is to be embedded,” the local ID for the user, and the server ID for the affiliate website. Jaye teaches that web page visit information, i.e., the page visited by the user in which the ad is to be embedded, is available to, and

collected by, the affiliate website. EX1005, 7:7-19. A POSITA would have understood that both the local and server IDs are available to the publisher of the affiliate website. The server ID must be available to the affiliate server because the server appends this ID to the redirection URL. *Id.*, 6:43-46. Jaye is clear that “the local server creates a unique local ID for the client” and stores it in a cookie that it subsequently receives from that client. EX1005, 6:22-31. The local ID is thus available to the affiliate website and, by extension, to the publisher controlling the website, because it is made and used by that site, and because the site stores it in a cookie that it receives from the client/user. EX1005, 5:31-67.

160. Profile information including a local ID of a user and the pages at a website visited by the user is also captured and stored by conventional website logging tools and thus available to the third party via the website log. Mena explains that every visit to a website “creates a record of absolutely *everything* that happens during that session,” including data from cookies. EX1009, 208-209, 212-214 (emphasis in original). This information is stored in one or more log files. *Id.* One such log file is a transfer log (also called a “access log”) which is generated by “[a]lmost every web server.” *Id.*, 209. The transfer log records “every transaction between the server and browsers..., the domain name or IP address of the server making the request for each page on your site, the status of that request, and the number of bytes transferred to that requester.” *Id.*, 208. The transfer log also

includes an “HTTP Request” field which “tells the server which document the visiting browser is requesting.” EX1009, 211. A POSITA would have understood that this field indicates “the page in which the advertisement to be provided from the server is to be imbedded” (EX1004, 3:47-49), like the substring key provided by the affiliate website to the ad server as partial profile information. *See* EX1009, 210 (showing that the HTTP Request field indicates a requested page like “/index.html/products.htm”).

161. Another log file provided by “[m]ost servers”, the Agent Log, “records the name and version number of the browser making the request.” EX1009, 209, 213. Mena illustrates an example of the Agent Log:

```
Mozilla/2.0 (Win95; I)  
Mozilla/2.0 (Macintosh; I; PRC)  
MetaCrawler/1.2b 1ibwww/4.0D
```

Id., 213. A POSITA would have understood that the example information includes header information about the user computer and browser. For example, it identifies a browser (“Mozilla/2.0”), a Windows computer (“Win95”), and a Macintosh computer (“Macintosh”). *See Id.*, 223-224 (identifying sample “User-Agent” headers specifying information about user computers and browsers). Thus, header information about the user computer and browser is available to the affiliate website, and the publisher of the website, because it is stored in the log file of the web server providing the website.

162. Mena also explains that a web server can be configured to create an extended log file that captures multiple types of website visitor information. EX1009, 213-214. “Additional customer information can be generated about [visitor] movements within [the web] site with server-set cookies, which can be appended to [the] log file.” *Id.*, 213. Mena provides instructions teaching how to configure a server to produce log files including a “‘cookie field’ uniquely identifying the user,” and a POSITA would have possessed this knowledge. *Id.*, 214.

[1.a(iii)] “... which partial profile is received along with an identification of the one of the third parties that contributed the partial profile,”

163. Merriman061 in combination with Jaye discloses that the partial profile “is received along with an identification of the one of the third parties that contributed the partial profile.” Merriman061’s ad server receives a message from the affiliate website via electronic URL redirection that includes a “substring key indicating the page” on which the advertisement is to be provided. A POSITA would have understood that this page is the page at the affiliate website being visited by the user. EX1004, 2:19-26 (explaining that the ad is shown on the web page being accessed by the user); 3:44-52. A POSITA would have understood that the substring key indicating the page the user is visiting also identifies the affiliate website on which the page is located, and the identity of the website further identifies the third party publisher that contributed the partial profile by configuring the website to work in this manner.

164. In addition, Jaye discloses that the “additional information” contained in the URL used for the electronic URL redirection includes “information identifying the local server.” EX1005, 6:40-46. In the combination, this local server ID identifies the affiliate website from which the partial profile including other information like the substring key is received. That is, the local server ID identifies “the one of the third parties that contributed the partial profile” by virtue of identifying the website and website publisher.

165. Further, a POSITA would have found it obvious for the partial profile to be received “along with an identification of the one of the third parties that contributed the partial profile” because this information is automatically provided by HTTP. Both Merriman061 and Jaye disclose that the network communications between the various entities occur via HTTP. *See* EX1004, 3:24-28; EX1005, 5:20-22, 6:43-46 (illustrating the special URL as an HTTP request). A POSITA would have understood that messages transmitted using HTTP typically include a “Referer [*sic*] request-header field [that] allows the client,” e.g., the user’s browser, “to specify, for the server’s benefit, the address (URI) of the resource from which the Request-URI was obtained.” EX1010, 140. Mena confirms that the “Referer” information is captured by the web server receiving the request in a Referrer Log, which “captures the location your website visitors came from and how they found you,” such as “a link from another page.” EX1009, 213. Mena further notes that

“this is very important information.” *Id.* Therefore, a POSITA would have recognized that the request received by Merriman061’s ad server via HTTP would have identified the affiliate website that contributed the partial profile in the HTTP Referer request-header field, which also identifies the affiliate website publisher.

[1.a(iv)] “and automatically with the computer system storing the received partial profile;”

166. Merriman061 in combination with Jaye discloses “automatically with the computer system storing the received partial profile.” Merriman061’s ad server is the claimed computer system. Merriman061 teaches that the ad server maintains a “database structure” that stores profile information for “each user identified by the system.” EX1004, 4:43-51.

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON
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A POSITA would have understood that the ad server automatically stores received profile information in the database because this is an obvious way to implement a computerized system. Plus, Merriman061 describes the ad server as performing its various processes without human intervention, which a POSITA would understand to indicate that the ad server is operating automatically. *See, e.g., id.*, 5:10-63.

167. Combined with Jaye, Merriman061’s ad server receives profile information appended at the end of the redirect URL. A POSITA would have found

it obvious that the ad server stores this profile information in the database given that Merriman061 discloses storing profile information in a database and Jaye explicitly discloses storing the profile information appended to the URL in a database. EX1004, 4:43-51; EX1005, 8:23-26. Doing so would allow the ad server to combine profile data received from the affiliate websites on a per-user basis to build more robust user profiles. EX1004, 8:51-56; EX1005, 2:21-24, 3:3-9, 8:35-43. This is a combination of known elements disclosed in Merriman061 and Jaye according to known methods to yield the predictable result of storing additional information in a database. A POSITA would have reasonably expected the combination to be successful because using a database to store information in this way is conventional. EX1005, 8:16-28.

[1.b] “(b) automatically with the computer system electronically adding the received partial profile to a maintained profile believed to be related to the same entity;”

168. Merriman061 in combination with Jaye discloses this limitation. As I discuss above for limitation [1.a(iv)], Merriman061 in combination with Jaye discloses that the ad server automatically stores the received partial profile in a database. In addition, the ad server performs the automatic storage electronically because it is performed by a computer. EX1004, 5:10-63.

169. A POSITA would have combined the references so that the ad server adds “the received partial profile to a maintained profile believed to be related to the

same entity.” Merriman061’s database stores for “each user identified by the system,” “all of the information known about the user.” EX1004, 4:43-55, 5:50-60. This stored information corresponds to a “maintained profile” for a user (an entity).

170. Merriman061’s ad server receives additional partial profiles for a user via redirection, Merriman061’s ad server adds the partial profile information to the maintained profile believed to be related to the same user. That is, in the combination, the ad server adds the partial profile information to the database record having the “USER ID” field value that matches the user’s ID received via the redirection. EX1004, 2:11-15, 2:26-30, 4:43-55, 5:10-20; EX1005, 6:32-58.

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON
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EX1004, Fig. 3A.

171. A POSITA would have been motivated to combine Merriman061 and Jaye because it would improve Merriman061’s targeted advertising and increase advertising revenue for the ad network and affiliate website publishers; storing the updated profile information in the ad server database is also how both Merriman061 and Jaye already disclose storing profile information. A POSITA would have had a reasonable expectation of success in making this combination because it is a simple combination of prior art elements disclosed in Merriman061 and Jaye according to known methods to yield predictable results.

[1.c] “(c) automatically with the computer system generating and storing an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes;”

172. Merriman061 in combination with Jaye discloses this limitation. As I discuss above for limitation [1.b], in the combination Merriman061’s modified ad server adds the received partial profile, which includes the substring key, local server ID and local user ID, to the user’s database record. A POSITA would have understood that the ad server adds the partial profile to the database by automatically generating and storing an electronic database record to hold profile information, such as by modifying an existing database record or creating new database records. *See* EX1009, 48-50 (explaining that a database record can store a variety of information in a variety of ways).

173. In combination the stored record includes the local server ID, which identifies both the website visited by the user and the website that redirected the user’s browser to the ad server. EX1005, 7:49-53, 8:25-26. The local server ID thus identifies “which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes” – the third party that operates the website identified by the local server ID is the one that contributed particular profile attributes including the user ID and the substring key indicating the page in which the advertisement to be provided from the ad server is to be embedded.

[1.d] “(d) wherein the maintained profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network.”

174. Merriman061 discloses this limitation. Merriman061 discloses using the profile data in the database, which stores the maintained profile including the added partial profile, to target advertisements to the user computer over the Internet. EX1004, 2:18-36 (“When, for example, a user using a web browser accesses a web page that is affiliated with the advertising server process...the advertising server process determines an appropriate advertisement to select for the particular user” which is transmitted to “the user’s web page for display.”), 3:52-62 (“Upon receiving the request in the message 23, the advertising server process 19 determines which advertisement or other object to provide to user’s browser and transmits the messages 24 containing the object such as a banner advertisement to the user’s browser 16 using the HTTP protocol.”), 4:50-55 (“By using the information such as which advertisements a user has expressed interest in and which pages the user was viewing when the user clicked through along with other information, targeted Internet advertising is possible.”), 5:50-6:59 (“the ad server 19 obtains from a database all of the information known about the user” and uses the information to select a targeted ad which is delivered to the user), Abstract (“Methods and apparatuses for targeting the delivery of advertisements over a network such as the Internet are disclosed...In response to requests from affiliated sites, an advertising

server transmits to people accessing the page of a site an appropriate one of the advertisement based upon profiling of users and networks.”).

175. Merriman061 further discloses that the ads are “third-party advertisements.” Merriman061 discloses that affiliate websites “contract with the entity providing the advertisement server [to] permit third party advertisements to be displayed on their web sites.” EX1004, 2:62-65. Zeff confirms that it was a common practice for website publishers to use ad networks such as the one controlling the ad server to sell ad space on their websites to third-party advertisers. EX1008, 28 (“To assist sites in generating revenue from advertising, ad networks have formed to sell advertising for publishers who participate in their networks.”), 103-106 (“With an ad network, the media buyer can call in the morning and have an ad running on a slate of sites that same day.”). Accordingly, a POSITA would have understood that the ads are third party advertisements because the advertisers may be third parties to both the affiliate website publishers and the operator of the ad server/network.

2. Claim 3: “The method of claim 1 wherein the computer system electronically adding the received partial profile to a maintained profile believed to be related to the same entity comprises the computer system adding the received partial profile to a maintained profile believed related to the same entity on account of the received partial profile and the maintained profile being related to the same user computer.”

