UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FREEWHEEL MEDIA, INC.,
Petitioner,

v.

ALMONDNET, INC.,
Patent Owner.

Patent No. 8,775,249
Filing Date: Jul. 23, 2013
Issue Date: Jul. 8, 2014
Title: METHOD, COMPUTER SYSTEM, AND STORED PROGRAM FOR ACCUMULATING DESCRIPTIVE PROFILE DATA ALONG WITH SOURCE INFORMATION FOR USE IN TARGETING THIRD-PARTY ADVERTISEMENTS

Inter Partes Review No.: IPR2024-00416

DECLARATION OF DR. SANJAY RANKA IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S. PAT. NO. 8,775,249

Declaration in Support of Petition 1 of 3

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I, Dr. Sanjay Ranka, declare that I have personal knowledge of the facts set forth in this declaration and, if called to testify as a witness, could and would do so competently.

I. INTRODUCTION

1. I have been retained as an expert witness on behalf of the Petitioner, FreeWheel Media, Inc., for the above-referenced *inter partes* review proceeding.

2. I have been asked to provide a declaration with my opinions regarding certain matters pertaining to the patentability of U.S. Patent No. 8,775,249 ("the '249 patent"). I understand that the '249 patent is owned by AlmondNet, Inc. ("Patent Owner").

3. I am being compensated at my usual consulting rate for my work on this matter. My compensation is in no way dependent upon my opinions or testimony or the outcome of this proceeding. I have no financial interest in the parties or in the outcome of this proceeding.

II. PROFESSIONAL BACKGROUND AND QUALIFICATIONS

4. I am a Distinguished Professor in the Department of Computer Information Science and Engineering at the University of Florida. My current curriculum vitae is attached as Appendix A and some highlights follow.

5. From 1999-2002, I was the Chief Technology Officer at Paramark (Sunnyvale, CA) where, among other things, I developed a real-time optimization

service called PILOT for marketing campaigns. PILOT served 10+ million optimized decisions a day in 2002 or earlier with a 99.99% uptime. PILOT (Paramark Interactive and Learning Optimization Technology), consists of novel algorithms that continually improve campaigns based on real-time analysis of campaign performance. It used attributes of the product/banner/email as well as profile attributes of the consumer to derive the most suitable product/banner/email that resulted in overall boost in outcome performance. The profile could be provided to the system in real-time or could be derived based on other information. The technology extensively used http redirects for this purpose. Paramark was recognized by VentureWire/Technologic Partners as a Top 100 Internet technology company in 2001 and 2002 and was acquired in 2002.

6. I have also held positions as a tenured faculty member at Syracuse University, as an academic visitor at IBM, and as a summer researcher at Hitachi America Limited.

7. I have coauthored one book, four monographs, and 300+ journal and refereed conference articles. I am a fellow of the Institute of Electrical and Electronics Engineers (IEEE), the American Association for the Advancement of Science (AAAS) and the Asia-Pacific Artificial Intelligence Association (AAIA) and a past member of International Federation for Information Processing (IFIP) Committee on System Modeling and Optimization. I won the 2020 Research Impact

Award from IEEE Technical Committee on Cloud Computing. I was awarded the 2022 Distinguished Alumnus Award from Indian Institute of Technology, Kanpur.

8. I am an associate editor for ACM Computing Surveys, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Sustainable Computing: Systems and Informatics, Knowledge and Information Systems, and International Journal of Computing. Additionally, I am a book series editor for CRC Press for Bigdata. In the past, I have been an associate editor for IEEE Transactions on Parallel and Distributed Systems and IEEE Transactions on Computers. I was an associate editor-in-chief of the Journal of Parallel and Distributed Computing for the last five years. I was a general co-chair for International Conference in Data mining in 2009, International Green Computing Conference in 2010 and International Green Computing Conference in 2011, a general chair for ACM Conference on Bioinformatics and Computational Biology in 2012, and a program chair for 2013 International Parallel and Distributed Processing Symposium and 2015 High Performance Computing Conference. I was a co-general chair for DataCom 2017 and co-program chair for ICMLDS 2017 and 2018. I am a program co-chair for the International Conference in Data Mining for 2022. My work has received 15,900+ citations with an h-index of 63 (based on Google Scholar).