176. Merriman061 in combination with Jaye discloses claim 3. The combination electronically adds the received partial profile to a maintained profile

believed to be related to the same entity by matching the user's identification number received via the redirection with the USER ID field in the database as I discuss for limitation [1.b]. Jaye teaches that the local server (the affiliate website in combination) generates a user's local ID by creating a unique ID identifying the user's computer, and then storing a cookie containing this ID on the user's computer. EX1005, 5:49-67, 6:26-31; EX1008, 43; EX1009, 219, 225. The local server uses the cookie ID to recognize visits from the same user computer and appends this ID to the URL that redirects the visitor to the enterprise server. EX1005, 5:56-63, 6:40-43. Accordingly, in the combination the ad server adds the received partial profile to a maintained profile on account of the received partial profile and the maintained profile being related to the same user computer having the same cookie ID. A POSITA would have found it obvious for the combination to operate in this manner because using a cookie to identify a same user computer is conventional. *Id.*, 5:20-48.

3. Claim 4: “The method of claim 3 wherein the computer system determines that the received partial profile and the maintained profile are related to the same user computer by automatically reading a cookie on the user computer.”

177. Merriman061 in combination with Jaye discloses claim 4. The combination determines that the received partial profile and the maintained profile are related to the same user computer by matching identifiers as I discuss for limitation [1.b] and claim 3.

178. In the combination, the ad server electronically receives a partial profile of the user when it receives message 23, based on the link redirecting the user's browser to the ad server. EX1004, 3:35-44; EX1005, 6:32-46. Merriman061 additionally discloses that message 23 includes "a cookie if the browser 16 is cookie enabled and stores cookie information." EX1004, 3:44-52. Merriman061 uses this cookie to identify the user, and user computer, for whom a profile is maintained. EX1004, 5:10-32. A POSITA would have understood that the ad server receives the cookie by automatically reading the cookie on the user computer. EX1009, 219-221. It would have been obvious to a POSITA to use the user's identifier in the cookie to identify the maintained profile in the database believed to be related to the same user computer. This is taught in Merriman061. EX1004, 5:18-20, 7:15-31.

179. If the user identifier in the ad server cookie is different than the local user ID appended to the URL by the affiliate website, a POSITA would have found it obvious to use either or both IDs to identify the maintained profile in the database. Jaye discloses that a database may link different identifiers assigned by local servers (affiliate websites in combination) to a global identifier for the same maintained profile. EX1005, 2:21-24, 3:6-9, 8:10-28. Doing so advantageously allows the ad server to create a global profile consolidating profile information received from different affiliate websites. EX1005, 6:1-11, 8:40-9:40. A POSITA would have been motivated to use different local and global identifiers, for example, to maintain

user privacy when sharing profile information with the affiliate websites, advertisers, or other interested parties as taught by Jaye. EX1005, 2:1-14, 2:26-31, 6:3-11.

4. Claim 5: “The method of claim 1 further comprising automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the maintained profile, the profile attributes used in targeting the advertisements.”

180. Merriman061 in combination with Jaye discloses claim 5. As I discuss above for limitation [1.c], the combined system of Merriman061 and Jaye discloses “automatically with the computer system generating and storing an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes.” In addition, as I discuss for limitations [1.b] and [1.d], the combined system discloses that the partial profile is added to the maintained profile, where the maintained profile, including the added partial profile, comprises profile attributes used in targeting advertisements.

181. In the combined system, the partial profile is added to the maintained profile, and all the profile attributes of the maintained profile, including those of the added partial profile, may be used in targeting advertisements. *See* EX1004, 5:50-6:11 (“all of the information known about the user” can be used in targeting ads). As the combined system of Merriman061 and Jaye discloses “automatically... generating and storing an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes” as I discuss above for limitation [1.c], a POSITA would have understood that the

combined system maintains a record of which unaffiliated third party contributed to the maintained profile the profile attributes used in targeting the advertisements.

182. If Patent Owner argues that claim 5 requires a maintaining a record of which unaffiliated third party contributed, to the maintained profile, the profile attributes *that were actually used* to target the advertisements, then claim 5 is also obvious in view of Merriman061 and Jaye. Jaye specifically discloses that an interested party may be limited to using only a portion of a maintained profile for advertising purposes. EX1005, 14:22-25. For example, an advertiser may be interested in, or subscribe to receive, “information about the users favorite sports and favorite teams” from a “web site dedicated to providing sports information.” EX1005, 10:16-21, 12:66-13:3; EX1008, 16, 84. Merriman061, in turn, discloses a reporting process that “uses standard database techniques for generating any desired reports,” including “reports showing the number of viewings and click throughs of various advertisements.” EX1004, 8:33-38.

183. In view of these disclosures, a POSITA would have found it obvious for Merriman061’s ad server to automatically maintain electronic records of which unaffiliated third party contributed, to the maintained profile, the profile attributes that were actually used to target the advertisements. For example, it would have been obvious for the ad server to maintain records indicating that a particular advertiser subscribed to receive profile attributes related to sports information from

a particular affiliate website, and records indicating how the advertiser used those profile attributes for ad targeting. A POSITA would have been motivated to maintain these records for reporting and financial reasons, e.g., to charge subscription and ad targeting fees to advertisers and to compensate the party that provided the profile information. EX1008, 59.

5. Claim 6: “The method of claim 1 further comprising automatically with the computer system electronically determining whether the received partial profile contains any profile attributes about the entity that were not previously contained in a maintained profile.”

184. Merriman061 in combination with Jaye discloses claim 6. As I discuss for limitation [1.a], Merriman061 in combination with Jaye discloses the ad server receiving a partial profile including the local ID and server ID from the affiliate website. EX1004, 3:44-52; EX1005, 6:40-46. Additionally, as I discuss for limitation [1.b], a POSITA would have understood that Merriman061’s ad server automatically adds the received profile attributes to a maintained profile believed to be related to the same entity.

185. A POSITA would have understood that to store attributes received from different websites in the same maintained profile, the ad server would determine which attributes of the partial profile are not already in the maintained profile to avoid storing redundant information. EX1009, 241 (“Keep in mind that irrelevant, redundant, or covariant variables in a database constitute noise to any data analysis and can weaken your data mining predictive models.”). For example, upon receiving

a partial profile indicating a local server ID / local ID pair for a user, a POSITA would have found it obvious for the ad server to determine whether the use's profile already included this information.

6. Claim 10: “The method of claim 1 further comprising automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection.”

186. Merriman061 combined with Jaye discloses claim 10. As I discuss for claim 4, the ad server electronically receives an electronically URL-redirection partial profile of the user when it receives message 23, based on the link redirecting the user's browser to the ad server. EX1004, 3:35-44; EX1005, 6:32-46. Merriman061 discloses that message 23 includes “a cookie if the browser 16 is cookie enabled and stores cookie information.” EX1004, 3:44-52. Thus, message 23 includes a cookie if the cookie was previously stored on the user's computer by the browser. EX1004, 3:35-52, 5:10-30; EX1009, 218-219. The ad server reads the cookie automatically and electronically because it is a computerized process. Jaye confirms this is the case. *Id.*; EX1005, 7:46-8:14.

7. Claim 11

187. Claim 11 is unpatentable for similar reasons as for claim 1. The preamble of claim 11 recites “[a] computer system programmed and connected to perform a method of collecting profiles of Internet-using entities, the method comprising...” The claimed “computer system” is met by Merriman061's ad server

in the same way the ad server meets the claimed “programmed computer system” of claim 1. *See* EX1004, 4:21, 9:8-16 (ad server comprises “one or more servers” and is programmed to perform an “advertising server process, reporting process, derive profile process and management process”).

188. To extent the term is limiting, Merriman061’s ad server is “connected” to other entities via a network. EX1004, 2:15-16 (“an advertising server process is provided as a node on the network”). The remaining elements of claim 11 are substantively identical to those of claim 1.

8. Claims 13-16 and 20

189. Claims 13-16 and 20 are substantively identical to claims 3-6 and 10, and are unpatentable for the same reasons.

9. Claim 21

190. Claim 21 is unpatentable for similar reasons as for claim 1. The preamble of claim 21 recites “[a] tangible, non-transitory data storage medium comprising indicia of instructions for a processor to perform a method of collecting profiles of Internet-using entities, the method comprising...” Merriman061 teaches this medium because the ad server’s processes are implemented on a “computer platform,” which a POSITA would have understood to include a data storage medium comprising indicia of instructions and a processor for executing the stored computer instructions. EX1004, 9:8-16. Jaye confirms this understanding by

disclosing “a computer program residing on a computer-readable medium includes instructions for” causing the enterprise server 15 to perform certain method steps. EX1005, 3:33-39. The remaining elements of claim 21 are substantively identical to those of claim 1.

10. Claims 23-26 and 30

191. Claims 23-26 and 30 are substantively identical to claims 3-6 and 10, and are unpatentable for the same reasons.

B. Claims 1, 3-6, 9-11, 13-16, 19-21, 23-26, and 29-30 of the '904 patent are obvious over Rosenberg and Merriman¹⁵⁴

1. Claim 1

[1.pre] “An automated method of collecting profiles of Internet-using entities, the method comprising:”

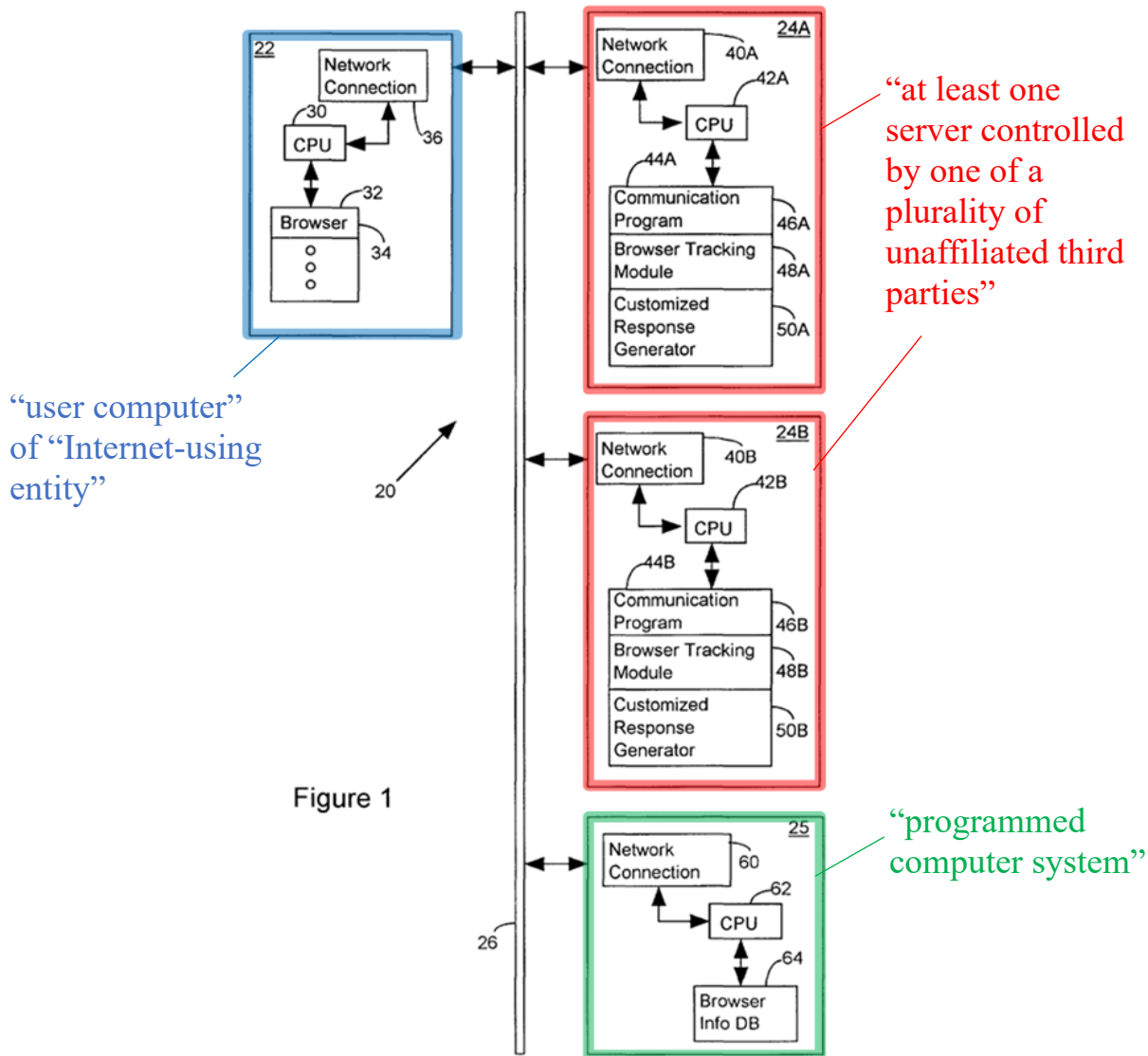
192. To the extent the preamble is limiting, Rosenberg discloses it. Rosenberg discloses a method for “tracking a web browser across distinct domains of a network of computers,” to “identify content preferences and interests associated with the individual using the web browser.” EX1006, Abstract, 3:25-37. In other words, Rosenberg teaches collecting information about users (“profiles of Internet-using entities”) as they use their browsers to access various websites on the Internet. *Id.*, Abstract, 3:25-37, 7:47-58. The collected information (“profiles”) is stored in a data structure and includes, for an identified user, information about which websites the user visited, when the user visited the websites, and the types of content the user requested from those websites. *Id.*, 3:25-37, 5:55-7:40, Figs. 3, 7. A POSITA would

have understood that the method disclosed by Rosenberg is an “automated method” because it is performed automatically by programmed computers. *Id.*, 4:2-5:54.

[1.a(i)] “(a) electronically receiving at a programmed computer system coupled to a global computer network, from at least one server controlled by one of a plurality of unaffiliated third parties, an electronically URL-redirceted partial profile of an entity that uses a user computer coupled to the global computer network to access a website, which partial profile [...] contains at least one profile attribute related to the entity...”

193. Rosenberg in combination with Merriman¹⁵⁴ discloses this limitation.

194. Rosenberg teaches the basic structure set forth in this limitation, including the claimed “programmed computer system coupled to a global computer network,” “at least one server controlled by one of a plurality of unaffiliated third parties,” and “an entity that uses a user computer coupled to the global computer network to access a website.” These entities are shown in Figure 1:



EX1006, Fig. 1.

195. This figure illustrates three server computers, labelled 24A, 24B, and 25. One of the server computers, labelled “25” is “a database server” which performs a “database function” and Rosenberg sometimes refers to as a “database.” EX1006, 4:20-21, 4:65-67. A POSITA would have understood from Rosenberg’s disclosure that the database server may include hardware and software identical or

similar to the other server computers because “[t]he database function...may be performed on another server, say server computer 24A, even though it is illustrated in FIG. 1 as operating on a separate server 25.” *Id.*, 4:21-24. Thus, the database may be provided by a dedicated database server or one of the other server computers 24.

196. The database server is a “programmed computer system coupled to a global computer network.” Rosenberg explains that the server computers “include[] standard server computer components, including...a memory” storing “a set of computer programs to implement the processing associated with the invention.” EX1006, 4:25-30. The server computers, including the database server, are coupled to a “computer network 20” which “may be considered as a simplified representation of the WWW,” which a POSITA would have understood to be the World Wide Web on the Internet. *Id.*, 3:66-4:21. The computer network is therefore a “global computer network.” Rosenberg’s database server is thus the claimed “programmed computer system coupled to a global computer network.”

197. The other **server computers**, labelled 24A and 24B, each correspond to the claimed “at least one server controlled by one of a plurality of unaffiliated third parties.” A POSITA would have understood these servers to be web servers providing websites. Rosenberg explains that the server computers are connected to the “WWW,” which a POSITA would understand to be the World Wide Web.

EX1006, 4:1-2. In addition, Rosenberg describes the server computers providing web server functionality, including receiving and responding to requests from web browsers. *Id.*, 3:10-24, 4:25-37, 4:57-59, 5:1-6, 6:59-67.

198. Further, a POSITA would have found it obvious that the web servers are controlled by unaffiliated third parties, e.g. respective website publishers who do not share common ownership with the entity controlling the database server. Rosenberg discloses that web servers may be operated by many different parties, and “are typically operated by large information providers, such as commercial organizations, governmental units, and universities.” EX1006, 1:14-23; *see also* EX1008, 26 (“In the sellers’ camp, the key players are the publishers, who produce the sites with advertising space to sell.”), *id.* (“Today there are more than a quarter-million Web sites, and over a thousand of these accept advertising...And the top publishers are beginning to earn enough advertising revenue to near profitability.”).

199. Rosenberg also suggests that the web servers provide different websites published by different parties since the web servers operate in different domains. EX1006, 3:10-24. Rosenberg further suggests that the web servers are controlled by unaffiliated parties by noting that “a security feature associated with cookies prevents the tracking of a user across web sites with distinct domain names,” even though that is something that would be “highly desirable” and “useful.” *Id.*, 2:25-30, 3:4-8. This indicates that the web servers are controlled by distinct parties not

under common ownership because the web servers cannot track user interactions across domains absent Rosenberg's solution. *See Id.*, 3:4-8, 4:52-59.

200. While Rosenberg describes the web servers as “cooperating servers” and “related server computers,” the terms “cooperating” and “related” simply reflect that the servers cooperatively “observe a common protocol” as taught by Rosenberg to share profile information with the database server 25. EX1006, 4:52-57. Rosenberg does not disclose the existence of any common ownership or other relationships between the parties controlling the web servers and the database server.

201. A POSITA would have thus found it obvious for at least one of the web servers and the database server to be controlled by “unaffiliated third parties.” Rosenberg suggests that the parties controlling the web servers and database server are separate, and thus do not have common ownership. Such parties are unaffiliated third parties. This reading is consistent with AlmondNet's construction of “unaffiliated third part[y/ies]” as meaning “part[y/ies] not having common ownership with the party or parties that control said programmed computer system.” EX1012, 18-24.

202. In addition, a POSITA would have found it obvious for at least one of the web servers and the database server to be controlled by “unaffiliated third parties” because there are only two real possibilities – either the parties controlling a web server and the database server are affiliated or they are not. Both possibilities

are predictable, and Rosenberg's disclosure suggests the parties controlling the web server and database server are not affiliated, and thus are unaffiliated third parties. A POSITA would have had a reasonable expectation that Rosenberg's system would operate successfully if the controlling parties are unaffiliated third parties, given that whether there is an affiliation, common ownership, or the like is not a functional distinction and, at any rate, Rosenberg provides a solution that allows unaffiliated third parties to cooperatively and passively track web browsers. EX1006, 3:10-37.

203. Rosenberg further discloses a user that is "an individual using [a] web browser" on a client computer (a "user computer") to access pages provided by the servers, e.g., to "request a page of information," who is an "entity that uses a user computer coupled to the global computer network to access a website." EX1006, 3:25-37, 4:7-15, 5:1-5. The user may use the client computer request pages associated with different types of information from the website, such as "news" or "product information." *Id.*, 6:2-4.

204. Rosenberg alone and in combination with Merriman¹⁵⁴ also discloses electronically receiving, at "a programmed computer system" (the database server), from at least one server controlled by one of the plurality of unaffiliated third parties (one of the web servers), an electronically URL-redirectioned partial profile of an entity (the user) that uses a user computer (client computer) coupled to the global computer

network to access a website (one or more web pages provided by the web server), which partial profile contains at least one profile attribute related to the entity.

205. Rosenberg discloses use of electronic URL-redirection to communicate a partial profile of a user between web servers. Rosenberg discloses that when a client browser operating on the client computer requests a page from a first web server, the first web server generates a unique identification value for the browser and sets a cookie containing the identifier in the client browser. EX1006, 2:15-17, 5:1-38, 7:62-66. The first web server also shares this identifier, which is a partial profile, with the database server and instructs the browser to convey the identifier to the other web servers “that are observing the same protocol.” *Id.*, 5:7-12; 5:17-24. This instruction causes the browser to generate requests containing the identifier, and send the requests to the other web servers, which thereafter use the identifier in their respective cookies for that browser. *Id.*, 5:28-54.

206. A POSITA would have understood that Rosenberg’s first web server conveys the identifier to the other web servers using electronic URL-redirection. The first web server conveys the identifier by sending the client a web page that “embeds within it HTML that references a specific URL on” a second web server to which the identifier is being conveyed. EX1006, 5:17-54, 8:12-9:24. “The URL has the form: ‘http://B/B-correlate?i’, where i’ is an encoding of the identifier” to be conveyed, and “B/B-correlate” is a URL referencing a location on the second web

server to which the user's browser is redirected to obtain information. EX1006, 8:15-18. The other web servers receive the conveyed identifier "i" due to the user's browser navigating to the specified URLs and then set their own cookies containing the identifier in the user's browser, so that all the web servers use the same identifier "i" for the user. *Id.*, 5:40-54.

207. Rosenberg describes several different techniques "in which [the] HTML reference to another site can be embedded in a page." EX1006, 8:34-35. One way is to use an "HTML cross-site reference with a frame tag," such as "<FRAME SRC='http://www.search.com/cnet.cgi?3676778'>," where "3676778" is the unique identifier. *Id.*, 8:56-61. Another way is to use an "HTML cross-site reference with an HTML form submission tag," such as "<FORM METHOD=GET ACTION='http://www.search.com/cnet.get.cgi?3676778'>." *Id.*, 8:66-9:6. A third way is an "HTML cross-site reference with an image tag," such as "." *Id.*, 9:8-17. A fourth way is to use an "HTML cross-site reference statement with an HTTP redirect command" such as "Location: http://B/B-correlate?a". *Id.*, 9:18-24.

208. A POSITA would have understood and considered each of these techniques to be an electronic URL redirection according to the plain and ordinary meaning of this term because they all instruct the browser to obtain certain information from a different location. For example, an "image tag" corresponds to

“an embedded image, which is located on another site,” which causes the browser to automatically request the image from the other site. EX1006, 9:8-17. This understanding is consistent with AlmondNet’s construction of the term “URL redirection” used in the parent ’582 patent as meaning “obtaining certain information for at least a portion of an accessed page / site from a different location.” EX1012, 33-37. It is also consistent with the ’904 patent, which refers to “redirecting a portion of the visitor’s page to [a] server.” EX1001, 4:4-11, 12:17-20. It is additionally consistent with AlmondNet’s complaint in the parallel litigation, where Patent Owner argues that “Amazon receives electronically-redacted partial profile information (e.g., partial profile information redirected using a pixel or JavaScript redirect) associated with website visitors from a server or servers controlled by unaffiliated third parties.” EX1013, 71-75. Rosenberg thus discloses exchanging information among web servers using electronic URL redirection, where one of the web servers may be the database server. *See* EX1006, 4:19-24.

209. Rosenberg also discloses that the database server receives a partial profile of the user from a web server. First, the first web server shares the user’s assigned cookie identifier with the database server. EX1006, 5:1-11. The cookie identifier is a partial profile of the user because it is an attribute “that enable[s] the identification of the entity described by the profile” (EX1001, 2:51-55) as I describe in more detail below. In addition, to the extent not explicitly disclosed by

Rosenberg, it is implicit and obvious to a POSITA that the first web server may utilize any of the disclosed URL redirection techniques to share the identifier with the database server because the database server may be one of the web servers, and because this is a natural and convenient way to share the identifier. EX1006, 4:21-24, 4:52-63. A POSITA would have understood that by using URL redirection to communicate the cookie identifier to the database server, the database server can beneficially set a cookie containing the identifier in the user's browser and be able to recognize the user in subsequent interactions. *See Id.*, 5:40-54.

210. Second, Rosenberg explains that the database server receives a user's web browsing activity from the web servers. Specifically, each web server stores a user's web browsing activity in its access logs and then passes this information to the database server. EX1006, 5:57-62, 3:24-33, 7:1-9. A web server may also pass demographic information about the user to the database server. *Id.*, 7:19-28.