9. I am a named inventor on at least 10 issued patents and published patent applications corresponding to the areas of my professional work. Accordingly, I

have a general understanding of the U.S. patent prosecution process and of the novelty and non-obviousness requirements for patentability. In particular, I have the following patents that are related to the field of Internet advertising:

- United States Patent Number 8,805,715. Brian Jones and Sanjay Ranka. Method for Improving the Performance of Messages Including Internet Splash Pages, Aug. 12, 2014.
- United States Patent Number 8,386,315. Aravind Bala, Richard Chatwin, Brian Jones, Ismail Ahmet Nalcacioglu, and Sanjay Ranka. Yield Management System and Method for Advertising Inventory, Feb. 26, 2013.
- United States Patent Number 8,260,663. Sanjay Ranka, E. Diane Chang, and Daniel Veiner. Method, Algorithm, and Computer Program for Targeting Messages Including Advertisements in an Interactive Measurable Medium, Sept. 4, 2012.
- United States Patent Number 7,415,423. Sanjay Ranka, Jason Lenderman, and James Weisinger. Method, Algorithm, and Computer Program for Optimizing the Performance of Messages Including Advertisements in an Interactive Measurable Medium, Aug. 19, 2008.
- United States Patent Number 7,406,434. E. Diane Chang, Richard Chatwin, Sachin Kumar, Sanjay Ranka, James Weisinger, and Jason Lenderman. System and Method for Improving the Performance of Electronic Media

Advertising Campaigns through Multi-attribute Analysis and Optimization, July 29, 2008.

10. I believe that my extensive industry experience and educational background qualify me as an expert in the relevant field of data communications topologies, including those topologies specifically used for Internet advertising. I also have expertise in developing an ad optimization system that leveraged user profile information, time of day and other information for Internet advertising and other applications. The system used extant internet and related communication technologies from 1999-2002. I am knowledgeable of the relevant skill set (Internet server and database design skills) that would have been possessed by a hypothetical person of ordinary skill in the art ("POSITA") at the time of the claimed invention of the '249 patent, which I have treated as December 13, 1999 for purposes of this proceeding. In particular, I have the necessary expertise to provide my informed opinions in this IPR, and I am an expert in the art of the '249 patent, due to the following:

- I received my undergraduate, master's, and doctoral degrees in computer science and engineering, computer and information science, and computer and information science, respectively;

- I have extensive experience in the use of databases for collecting and using profile information as well as the use of redirect technology as part of my technical responsibilities at Paramark;
- I have extensive experience in software design and development in both academia and industry;
- I have supervised 40+ doctoral students in computer science and related fields during the last 30+ years and many of these students are currently employed by companies such as Facebook, Amazon, and Microsoft; and
- I have been conducting state of the art research in developing data driven applications for a variety of disciplines including scientific computing, transportation, and health care.

III. MATERIALS REVIEWED

11. In connection with my study of this matter and reaching the opinions stated herein, I have reviewed a number of documents including the exhibits listed in Appendix B.

IV. UNDERSTANDING OF APPLICABLE LEGAL STANDARDS

12. Although I am not an attorney, I have a general understanding of the applicable legal standards pertaining to the patentability issues presented in this proceeding.

13. I understand that, in this *inter partes* review (IPR), Petitioner is challenging the patentability of the claims of the '249 patent. I understand that Petitioner has the burden of proving that each challenged claim is unpatentable by a preponderance of the evidence.

14. I understand that to be valid, a patent claim must be "novel," and is invalid if "anticipated" by a single prior art reference. I further understand that a reference anticipates if it discloses each and every element as arranged in the claim, so as to enable a person of ordinary skill in the art ("POSITA") to make and use the claimed invention without undue experimentation.