211. Rosenberg's figure 3 shows an example data structure the database server uses to store the received information:

Cookie ID #	Last Visit to Server_A	Content Requested			Last Visit to Server_B	Content Requested		
		News	Product Info	Feature Story		News	Product Info	Feature Story
123	4-9-96;18:25	2	5	0	7-4-96;16:23	1	7	3

Figure 3

EX1006, Fig. 3. As shown, the data structure includes a “Cookie ID #” which is a “unique identification number” for the user’s browser. EX1006, 5:63-65. It also shows the content requested by the user from two web servers, labelled “Server_A” and “Server_B” and, “[i]n this example, the user of the web browser requested two pages of news and five page of product information” from Server_A and similar information from Server_B. *Id.*, 5:65-6:5. Rosenberg explains that “[t]he data structure of FIG. 3 is simplified for the purposes of illustration” and “[a] typical data structure includes entries for previous visits, more specific entries regarding content requests, and additional entries for a large number of servers.” *Id.*, 6:6-9. In addition, Rosenberg discloses another sample data structure used in some embodiments that includes user information including a name, password, and demographic information. *Id.*, Fig. 7, 3:58-60, 7:1-45. The activity and demographic information received from the different servers is correlated using the unique identifier, i.e., the “Cookie ID #,” assigned to the user, allowing “each server [to] access the information in the database that is set by other servers.” EX1006, 7:46-61.

212. Rosenberg thus discloses that the database server receives a partial profile of the entity that “contain[s] at least one profile attribute related to the entity.” The ’904 patent defines a profile as “[a] collection of attributes that describe a person or an organization or any other entity that can be described by a combination of

data.” EX1001, 2:38-40. For example, profile attributes include the person’s gender, age, education, and “interests as reflected in his behavior.” *Id.*, 2:40-43. Profile attributes also include “attributes that enable the identification of the entity described by the profile such as name, address, URL, [and] cookie” as well as “information learned about the entity described by the profile from a communication protocol such as the information learned about the visitor to a web site from its http header.” *Id.*, 2:51-59. “[A]ll profiles are, by definition, partial.” *Id.*, 7:53-54.

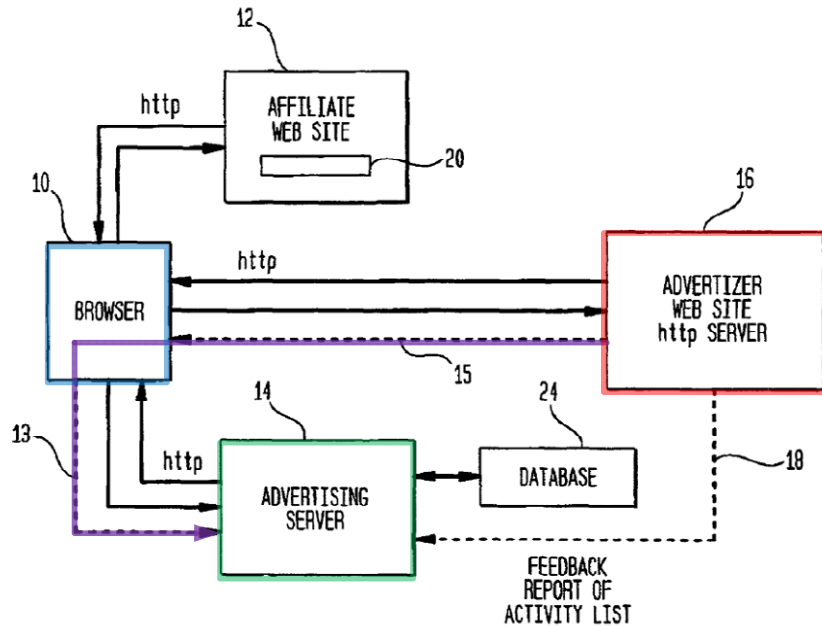
213. The information received by the database server includes activity information describing the types of web pages requested by the user, demographic information, and cookie identifiers. EX1006, 3:24-33, 5:1-11, 5:57-62, 7:1-28. A POSITA would have understood, therefore, that Rosenberg’s database server receives a partial profile of a user that uses a user computer coupled to the global computer network to access a website and contains at least one profile attribute related to the user.

214. Rosenberg discloses that the web servers pass cookie identifiers to other web servers via electronic URL redirection. EX1006, 5:17-54, 8:12-9:24. The cookie identifier is a partial profile, and the database function may be provided by a web server. EX1006, 4:19-24. Therefore, a POSITA would have understood that Rosenberg discloses the database server receiving “an electronically URL-redirectioned partial profile.”

215. Rosenberg does not explicitly disclose that the database server receives a user's web browsing activity or demographic information via electronic URL-redirection. However, a POSITA would have found it obvious to modify Rosenberg based on the teaching of Merriman154 to cause the database server to receive partial profiles including web browsing activity and demographic information from the web servers via electronic URL-redirection.

216. Merriman154 discloses an ad server receiving partial profiles from web servers via electronic URL-redirection and storing the partial profiles in a database. Merriman154 discloses a targeted advertising system including a **user browser**, and "at least one affiliate web site 12," who is "a publisher or other content provider having advertising space to 20 fill," an "**advertising server 14**," and "**advertiser web sites 16**." EX1007, 4:27-39, 5:9-11.

FIG. 1



EX1007, Fig. 1. When a user uses a browser to access the **advertiser web site server**, the web server communicates (as illustrated by the **purple path**) “individual activities of the user at [the] advertiser site 16...to the advertising server 14 using by **spotlight tags**.” *Id.*, 4:51-54. The **ad server** stores the reported activities in a database. *Id.*, 5:49-51.

217. A POSITA would have understood that Merriman154’s “spotlight tag” feedback path involves the ad server receiving an electronically URL-redirectioned partial profile of a user. A spotlight tag is “a minimal graphic (e.g., a one pixel image) containing a redirect message back to the advertising server...placed on web pages by the advertiser.” EX1007, 4:54-57. Spotlight tags contain embedded information “such as information identifying the specific advertiser web page (as for

example, identifying a purchase confirmation page stating ‘thank you for your order’ etc.)” containing the tag. *Id.*, 4:57-61. When a user visits the page of the website containing the spotlight tag, “a reply message 15 redirects the users browser 10 back to the advertising server 14 via request 13 to access the minimal one pixel graphic image,” allowing the “advertiser web site 16 [to] provide[] real time reporting of user activities while the user is in the advertising web site 16,” which the server stores “in the local database 24 for further processing.” *Id.*, 4:51-5:2, 5:43-51.

218. A POSITA would have understood from Merriman154’s description of a spotlight tag as a request “to access [a] minimal one pixel graphic image,” that the spotlight tag causes the user’s browser executing on the user computer to request an image from a URL specified by the SRC attribute of an element, where the URL specifies the location of the image on the ad server. EX1011, 9, 34-35. Additionally, a POSITA would have understood this request to be a “redirection” because it instructs the browser to request the image from a different location, i.e., the ad server instead of the web site server. This understanding is consistent with AlmondNet’s construction of the term “URL redirection” used in the parent ’582 patent as meaning “obtaining certain information for at least a portion of an accessed page / site from a different location.” EX1012, 33-37. It is also consistent with the ’904 patent, which refers to “redirecting a portion of the visitor’s page to [a] server.” EX1001, 4:4-11, 12:17-20. The redirection conveys a partial profile of the user. For

example, the redirection conveys in real-time that the user visited the specific advertiser web page containing the spotlight tag. EX1007, 5:46-49.

219. Given the disclosures in Rosenberg and Merriman154, a POSITA would have found it obvious to modify Rosenberg to pass profile information from a web server to the database server via electronic URL-redirection using a spotlight tag as taught by Merriman154. Rosenberg teaches that the database server receives partial profile information about website activity from web servers in bulk and performs electronic URL redirection using image tags to exchange information such as cookie identifiers among servers. *See, e.g.*, EX1006, 5:59-62, 7:1-9. Merriman154 teaches that website activity information may be transferred between servers in bulk or by using electronic URL redirection. *See* EX1007, 4:44-5:8. Moreover, a POSITA would have recognized that Rosenberg's image tags for exchanging cookie identifiers operate on the same principle as Merriman154's spotlight tags; both use an embedded image link that redirect a user's browser to another server to pass information to that server. EX1006, 9:8-17; EX1007, 4:51-66.

220. Therefore, a POSITA would have found it obvious to modify Rosenberg to use spotlight tags to pass partial profile information about website activity because it is a simple substitution of one known technique (spotlight tags) for another (bulk transfer). A POSITA would have found this modification obvious

as a combination of prior art elements according to known methods. Furthermore, a POSITA would have found the modification obvious to try because Merriman154 teaches there are two ways to transfer website activity information from a web server to a server with a database, bulk transfer and spotlight tags. Rosenberg discloses using one of these ways (bulk transfer), and it would have been obvious to use the other way (spotlight tags) in Rosenberg's system.

221. A POSITA would have predicted the result of the modification and have reasonably expected the result to be successful given that Merriman154 teaches how it can be accomplished, and computer systems operate in predictable and deterministic ways. In addition, a POSITA would have predicted the result, and would have a reasonable expectation of success, because the technology underlying the spotlight tags, URL redirection using image tags, is already present in Rosenberg's system. As a result, the primary change in the modified system is to send different information via the image tag redirects. Therefore, a POSITA would have found Rosenberg modified by Merriman154 as described above to yield predictable results and would have reasonably expected the modified system to be successful.

222. Furthermore, a POSITA would have been motivated to make this combination so Rosenberg's database server can receive partial profile information about the user from the web servers "in real time." EX1007, 4:51-54. This allows

the database server to update the user's profile in substantially real time, ensuring that any activities that make use of profile information, such as selecting personalized content, targeted advertising, etc., are based on the most current profile information. *See, e.g.*, EX1006, 1:37-42 (describing that profile information is used by advertisers "to more accurately choose appropriate advertisements" and by editors "to create more appealing content"), 6:59-67, 7:10-17.

223. A POSITA would have understood that Rosenberg as modified by Merriman154 (and unmodified in the case of cookie identifiers) discloses the database server receiving the electronically URL-redirceted partial profile of the user "from" a web server because the web server causes the user's browser to provide the profile information to the database server. EX1006, 3:14-19, 5:9-11, 5:21-39, 7:62-9:24. Merriman154 discloses that the spotlight tag feedback path "permits the advertiser web site to communicate the activities of visitors at the advertiser's web site 16, back to the advertising server 14." EX1007, 4:41-43, 4:62-5:2, 5:46-49. That is, the ad server (the database server in combination) receives the profile information communicated by (i.e., from) the advertiser's web site (the web server in combination).

224. This understanding is consistent with AlmondNet's complaint in the parallel litigation, where Patent Owner argues that "Amazon receives electronically-redirceted partial profile information (e.g., partial profile information redirceted

using a pixel or JavaScript redirect) associated with website visitors from a server or servers controlled by unaffiliated third parties.” EX1013, 71-75.

[1.a(ii)] “... which partial profile is available to one of the third parties”

225. Rosenberg discloses that the partial profile is “available to one of the third parties,” e.g., a publisher controlling one of a plurality of web servers that provide partial profile information to the database server. Rosenberg discloses that the profile information maintained by the database server, which includes received partial profiles, is available to any of the web servers for use in “prepar[ing] customized responses to browser inquiries.” EX1006, 4:39-44. Indeed, a primary purpose of Rosenberg’s system is to provide the various web servers with shared access to the cumulative profile information stored by the database server:

In sum, the present invention operates by establishing a unique identifier. This unique identifier is then stored as a cookie in the web browser. The unique identifier is then sent to one or more cooperating server computers operating under the same protocol. Each cooperating server that receives the unique identifier sets a cookie based upon the unique identifier. **Since the same identifier is used by each server, each server can access the information in the database that is set by other servers.** In other words, notwithstanding the cookie security feature described above, the present invention allows servers with distinct domain names to access state information generated by other servers.