15. I understand that a patent claim is unpatentable if, at the time of the invention, it would have been obvious to a POSITA to combine the teachings of the prior art to yield the patent claim. I also understand that it is not required (although it is acceptable) that each element/limitation of a patent claim be found in a single reference in order to find a patent claim obvious. For a patent claim to be found obvious, all the elements/limitations of the patent claim may be found in a combination of references at which a person of ordinary skill in the art would have been reasonably expected to arrive. I understand that a proper analysis of whether an invention is unpatentable for obviousness includes a review of the scope and content of the prior art, the differences between the patent claims at issue and the

prior art, the level of ordinary skill in the field of the invention at the time of the invention, and other objective considerations identified below.

16. It is my understanding that the prior art and claimed invention should be viewed through the knowledge and understanding of a person of ordinary skill in the art – one should not use his or her own insight or hindsight in deciding whether a claim is obvious. I further understand that a claim may be rendered obvious if a person of ordinary skill in the art can implement the claimed invention as a predictable variation of a known product. I also understand that a person of ordinary skill in the art is presumed to have knowledge of the relevant prior art at the time of the claimed invention, which comprises any prior art that was reasonably pertinent to the particular problems the inventor faced.

17. I understand that a showing of obviousness requires some articulated reasoning with a rational underpinning to support the combination of the references. I understand that in consideration of the issue of obviousness it is important to identify whether a reason existed at the time of the invention that would have led a POSITA to combine elements of the references in a way that yields the claimed invention.

18. I understand that a claim may be considered unpatentable for obviousness for various reasons. I have been informed that the following exemplary rationales may support a finding of obviousness:

(A) combining prior art elements according to known methods to yield predictable results;

(B) simply substituting one known element for another to obtain predictable results;

(C) use of a known technique to improve similar devices in the same way;

(D) applying a known technique to a known device ready for improvement to yield predictable results;

(E) choosing from a finite number of identified, predictable solutions with a reasonable expectation of success;

(F) known work in a field that prompts variations in the work in the same or a different field that leads to predictable results; and

(G) some teaching, suggestion, or motivation in the prior art that would have led a person of ordinary skill in the art to modify a prior art reference or combine multiple prior art references or teachings to arrive at the claimed invention.

19. I understand that various objective or "real world" factors, also referred to as secondary considerations, may be indicative of non-obviousness. I understand that such factors/considerations include:

(A) the commercial success of the claimed invention;

(B) the existence of a long-felt, unresolved need for a solution to the problem solved by the claimed invention;

(C) failed attempts to solve the problem solved by the claimed invention;

(D) copying of the claimed invention;

(E) unexpected results of the claimed invention;

(F) praise for the claimed invention by others in the relevant field; and

(G) willingness of others to accept a license under the patent because of the merits of the claimed invention.

20. It is my understanding that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but other times the link may be common sense. I further understand that the obviousness analysis recognizes that market demand, rather than scientific literature, often drives innovation, and that is sufficient motivation to combine references.

21. It is my understanding that a particular combination may be proven obvious merely by showing that it was obvious to try the combination. For example, common sense is a good reason for a person of ordinary skill to pursue known options when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions.

22. I further understand that a proper obviousness analysis focuses on what was known or obvious to a person of ordinary skill in the art, not just the patentee.

Accordingly, it is my understanding that any need or problem known in the field at the time of invention and addressed by the patent can provide a reason for combining the limitations in the manner claimed.

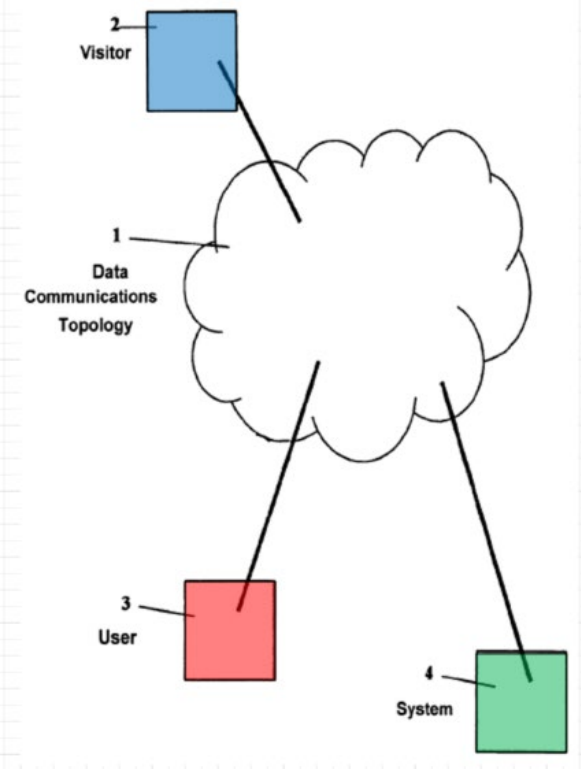
V. OVERVIEW OF THE '249 PATENT

23. The '249 patent describes "a mercantile method directed to brokerage of attributes of information" in which attributes of user information are aggregated in a databank and made available for purchase. Ex. 1001, 1:33-35, 8:12-29. The '249 patent admits that "[a]dvances in database technology have given rise to commerce in records, files and databases, per se." Ex. 1001, 1:39-40. The '249 patent even explains that it was known to merge whole databases to improve their data. Ex. 1001, 1:49-60. However, the '249 patent alleges that there is a problem in that "information commerce has focused on the sale of whole databases, whole records, or evaluations based on single or clusters of records" and that there is "a need in the art for commerce in [specific attributes of information]." Ex. 1001, 1:61-66.

24. Against this background, the purported invention "provide[s] a means for making viable the economic commerce in information attributes" by "gaining an ability to buy, sell, broker, and trade specific pieces of data between two disjoint parties within the context of a system that may include a databank and that may include a micro-payment royalty arrangement as a pricing structure in connection

with the aforesaid exchange of data." Ex. 1001, 3:52-53, 8:12-18. In other words, the '249 patent purports to improve existing technology simply by collecting more extensive information and commercializing certain information attributes as opposed to an entire database of information. Ex. 1001, 1:39-2:11. Yet, the '249 patent acknowledges that "in targeted advertising, every attribute, which substantially affects the probability of that advertisement's success, innately has a discrete economic value." Ex. 1001, 1:66-2:2. So, in short, the purported invention uses admittedly known technology to commercialize information attributes that "innately" have a value. Ex. 1001, 1:39-2:11, 3:29-4:42, 8:12-9:41.