EX1006, 7:46-58, 3:28-30 (“the technique of the invention allows all cooperating servers to share information via a database”), 4:52-63 (“The common protocol relies upon a common database of information, such as that available in [database] server computer 25”).

226. Rosenberg also provides an example demonstrating that the profile information is available to a web server and, by extension, the publisher controlling the web server. When the user requests a page from a web server, the web server determines if a cookie has been set for the user, which contains the unique identifier for the user’s browser that is shared among the web servers and the database server. EX1006, 6:59-67, Fig. 6. If so, the web server “fetch[es] information from the database 25 that is particular to this browser 34” based on the identifier, to “generate a response that is customized for the [user’s] browser.” *Id.* Thus, the partial profile is “available to one of the third parties,” e.g., one of the third parties controlling a web server, because the web server can use the user’s unique identifier to fetch the user’s profile from the database server, which includes partial profile attributes that the plurality of web servers sent to the database server.

227. Furthermore, when the user requests a page from a web server, the web server determines whether a cookie has been set for the user, which contains the unique identifier for the user’s browser that is shared among the web servers and database server. EX1006, 6:59-67, Fig. 6. This cookie identifier is a partial profile

available to the web server and, by extension to the third party publisher operating the web server. The partial profile is also available to the web server that conveys the partial profile of the user to the database server because the web server encodes the partial profile into the redirect link as I discuss for limitation [1.a(i)].

[1.a(iii)] “... which partial profile is received along with an identification of the one of the third parties that contributed the partial profile,”

228. Rosenberg in combination with Merriman¹⁵⁴ discloses that the partial profile “is received along with an identification of the one of the third parties that contributed the partial profile.” In Rosenberg’s system, a web server contributes the partial profile it collects to the database server. EX1006, 5:55-62. And the partial profile identifies the web server that collected and contributed it. Rosenberg demonstrates that the partial profile identifies the web server in figure 3, which illustrates the data structure in which database server stores the partial profile:

Cookie ID #	Last Visit to Server_A	Content Requested			Last Visit to Server_B	Content Requested		
		News	Product Info	Feature Story		News	Product Info	Feature Story
123	4-9-96;18:25	2	5	0	7-4-96;16:23	1	7	3

Figure 3

EX1006, Fig. 3, 5:66-6:5. Figure 3 shows that the partial profile identifies the specific websites visited and the types of content requested by user from the respective websites. Therefore, a POSITA would have understood and found

obvious that the database server receives the partial profile along with an identification of the web server that contributed the partial profile because Rosenberg discloses that the identity of the web server that collected and contributed the partial profile is stored in the database.

229. In more detail, figure 3 illustrates that the profile for a particular user (corresponding to cookie ID #123) is divided into data tracking the user's activity on pages provided by each of two different web servers, Server_A and Server_B. A POSITA would have understood that to associate a received partial profile with a specific web server (e.g., Server_A or Server_B), the database server would obviously receive an identification of which server contributed it. And it would have been obvious to provide this identification along with the partial profile because that is an efficient and convenient time to provide it.

230. As I explain above for limitation [1.a(i)], in the combination with Merriman154, Rosenberg is modified to receive partial profiles from the web servers via electronic URL-redirection using spotlight tags. Merriman154 specifically discloses that the spotlight tag includes embedded "information such as information identifying the specific advertiser web page" being visited by the user. EX1007, 4:54-61. A POSITA would have understood and found obvious that the "information identifying the specific advertiser web page" also identifies the web server on which the web page is hosted, and by extension identifies the third-party

publisher that operates the web server contributing the partial profile. Merriman154 essentially says as much: “[r]eceipt of the message 13 back at the advertising server 14 in effect, reports (in real time) to the advertising server that the user has accessed the...respective page **while browsing at the advertiser’s web site.**” EX1007, 5:46-49. The spotlight tag thus includes both the partial profile and the identity of the third party that contributed the partial profile. To the extent further modification of Rosenberg is required to embed additional information into the spotlight tag as taught by Merriman154, or more generally to include additional information with an electronic URL redirection, a POSITA would have found such modification obvious for the same reasons I provide above for limitation [1.a(i)].

231. In addition, a POSITA would have found it obvious that the database server receives “identification of the one of the third parties that contributed the partial profile” for a separate reason. The HTTP “Referer tag” that accompanies the electronic URL-redirectioned request message identifies the web server that caused the redirection. Both Rosenberg and Merriman154 disclose that communications among the various computers use HTTP. *See* EX1006, 1:26-31, 2:36-46, 9:8-16; EX1007, 5:9-21. A POSITA would have understood that messages transmitted using HTTP typically include a “Referer [sic] request-header field [that] allows the client,” e.g., the user’s browser, “to specify, for the server’s benefit, the address (URI) of the resource from which the Request-URI was obtained.” EX1010, 140.

This “resource” “from which the Request-URI was obtained” is the URL of the web page that contains the redirect, which identifies the web server that provided the page.

232. Mena confirms that the “Referer” information is captured by the web server receiving the request in a Referrer Log, which “captures the location your website visitors came from and how they found you,” such as “a link from another page.” EX1009, 213. Mena further notes that “this is very important information.” *Id.* Therefore, a POSITA would have recognized that the redirected request received by Rosenberg’s database server via HTTP would have obviously identified the web server that contributed the partial profile in the HTTP Referer request-header field.

[1.a(iv)] “and automatically with the computer system storing the received partial profile;”

233. Rosenberg, alone and in combination with Merriman154, further discloses that the computer system automatically stores the received partial profile. Rosenberg discloses that the database server stores the received partial profile in a database to form a maintained profile for the user. EX1006, 3:28-35, 4:52-63, 5:55-6:9, 7:1-58. Merriman154 likewise discloses storing profile information in a database. EX1007, 4:34-36. A POSITA would have found it obvious that the database server stores the partial profile automatically because Rosenberg discloses a computerized system and this is an obvious way to implement a computerized system. Also, nothing in Rosenberg suggests manual effort is required to store the

received partial profile. In addition, in the combined system, which uses spotlight tags as taught by Merriman154 to “provide[] real time reporting of user activities,” a POSITA would have understood that the collection and storage of user information would be automated, to achieve the described “real time” capability. EX1007, 4:62-5:3.

[1.b] “(b) automatically with the computer system electronically adding the received partial profile to a maintained profile believed to be related to the same entity;”

234. Rosenberg in combination with Merriman154 discloses limitation [1.b]. Rosenberg discloses that the database server stores a maintained profile for a user in a data structure:

Cookie ID #	Last Visit to Server_A	Content Requested			Last Visit to Server_B	Content Requested		
		News	Product Info	Feature Story		News	Product Info	Feature Story
123	4-9-96;18:25	2	5	0	7-4-96;16:23	1	7	3

Figure 3

EX1006, Fig. 3; 5:55-6:9. Each maintained profile includes a “Cookie ID #” which is the unique identification number for a given user (an entity) shared among the web servers and database server. EX1006, 5:16-65. For each user represented by the identification number, the data structure includes information on past activities and interactions between the user and each of the web servers (e.g., “Last Visit to

Server_A”, “content requested”), as well as other information such as “a user name, a password, and demographic information.” EX1006, 5:55-62, 7:1-9, 7:19-29.

235. Rosenberg discloses that the database server adds a newly-received partial profile for a user to the user’s maintained profile in the data structure. EX1006, 3:25-36, 4:40-44, 5:55-62, 7:22-29. For example, Figure 3, shown above, indicates that user “123” last visited “Server_A” on April 9, 1996 and last visited “Server_B” on July 4, 1996. A POSITA would have understood that database server received the partial profiles describing these visits at different times, given the database server receives partial profiles from the web servers “typically at the end of a day or at other times when network traffic is light.” *Id.*, 5:59-62. A POSITA would have likewise understood that the database server adds a later-received partial profile to a maintained profile for the same user containing the earlier-received partial profile given that the database stores “cumulative information” about users. *Id.*, 3:25-36, 4:40-44, 7:22-29.

236. Furthermore, Rosenberg’s database server adds a partial profile to a maintained profile believed to be related to the same entity by adding the partial profile to a maintained partial profile having a “Cookie ID #” field matching a cookie identifier received with the partial profile. EX1006, Abstract, 5:8-54, 5:63-65, 7:46-55. A POSITA would have understood from Rosenberg’s disclosure that the database server “believes” the matching cookie identifiers to be related to the same

entity because a goal of Rosenberg's system is to use a unique cookie identifier for each respective user, so that the user can be tracked across the web. *Id.*, Abstract (“the web browser is tracked across distinct domains of the World Wide Web” using a unique identification code and, “[a]s a result, the web browser can be passively tracked to identify content preferences and interests associated with the individual using the web browser”).

237. A POSITA would have understood that Rosenberg's database server “automatically” and “electronically” adds the received partial profile to a maintained profile because these operations are performed using a computer. EX1006, 4:16-64, 7:46-61. Nothing in Rosenberg suggests any manual user involvement in storing the received partial profile. *Id.*

238. In the combination with Merriman154, Rosenberg is modified to receive a user's partial profile from a web server via electronic URL-redirection using a spotlight tag and adds the partial profile to the user's maintained profile in the data structure in the same manner. The database server reads the ID from the user's browser cookie received with the URL-redirection, as taught in both Rosenberg and Merriman154, and adds the received partial profile to the maintained profile having the matching “Cookie ID #” value, as taught in Rosenberg. EX1006, Abstract, 2:14-62, 5:8-54, 5:63-65, 7:46-61; EX1007, 5:56-57. As a result, the

database server receives the partial profiles for the users from the web servers, and updates the maintained profiles, in real time. EX1007, 3:37-38, 4:66-5:2.

239. A POSITA would have been motivated to make this combination because it allows Rosenberg's database server to update a user's maintained profile in real-time and enables better targeted advertising. A POSITA would have reasonably expected this combination to be successful because the database server uses the same technique taught in Rosenberg to add the partial profiles to the maintained profiles, and because Merriman¹⁵⁴ discloses how to add partial profiles received using spotlight tags to maintained profiles in a database. EX1007, 4:67-5:3, 5:43-51, 5:56-63. Any additional modifications required for the combination would have been obvious for the reasons I provided for limitation [1.a(i)].

[1.c] “(c) automatically with the computer system generating and storing an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes;”

240. Rosenberg discloses this limitation. As I discuss for limitations [1.a(i)] and [1.a(iii)], Rosenberg in combination with Merriman¹⁵⁴ discloses that the database server receives partial profiles along with identifications of the unaffiliated third parties that contributed the respective partial profiles. Rosenberg also discloses that the database server automatically generates and stores an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes.

241. Rosenberg’s Figure 3 shows an example data structure the database server uses to store the received information:

Cookie ID #	Last Visit to Server_A	Content Requested			Last Visit to Server_B	Content Requested		
		News	Product Info	Feature Story		News	Product Info	Feature Story
123	4-9-96;18:25	2	5	0	7-4-96;16:23	1	7	3

Figure 3

EX1006, Fig. 3. The data structure records which servers a user visited, when the user last visited those servers (shown by the annotation), and the types of content the user requested from those servers. EX1006, 5:55-6:22. Given Rosenberg discloses that a web server contributes the partial profile it collects to the database server, a POSITA would have found it obvious that the data structure stores an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes. For example, the data structure stores a record indicating that Server_A contributed a profile attribute indicating that the user with Cookie ID # 123 last visited Server_A on April 9, 1996.

242. A POSITA would likewise have found it obvious that the database server automatically generates and stores such electronic records in the data structure. EX1006, 5:55-62. The database server is one of a group of server computers that “cooperatively observe a common protocol” to “track web browsers

across distinct domains.” *Id.*, 4:52-64. Thus, a POSITA would have understood the database server to be operating automatically, without manual intervention, to cooperate with the other server computers. Moreover, Rosenberg confirms that URL redirections occur automatically, and a POSITA would have understood that the database server automatically generates, and stores records of partial profile information received via the automatic redirections. *Id.*, 9:15-17 (“As long as image loading is enabled for the browser, the request will be made automatically, without the need for human action.”).

[1.d] “(d) wherein the maintained profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network.”

243. Rosenberg alone and in combination with Merriman¹⁵⁴ discloses this limitation. First, Rosenberg discloses that the web servers include a “customized response generator” that uses data of the maintained profile, including the added partial profile, to “prepare customized responses to browser inquiries.” EX1006, 4:39-44. When a web server receives a request from a user, the web server retrieves the user’s maintained profile, which includes added partial profiles, from the database of the database server. *Id.*, 6:59-7:17. The web server then uses this information to “return a customized page to the client computer.” *Id.* For example, if the maintained profile “indicates that the individual using the specified browser

requests a large amount of product information, the returned page is generated to emphasize product information.” *Id.*

244. While Rosenberg does not explicitly disclose that the “customized page” contain “target[ed] third-party advertisements,” a POSITA would have found this obvious based on Rosenberg’s disclosure that one of the purposes of collecting and maintaining user profile information “to learn as much as possible about the customer” is to allow “advertisers to tailor their content to users.” EX1006, 1:35-42, 3:4-8, 7:42-46. A POSITA would have found it obvious for tailored content from an advertiser to be targeted advertisements, where “appropriate advertisements” are selected based on profile information including preferences and demographics. *Id.* It thus would have been obvious to implement Rosenberg to provide “customized responses” to users that include advertisements targeted to the users based on the users’ maintained profiles. *Id.*

245. In addition, a POSITA would have found it obvious for the advertisements to be “third-party.” For example, a POSITA would have been aware of the role played by online advertising in facilitating access to free content on the Internet. EX1008, 55 (“[t]he Internet culture was founded on free access to information, but its content is extremely expensive to produce... Web publishers are hoping that advertising will cover the lion's share of the costs for their publishing ventures”). Indeed, Rosenberg teaches that many websites can “distribute

information such as news, product reviews, and literature” that is “typically free to the user,” by underwriting the cost through advertising. EX1006, 1:32-35. A POSITA would have found it obvious for the controller of a web server, such as a website publisher, to cover operating costs of their website by running ads from third-party advertisers. EX1008, 26-31 (describing website publishers that publish sites having “advertising space to sell,” which is purchased by advertisers).

246. Also, a POSITA would have found it obvious to modify Rosenberg to use the data of the maintained profiles for targeting third-party advertisements, based on the teaching of Merriman154. Like Rosenberg, Merriman154 discloses maintained profiles that track “the activities of visitors” on various websites. EX1007, 4:41-5:3. Merriman154 further discloses using this profile data to target (or re-target) third-party advertisements to the user, by “identifying the user and matching an advertisement to the user, based on various criteria,” such as the user’s “past behavior.” *Id.*, 5:28-32. For example, records of the user’s past activities as reflected in the maintained profile are evaluated against “selection criteria” of a third-party ad to determine whether the user is suitable for targeting by a particular ad. *Id.*, 5:63-65. If the user’s profile indicated that they had “looked at product X description at a given web site at least twice in the last two weeks, but did not purchase,” then a particular advertisement may be targeted to the user when the user visits another site. *Id.*, 5:60-6:1.

247. A POSITA would have been motivated to combine Rosenberg and Merriman154 such that in the combined system, the data of the maintained profile (which includes the added partial profiles) is used by a web server that has access to the maintained profile for the purpose of targeting third party advertisements. For example, a POSITA would have found it obvious for a publisher controlling a web server to sell ad space on the corresponding website and use the maintained profile to return a “custom page” to the user that includes third party advertisements targeted based on the maintained profile. A POSITA would have been motivated to combine Rosenberg and Merriman154 in this way to beneficially provide targeted advertising using the maintained profile, such as the re-targeted advertising taught by Merriman154.

2. Claim 3: “The method of claim 1 wherein the computer system electronically adding the received partial profile to a maintained profile believed to be related to the same entity comprises the computer system adding the received partial profile to a maintained profile believed related to the same entity on account of the received partial profile and the maintained profile being related to the same user computer.”

248. Rosenberg in combination with Merriman154 discloses claim 3. As I discuss above for limitation [1.b], Rosenberg is modified by Merriman154 so that the database server adds a received partial profile to a stored maintained profile “believed to be related to the same entity” based on matching a cookie identifier received with the partial profile to the “Cookie ID #” field in a maintained profile. EX1006, 5:8-54, 5:63-65, 7:46-55. The cookie identifier received with the partial

profile is stored and sent to the database server by a browser executing on a user computer (which Rosenberg calls a “client computer”). *Id.*, 7:47-50, 2:6-3:3, 4:7-15, 5:1-20, 7:29-40; EX1007, 5:55-59.

249. A POSITA would have understood that the cookie stored on the user computer that is redirected to the database server identifies the particular user computer, or more specifically, a browser on the user computer. *See* EX1008, 43 (“Cookies are mapped to the browser”); EX1009, 219, 225. Thus, in the combined system, the system adds the partial profile to the maintained profile on account of the partial profile and the maintained profile being related to the same user computer.

3. Claim 4: “The method of claim 3 wherein the computer system determines that the received partial profile and the maintained profile are related to the same user computer by automatically reading a cookie on the user computer.”

250. Rosenberg in combination with Merriman154 discloses claim 4. As discuss above for claim 3, Rosenberg in combination with Merriman154 discloses that the database server uses a cookie to determine that the received partial profile and the maintained profile are related to the same user computer. The database server automatically reads this cookie from the user computer when receiving the redirected partial profile. EX1006, 7:47-50, 2:6-3:3, 4:7-15, 5:1-20, 7:29-40; EX1007, 5:55-59; EX1008, 43; EX1009, 219, 225. Rosenberg in combination with Merriman154 therefore discloses claim 4.

4. Claim 5: “The method of claim 1 further comprising automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the maintained profile, the profile attributes used in targeting the advertisements.”

251. Rosenberg in combination with Merriman154 discloses claim 5. As I discuss above for limitation [1.c], Rosenberg discloses “automatically with the computer system generating and storing an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes.” An example of this disclosure is shown in Figure 3 of Rosenberg, which illustrates a data structure maintained by the database server containing an electronic record indicating that server A and server B, which may be controlled by unaffiliated third parties, each contributed different profile attributes describing content requests on the respective servers made by the user browser corresponding to “Cookie ID #123.” EX1006, Fig. 3 (reproduced below).

Cookie ID #	Last Visit to Server_A	Content Requested			Last Visit to Server_B	Content Requested		
		News	Product Info	Feature Story		News	Product Info	Feature Story
123	4-9-96;18:25	2	5	0	7-4-96;16:23	1	7	3

Figure 3

252. In addition, as I discuss above for limitation [1.d], the combination of Rosenberg and Merriman154 discloses that the partial profile is added to the maintained profile, where the maintained profile, including the added partial profile,

is used in targeting advertisements. Since any of the profile attributes of the maintained profile, including those of the added partial profile, may be used in targeting advertisements, a POSITA would have understood the combination to maintain a record of which unaffiliated third party contributed to the maintained profile the profile attributes used in targeting the advertisements.

253. Claim 5 is likewise obvious in view of the combination if it requires maintaining a record of which unaffiliated third party contributed, to the maintained profile, the profile attributes *that were actually used* to target advertisements. Merriman¹⁵⁴ discloses re-targeted ads in which an advertiser targets an ad to a user based on the user's "own past behavior at that specific advertiser's web site." EX1007, 3:20-4:10, 5:60-6:16. The profile attributes that were actually used to target re-targeted ads are therefore contributed by the advertiser's web site, and the database server maintains a record indicating that the advertiser website contributed these profile attributes as discussed for limitation [1.c]. Therefore, the record indicates that the advertiser website and, by extension, the third party publisher operating the website, contributed, to the maintained profile, the profile attributes that were actually used to retarget ads to that website's visitors.

254. It would have been obvious to use re-targeted ads in the combination of Rosenberg and Merriman¹⁵⁴. The combined method operates as I describe for claim 1, except that Rosenberg's web servers use re-targeted ads as the "customized

responses to browser inquiries.” EX1006, 4:39-44. A POSITA would have found it obvious to use re-targeted ads because “it is considered highly desirable to target advertisements to the appropriate potential customer base.” EX1007, 1:27-28. A POSITA would have understood that using “past activities of users...as a criteria for selection of re-targeted advertising” is a precise form of targeted advertising and is likely to produce positive results, and would have been motivated to use re-targeted advertising for this reason. EX1007, 6:18-19; EX1008, 16, 18-19, 34, 39-41, 50. Using re-targeted advertising is also a simple substitution of one type of targeted advertising for another that predictably results in showing the user a targeted ad.

5. Claim 6: “The method of claim 1 further comprising automatically with the computer system electronically determining whether the received partial profile contains any profile attributes about the entity that were not previously contained in a maintained profile.”

255. Rosenberg in combination with Merriman¹⁵⁴ discloses claim 6. Rosenberg discloses that the database server includes a data structure that maintains profiles on a per user (Cookie ID #) basis. EX1006, 5:55-6:22. For a given user, the data structure includes profile attributes identifying respective web servers, specifying the date and time of the user’s last visit to the identified web servers, and indicating the types of content the user requested from those web servers.

Cookie ID #	Last Visit to Server_A	Content Requested			Last Visit to Server_B	Content Requested		
		News	Product Info	Feature Story		News	Product Info	Feature Story
123	4-9-96;18:25	2	5	0	7-4-96;16:23	1	7	3

Figure 3

EX1006, Fig. 3. The example data structure shown above “is simplified for the purposes of illustration [and a] typical data structure includes entries for previous visits, more specific entries regarding content requests, and additional entries for a large number of servers.” *Id.*, 6:6-9.

256. In the combination of Rosenberg and Merriman¹⁵⁴, Rosenberg’s database server is modified to receive the partial profile from a web server via electronic URL-redirection using a spotlight tag, where the spotlight tag includes embedded information identifying the specific web page and web server being visited by the user. EX1007, 4:54-61, 5:46-49. Here, a POSITA would have understood that the database server may receive a partial profile from a web server the user has not previously visited, at least because there are a large number of web servers on the Internet. EX1006, 1:14-16; EX1008, 26.

257. Therefore, a POSITA would have found it obvious for the database server to check whether the user’s maintained profile includes an entry for the web server from which the partial profile was received. If not, a POSITA would have

found it obvious for the database server to make a new entry in the data structure for the web server, so it could store the received partial profile in the maintained profile. A POSITA would have found this approach obvious to try; the database server could either create entries for web servers in advance or create the entry for a given web server when a partial profile is received from that web server. A POSITA would have recognized that creating an entry for a web server when partial profile is first received from that web server is a scalable and efficient approach because it allows the data structure to support any number of web servers while only creating entries for particular web servers when needed and would have reasonably expected this technique to be successful.

258. Further, this approach involves the database server automatically electronically determining whether the received partial profile contains any profile attributes about the user that were not previously contained in a maintained profile. For example, the database server determines whether it has an entry for a web server from which it received a partial profile for the user to determine whether it should make a new entry for the web server. Therefore, claim 6 is obvious in view of the combination of Rosenberg and Merriman¹⁵⁴.

6. Claim 9: “The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the maintained profile based on the source thereof.”