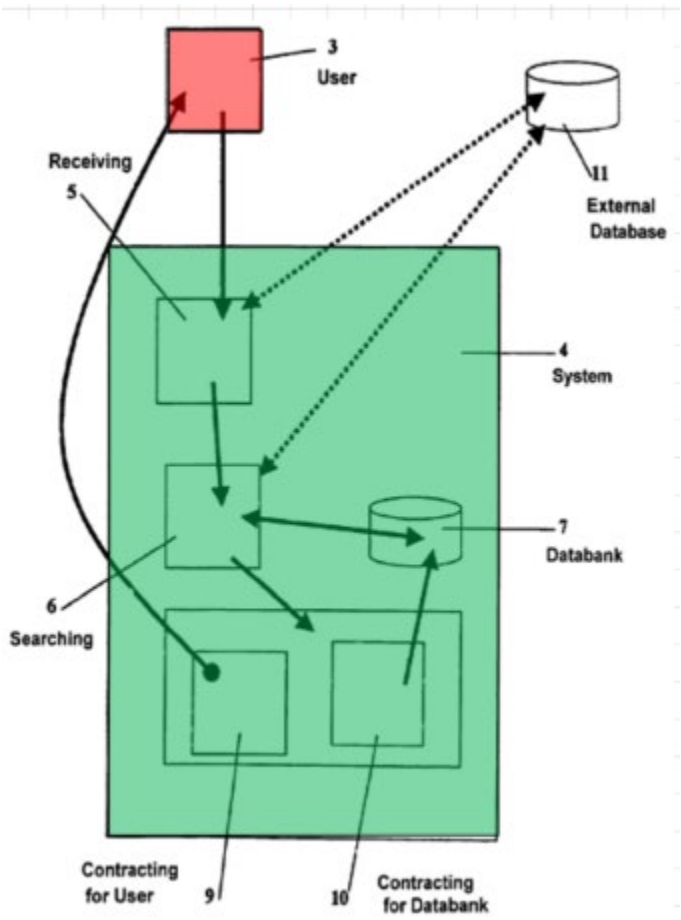
25. With respect to Figure 1 (annotated below), the '249 patent describes its mercantile method using an Internet data communications topology 1 connected to a system 4 (**green**) to collect profile attributes of a visitor 2 (**blue**) accessing the website of a user 3 (**red**) for use in targeted advertisements. Ex. 1001, 4:17-37, 4:66-5:3, Abstract. Nothing about this topology/system is new; nor does the '249 patent purport to provide any new hardware or connection within the overall system/topology. Ex. 4:66-5:26, 10:66-11:5, 16:38-43. In other words, the '249 patent merely describes using known structure to carry out its allegedly inventive mercantile method. *Id.*



Ex. 1001, Fig. 1 (annotated)

The user 3 (**red**) is "any entity that owns attributes contained in at least one partial profile," such as "a web site that has a database of its visitor profiles" or "an organization with a database of partial profiles." Ex. 1001, 2:60-63. The visitor 2 (**blue**) is "an entity the user has access to or is interested in," such as "a consumer or potential customer of an offering of goods, services, or information." Ex. 1001, 8:7-10. And the system 4 (**green**) is "a computer embodying the descriptive profile mercantile method." Ex. 1001, 7:55-57.

26. While Figure 1 provides the overall topology, Figure 2 (annotated below) aims to capture the alleged inventive mercantile method. Ex. 1001, 4:52-55.



Ex. 1001, Fig. 2 (annotated)

27. As shown above, the method begins with a step 5 of receiving a transaction having a first partial profile at the system 4 (**green**) from the user 3 (**red**). Ex. 1001, 5:9-10. Then, the system 4 searches (step 6) a databank and performs contracting (steps 9 and 10) to give the databank/system the right to own the first partial profile and the user the right to own a second partial profile. Ex. 1001, 5:11-26.

28. Although Figure 2 does not illustrate how the user 3 (*e.g.*, a website) gets the first partial profile, the '249 patent describes that the visitor to a website

provides credentials (a partial profile). Ex. 1001, 3:61-4:5. The visitor credentials "could be the visitor profile itself or a cookie or a user name and so forth that enables the site to retrieve the visitor profile or any combination of the above." Ex. 1001, 3:62-65. The '249 patent also states that in a "typical scenario," a website "collects a variety of specific data about the visitor that may include the visitor's cookie and any other information that the visitor voluntarily disclosed to the web site," and "there would be a benefit to the web site if the web site could acquire additional information as to the specific visitor or at least acquire typical profile information about a class of individuals possessing similar profiles relative to the specific visitor… [to] enable the web site to engage in potentially more successful product offering and/or targeted advertising to the visitor." Ex. 1001, 8:29-47. Additionally, "[a]nother independent benefit that can accrue to the web site is the gain of some economic remuneration for and as a function of the information itself that the web site possesses about the visitor." Ex. 1001, 8:29-51.