259. Rosenberg in combination with Merriman154 discloses claim 9. As I discuss for claim 5, Merriman154 discloses selecting a re-targeted ad for a user based on the user’s “past behavior” at a “specific [] web site.” EX1007, 3:29-34. For example, Merriman154 discloses targeting an ad to “users who looked at product X description at a given web site at least twice in the last two weeks, but did not purchase.” *Id.*, 5:66-6:1. In the combination of Rosenberg and Merriman154, the database server receives profile attributes about website visits from the web server providing the site. Therefore, when the database server selects profile attributes indicating the user’s past behavior at a “specific web site” for purposes of targeted advertising, the database server is automatically selecting profile attributes of the maintained profile based on the source thereof.

7. Claim 10: “The method of claim 1 further comprising automatically with the computer system electronically reading a cookie previously stored on the entity’s computer, as a result of the URL redirection.”

260. Rosenberg in combination with Merriman154 discloses claim 10. In combination, Rosenberg’s database server is modified to receive the partial profile from a web server via electronic URL-redirection using a spotlight tag. EX1007, 4:54-61, 5:46-49. Further, as I discuss for limitation [1.b], Rosenberg renders obvious that a web server may provide a user’s cookie identifier to the database

server via URL redirection in the same manner it provides the cookie identifier to other servers. *See* EX1006, 4:52-63. Additionally, a POSITA would have understood that this allows the database server to cause the user's browser to store a cookie having the identifier, which the browser automatically reports to the database server in subsequent interactions such as interactions resulting from URL redirection. *Id.*, 2:5-3:3, 5:21-54; EX1007, 5:46-49; EX1009, 218-219, 223; EX1008, 40-41. The database server thus automatically electronically reads a cookie previously stored on the user's computer as a result of the URL redirection when the database receives a partial profile from a web server via electronic URL-redirection using a spotlight tag. The browser automatically reports the previously-stored cookie as part of the redirection, and the database server automatically electronically reads it. *See* EX1008, 40-41; EX1009, 218-219, 223, 267.

8. Claim 11

261. Claim 11 is unpatentable for similar reasons as for claim 1. The preamble of claim 11 recites “[a] computer system programmed and connected to perform a method of collecting profiles of Internet-using entities, the method comprising...” The claimed “computer system” is met by at least Rosenberg's database server, which is programmed computer connected to other computers via a network and which performs a method. EX1006, 3:66-4:63. The remaining elements of claim 11 are substantively identical to those of claim 1.

9. Claims 13-16, 19, and 20

262. Claims 13-16, 19 and 20 are substantively identical to claims 3-6 and 10, and are unpatentable for the same reasons.

10. Claim 21

263. Claim 21 is unpatentable for similar reasons as for claim 1. *See* §VIII.B.1. The preamble of claim 21 recites “[a] tangible, non-transitory data storage medium comprising indicia of instructions for a processor to perform a method of collecting profiles of Internet-using entities, the method comprising...” Rosenberg teaches this medium because the database server’s processes are implemented using “standard server computer components,” including “a network connection circuit 60, a CPU 62, and a memory 64 including a browser, information database program 64, among other programs” that execute stored instructions, which a POSITA would have understood to include a data storage medium comprising indicia of instructions and a processor for executing the stored computer instructions. EX1006, 4:25-26, 4:47-51. Similarly, Merriman¹⁵⁴ teaches “[a] machine-readable medium storing instructions adapted to be executed by a processor” to cause the advertising server 16 to perform certain operations. EX1007, 9:1-26. The remaining elements of claim 21 are substantively identical to those of claim 1.

11. Claims 23-26, 29, and 30

264. Claims 23-26, 29 and 30 are substantively identical to claims 3-6 and 10, and are unpatentable for the same reasons.

C. Claims 7-8, 17-18, and 27-28 of the '904 patent are obvious over Merriman061, Jaye, and Coleman, or Rosenberg, Merriman154, and Coleman.

265. As explained in further detail below, claims 7-8, 17-18 and 27-28 of the '904 patent would have been obvious to a POSITA based upon combining Coleman with either the combination of Merriman061 and Jaye (“Merriman061-Jaye”), or the combination of Rosenberg and Merriman154 (“Rosenberg-Merriman154”) (collectively, the “primary combinations”).

1. Coleman (EX1019)

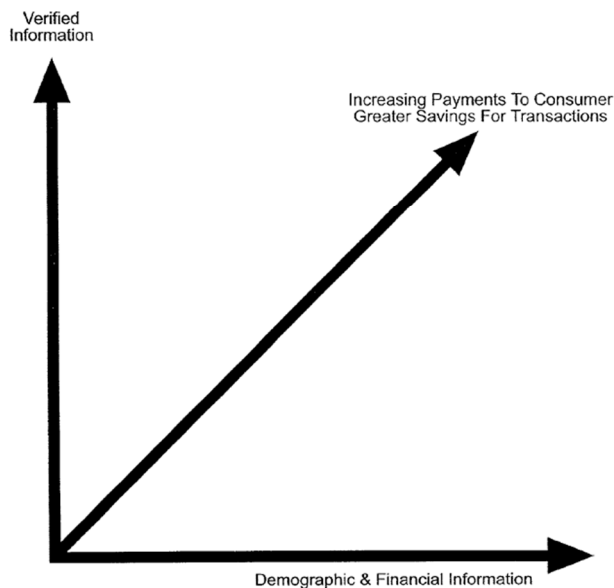
266. Coleman was filed on June 30, 1999, and published on February 28, 2002. EX1019. I understand Coleman is prior art to the '904 patent because its filing date predates the December 13, 1999 effective filing date of the challenged patent. I form no opinion as to whether Coleman is entitled to an earlier priority date.

267. Coleman discloses methods for presenting advertisements to “targeted potential purchasers,” based on “the potential purchaser’s profile information.” EX1019, Abstract, [0002], [0022], [0063], [0117]. As with the prior art used in the primary combinations, Coleman explains that targeted advertising based on profiles about the target audience was a well-known practice in media such as television and radio, and provides more effective advertising spend than untargeted advertising. EX1019, [0005]-[0006]; EX1004, 1:13-22, 45-53; EX1006, 1:35-44. As Coleman and the art of the primary combinations all explain, these principles can further be

applied to targeted advertisements delivered over networks such as the Internet. *See* EX1019, [0051], [0061], [0104], [0111]-[0112], FIG. 11; EX1004, Abstract, 1:8-11, 1:64-2:3; EX1005, 1:18-27; EX1006, 1:35-47; EX1007, 2:5-45.

268. Recognizing that “the value of certain types of personal profile information” to advertisers increases as “the quality or verifiability of the information increases,” Coleman also discloses that received profile information may be “verified for accuracy” and the profile updated to increase its value. *Id.*, [0049], [0056], [0073]-[0075], FIG. 2 (reproduced below), FIG. 4 (steps 411 and 415).

Fig. 2



EX1019, FIG. 2. To verify the accuracy of received profile information, Coleman discloses that the information “may be verified by comparing it to information in a variety of other databases, such as public databases maintained by cities, counties, or states, or other governmental entities, or private databases which may be accessed, perhaps for a certain price.” *Id.*, [0074]. Following verification, the “potential purchaser’s profile” is “updated to reflect information from which verification... was successful and information from which verification... was not successful.” *Id.*; *see also* [0075] (“information in a potential purchaser’s profile may also be updated from time to time to ensure that current information is in the system”).

2. A POSITA Would Have Been Motivated to Combine Coleman with each of the Merriman061-Jaye and Rosenberg-Merriman154 Combinations

269. In my opinion, a POSITA would have been motivated to combine each of Merriman061-Jaye and Rosenberg-Merriman154 with Coleman. Coleman, being related to targeting advertisements on the Internet based on “personal profile information” maintained in a database, is analogous art to the references of the primary combinations and to the challenged patent. *See, e.g.*, EX1019, [0002] (“This invention relates to pooling and advertising methods and systems for... targeted commercial messaging”); [0006] (describing desirability for advertisers to “identify and selectively advertise to those potential purchasers who fit a profile of probable purchasers”); [0022] (applying “the commercial message selection criteria to the

purchaser profiles to identify the potential purchasers suited to receive specified commercial messages”); [0045] (database “used to store the information... which may be used in the present invention”); [0049] (discussing “the value of certain types of personal profile information”); [0063] (describing a filter to “allow[] the advertisements... to be presented to certain targeted potential purchasers”); [0104] (advertisements may be “presented over the Internet”).

270. Coleman discloses that for “certain types of personal profile information,” such as demographic information, the value of the information to advertisers increases as “the quality or verifiability of the information increases.” EX1019, [0049]. Accordingly, Coleman discloses techniques for verifying gathered profile information for accuracy, e.g., through comparison with “outside sources of information.” *Id.*, [0056], [0073]. Like Coleman, Merriman061-Jaye and Rosenberg-Merriman154 also disclose that maintained profiles may include demographic information. *See, e.g.*, EX1004, 4:44-55, 5:50-60 (ad server “obtains from a database all of the information known about [a] user”); EX1005, 10:36-39; (user’s “interest information can be combined with the user’s demographic . . . information”) 13:19-29; EX1006, 1:37-41 (“advertisers like to know audience demographics”); 3:28-36 (database includes demographic and tracking information), 7:19-29 (data structure of Fig. 7 includes a field for “demographic information”). A POSITA in possession of the Merriman061-Jaye and/or

Rosenberg-Merriman154 combinations would have been motivated to incorporate Coleman's techniques for verifying and updating demographic information included in a profile to increase the value of the gathered information in Merriman061-Jaye and Rosenberg-Merriman154 and improve ad targeting. I provide additional motivations to combine the references below.

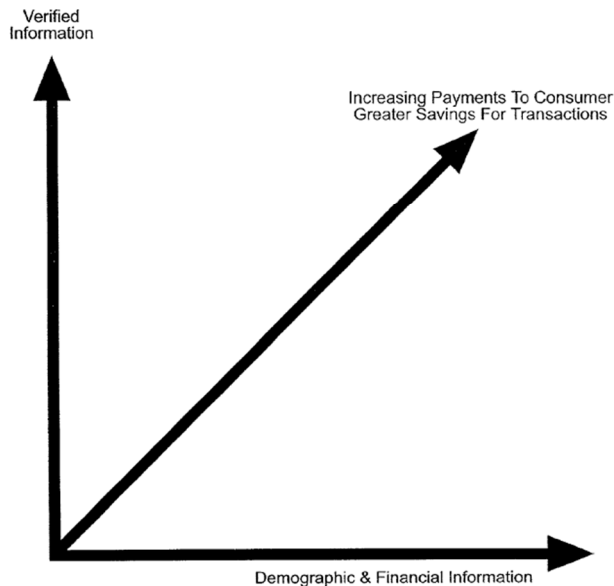
3. Claim 7: “The method of claim 1 further maintaining with the computer system a credibility rating associated with at least one of the profile attributes of the maintained profile.”

271. Claim 7 depends from claim 1, which is taught by Merriman061-Jaye and by Rosenberg-Merriman154 as I discussed above. Claim 7 would have been obvious to a POSITA based on either of the primary combinations combined with Coleman.

272. As I discussed above, Coleman, like the references of the primary combinations and the challenged patent, is related to targeting advertisements on the Internet, based on “personal profile information” maintained in a database. *See, e.g.*, EX1019, [0002], [0006], [0022], [0045], [0049], [0066]; *see also* EX1004, 1:64-2:3, 5:64-6:11 (advertisements associated with “targeting profile criteria”), 6:54-56 (selected advertisement is “one that has a matched profile”); EX1006, 1:37-40 (“advertisers like to know audience demographics... to more accurately choose appropriate advertisements”), 3:30-37 (“cumulative information” about a user “used to provide responses tailored toward the individual using the web browser”);

EX1007, 2:50-55 (advertising server “is able to compile information that can be used for targeting advertising”). Coleman further recognizes that “certain types of personal profile information,” including “demographic, financial, and other information,” are more valuable to advertisers when “the quality or verifiability of the information increases,” as it enables advertisers to make more reliable predictions as to whether potential purchasers are likely to buy an offered product or service. EX1019, [0049]; FIG. 2 (reproduced below, where the “y-axis indicates that as the quality or verifiability of the information increases, so does the value to a seller”).

Fig. 2



273. To increase the value of gathered profile information, Coleman discloses that as profile information is received and “updated in real time,” it is “verified” for accuracy “by contacting outside sources of information,” and “comparing it to information in” other databases. EX1019, [0056], [0073]-[0075]. Coleman further explains that the maintained profile is then “updated to reflect information from which verification with secondary sources was successful and information from which verification... was not successful.” *Id.*, [0074].

274. A POSITA would have recognized that the “information” of Coleman’s profile corresponds to “profile attributes” of a “maintained profile” in the challenged patent. *See, e.g.*, EX1019, [0006] (“demographic and financial information” includes attributes such as “financial status, age, residence, family size/configuration, and interests”); FIGs. 6a-6c (showing different types of profile attribute information). A POSITA would also have recognized that the verification information added to the profile is a “credibility score” associated with the profile attributes, because it indicates an extent to which the profile attributes were verified and “considered reliable.” *Id.*, [0049]. This is consistent with the disclosure of the ’904 patent that describes increasing credibility for an attribute based on verification—“search[ing] one or more external databases,” by giving attributes “a higher rating as to credibility” if they exist “both in the [profile] databank and in the other databases.” EX1001, 16:14-26.

275. Given the disclosures of the primary combinations and Coleman, a POSITA would have found it obvious to combine either of the primary combinations with Coleman, where at least one of the profile attributes of the maintained profile in the primary combination would be verified and associated with verification information as taught by Coleman. Like Coleman, both primary combinations disclose that maintained profiles may include demographic information used for targeted advertising. For example, in Merriman061-Jaye, Merriman061 discloses user profiles maintained in a “database structure,” which, in Jaye, can include “demographic or geographic information... collected through conventional means,” and used to provide “detailed market analysis” for an advertiser. EX1004, 4:44-55, 5:50-60 (ad server “obtains from a database all of the information known about [a] user”); EX1005, 10:36-39; 13:19-29. A POSITA would have found it obvious to use Jaye’s demographic information as part of the profile maintained in Merriman061’s database. An example is shown in the modified FIG. 3A of Merriman061 below, where Merriman061’s “database structure” stores information for “each user identified by the system” as a POSITA would have modified it to include additional fields (highlighted in red) for storing “demographic information” as taught by Jaye.

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	Demo. Info
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EX1004, FIG. 3A (modified), 4:43-54; EX1005, 10:34-39 (user profiles may include interest information and demographic information); 13:19-23 (user profile can “include demographic or geographic information which is collected through conventional means”).

276. Similarly, in Rosenberg-Merriman154, Rosenberg recognizes that “advertisers like to know audience demographics... to more accurately choose appropriate advertisements,” and discloses that the data structure storing maintained profile data may include “active demographic information” in addition to “passive tracking information” associated with the individual using the web browser. EX1006, 1:37-41; 3:28-36, 7:19-29.

ID#1	ID#2	Last Visit to Server_A	Content Request	Last Visit to Server_B	Content Request	Name	Pass-word	Demo Info

Figure 7

EX1006, FIG. 7 (annotations added). The combination of Rosenberg with Merriman154 preserves this feature of Rosenberg.

277. In each combination of a primary combination with Coleman, when profile attribute information such as demographics information is gathered (via any of the channels discussed above) and added to the maintained profile, a POSITA

would have recognized the benefit of verifying the information by comparing it to information from one or more “outside sources,” e.g., “other databases,” to increase the value of the information as taught by Coleman. EX1019, [0056], [0074]. As taught by Coleman, the maintained profile is then updated with verification information associated with the attribute, e.g., indicating whether “verification [of the information] with secondary sources was successful” or not. *Id.*, [0074]. A POSITA would have found it obvious for the verification information to be associated with the profile attribute that was verified and could do so by any number of ways, including by adding a numerical value or “score” related to the attribute that was or was not verified. For example, it would have been obvious for the verification information to include binary values indicating whether particular attributes were successfully verified. *See* EX1019, [0074]. Coleman also renders obvious that the verification information may include a range of score values, where the value of the information increases as the “verifiability of the information increases.” EX1019, [0049], FIG. 2 (illustrating a y-axis showing a range of “verifiability”).

278. For example, in the combination with Merriman061-Jaye, a POSITA would have found it obvious, based on the teaching of Coleman, to modify the Merriman061-Jaye database structure storing the maintained and updated profile to include additional fields that store verification information (highlighted in green in

the modified FIG. 3A of Merriman061 shown below) associated with one or more of the demographic information attributes (highlighted in red) of the maintained profile.

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	Demo. Info	Demo. Info Verif.
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EX1004, FIG. 3A (modified). A POSITA would have found this to be an obvious modification as adding additional fields to a data structure was a well-known way of updating a database with new information, which a POSITA could have readily implemented.

279. A POSITA would also have found it obvious to make a similar combination of Rosenberg-Merriman154 with Coleman, to verify received profile attributes and update the profile to include verification information associated with the attribute. An example is shown in the modified FIG. 7 of Rosenberg below, which adds a field for verification information associated with the demographic information attributes of the maintained profile.

ID#1	ID#2	Last Visit to Server_A	Content Request	Last Visit to Server_B	Content Request	Name	Pass-word	Demo Info	Demo. Info Verif.

Figure 7

EX1006, FIG. 7 (modified). A POSITA would have found this to be an obvious modification as the combination involves only routine database operations known to and readily implemented by a POSITA.

280. A POSITA would have been motivated to make these combinations to improve the effectiveness of targeted advertisements. A POSITA would have been aware of different types of information, including “demographic, financial, and other information,” usable for targeted advertising. EX1019, [0049]; *see also, e.g.*, EX1006, 1:37-42 (“advertisers like to know audience demographics... to more accurately choose appropriate advertisements”); EX1005, 13:24-31 (describing use of demographic information to perform analysis on “the interest levels of certain demographic groups in certain subject matter... to identify link interest between seemingly disparate subject matters”). A POSITA would further have known that such information is more valuable to advertisers if it is more credible because it was verified by other sources. *See* EX1019, [0049]. This is because the goal of targeted advertisements is to identify and reach the advertiser’s target audience, and a POSITA would have understood that having access to information verified as credible would enable advertisers to make more “reliable” determinations as to whether a user is part of the target audience and suitable for targeting. *See id.*

281. Thus, a POSITA would have been motivated to verify profile information gathered by Merriman061-Jaye or Rosenberg-Merriman154 and record

the verification results as a score or rating associated with the attribute in the maintained profile to indicate the credibility of the profile attributes as taught by Coleman. *See id.*, [0049], [0074]. A POSITA would further have found it obvious that the verification score may be used when determining an advertisement to present to potential purchasers as taught in Coleman. *See id.*, [0049] (advertisers make predictions “based on the available information about the potential purchasers and whether such information has been verified”), [0061] (advertisements “may be presented to only certain potential purchasers who meet requirements set by the advertiser”). A POSITA would have recognized that making this modification of the primary combinations based on Coleman would allow advertisers to target advertisements based on information deemed to be more credible because it was verified and would enable the party collecting and maintaining the profiles to charge a higher price for advertisers to use or access the verified attributes in profiles, e.g., by selling profile information directly to advertisers, or selling ad placements targeted using the profile information. For example, targeting advertisements based on more credible information may allow the advertiser to achieve a greater response rate on their advertisements, enabling publishers “to charge a higher CPM” for ad placements. EX1008, 105.

282. The modification merely combines known elements (the primary combination systems that collect profiles, and Coleman’s verification process for

verifying gathered profile information) according to known methods (modifying a data structure to store verification information) to yield predictable results (profile attributes of a maintained profile associated with verification information). A POSITA would have reasonably expected the combination to be successful because looking up information from a database and adding additional fields to a data structure to store additional information was conventional.

4. Claim 8: “The method of claim 7 wherein the credibility rating is reflected in a price for the at least one profile attribute.”

283. Claim 8 would have been obvious to a POSITA based on either of the primary combinations in combination with Coleman. As I discuss for claim 7, in the proposed combinations, the maintained profiles in Merriman061-Jaye and in Rosenberg-Merriman154 are modified based on Coleman to include a credibility score associated with at least one profile attribute, based on results of verifying the profile attribute. *See* EX1019, [0074]. Because “the value” of profile information to potential advertisers increases as “the quality or verifiability of the information increases,” a POSITA would have understood that, in the proposed combinations of Merriman061-Jaye and Rosenberg-Merriman154 with Coleman, the score associated with a given profile attribute is indicative of the value of the attribute to a potential advertiser. EX1019, [0049]. This is because better verified, e.g., more credible, information allows for advertiser to target “potential purchasers based on the assumption that a generally predictable number of them will buy the offered good

or service,” potentially achieving higher response rates for delivered advertisements.
Id.

284. A POSITA would have understood that the value of information may be reflected in a price that an advertiser is willing to pay for the information. For example, a POSITA would have been aware that marketers and advertisers routinely paid for user profile information from “data providers” selling “information about consumers and households,” e.g., to have access to the profile information or to place advertisements targeted based on the profile information. EX1009, 242-254 (describing “data providers” including DoubleClick and Engage Technologies); *see also* EX1019, [0111] (describing profiles being provided to advertisers “[u]pon payment 809 from [the] advertiser”); EX1005, 14:22-25 (Jaye describing that portions of a maintained profile may be “release[d] to an interested party, such as a [subscribing] advertiser”); EX1006, 1:34-42 (costs of running websites are often “underwritten by advertising,” where advertisers “like to know audience demographics... to more accurately choose appropriate advertisements”). A POSITA would further have found it obvious for the price paid for the profile information to be based on the value of the attributes. Because information that has been verified will be of higher value, it would be obvious for the credibility rating to be reflected in a price for the profile attributes, where profile attributes with higher verifiability / credibility are priced higher in comparison to attributes that have not

been verified. For example, because targeting advertisements based on more credible information may allow the advertiser to more accurately predict which users are part of its target audience and thus achieve a “greater response” on ad placements, a POSITA would have known that publishers were able “to charge a higher CPM” for such ad placements. EX1008, 43, 105 (“Appropriately targeting ads means achieving greater response for the advertisers and the ability to charge a higher CPM for publishers”).

285. A POSITA would further have found it obvious for the credibility rating to be reflected in a price for the at least one profile attribute, due to additional costs that may be associated with verifying profile information. *See* EX1019, [0074] (describing verifying information using “private databases which may be accessed, perhaps for a certain price”). Due to the increased value of verified information, as well as to offset the potentially increased cost to verify the information, a POSITA would have found it obvious for profiles having attributes that are verified (and thus more credible) to be sold at a higher price. Thus, a POSITA would have found it obvious that in the combinations of Merriman061-Jaye and/or Rosenberg-Merriman154 with Coleman, the credibility rating associated with the at least one profile attribute, being indicative of the value of the attribute to a potential advertiser, is reflected in a price for the at least one profile attribute.

5. Claims 17-18 and 28-29

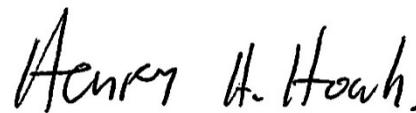
286. Claims 17-18 and 28-29 are substantively identical to claims 7-8 and are unpatentable for the same reasons.

X. CONCLUSION

287. For the reasons I have presented above, it is my opinion that the references serving as the bases for the grounds of rejection in the Petition render claims 1, 3-11, 13-21, and 23-30 of the challenged patent unpatentable.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: March 10, 2025



Henry Houh, Ph.D.