29. As shown above, Figure 2 also does not illustrate a "redirect," but the '249 patent mentions an optional redirect and claims "electronic URL redirection." Ex. 1001, 4:1-5, claims 1, 10. The '249 patent states that "[b]y 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." Ex. 1001, 4:5-7, 11:64-16:6 (similar description). However, the '249 patent provides no details on how this

redirection is implemented. It is worth noting that a good reason for this lack of details is that the implementation of or use of redirect for sending profile information would have been obvious to a POSITA and would not have been considered inventive. It is also worth noting that the '249 patent does not provide details about redirection that would preclude intervening user/human action. Additionally, it is worth noting that nothing in the '249 patent's description of the redirect suggests that the time between sending a redirect from the website to the time the profile is potentially updated on the server has to be small or real-time.

30. At any rate, the partial profile ends up at the system, which uses it to search a maintained databank of partial profiles (or maintained profiles) to identify a maintained profile related to the same entity as the visitor. Ex. 1001, 3:29-51, 5:11-26. The '249 patent mentions establishing a descriptive profile (or maintained profile), but generally assumes that a profile has already been established and is being updated with the recent partial profile. Ex. 1001, 11:6-25. Specifically, the '249 patent describes that when the partial profile is received, it is then added to the maintained profile stored in the databank and information attributes in the maintained profile are made available for purchase. Ex. 1001, 3:42-46, 4:18-22, 5:17-21. For example, "if the user provides a date of birth for a known named person in the data bank, then the user is the owner of that date of birth attribute, and a user designated micro payment royalty (or credit) is assigned to the user for each purchase

of that attribute by another user. The owner of the databank may likewise collect for itself a brokerage commission for each use of the attribute." Ex. 1001, 4:22-28. As another example where "the databank may contain new attributes that were not in the initial visitor credentials" and "the user is interested in any of these attributes, then a contract is agreed to, resulting in a micro-payment transfer from the user to the broker and to the royalty owner, and a transfer of a copy of the attribute to the user (the buyer)." Ex. 1001, 4:29-38. A website thus acts as the user in "construct[ing] a transaction that contain[s] those portions of the information it possesses about the visitor that it is allowed to diverge to third parties." Ex. 1001, 8:58-61.

31. Once a first partial profile of the user (*e.g.*, a website) is matched with a second partial profile in the databank, "a contract can be formed between the user and the system related to the new information set which has resulted" to "provide that the system will own or acquire a license to utilize an agreed portion of the first partial profile which has been confirmed and at some time thereafter the system will incorporate the agreed portion of the first profile into at least one second partial profile in the system's data bank." Ex. 1001, 12:40-49. In some examples, "the value of information in a databank can change as a function of its credibility and source." Ex. 1001, 10:50-53.

32. In another variation, external databases can be searched such that "the system is capable of acting as a first partial profile user to other databases, searching them, trading information with them or borrowing, renting, or purchasing other attributes with them." Ex. 1001, 15:51-65. A POSITA would have understood that this "consultation" does not have to be done in real-time and in general may be performed offline. Ex. 1001, 15:51-65. "Thus, both system and owners of other databases may themselves contract between themselves for the right to own, use, license, or rent the other's partial profile and for the right to sublicense others to further use the other's partial profile." Ex. 1001, 16:12-15.

VI. RELATED PROSECUTION HISTORY

33. The '249 patent is part of a larger patent family as shown in the family tree attached to this Declaration as Appendix C. As shown in the family tree, the family begins with an Israel Patent Application No. 133489, followed by U.S. Patent No. 6,925,440, followed by U.S. Patent No. 7,428,493 ("the '493 patent"), followed by U.S. Patent No. 7,979,307 ("the '307 patent"), followed by U.S. Patent No. 8,244,582 ("the '582 patent"), followed by 8,494,904 ("the '904 patent"), and followed by U.S. Patent No. 8,775,249 ("the '249 patent"). The family tree also includes EP 00981582.0 and EP 08103068.6. Below I discuss the relevant US prosecution history starting with the '493 patent (which shows the start of the

evolution of the challenged claims) and continuing down the line to the '249 patent in that order. I also address the two EP cases at the end.

A. Prosecution History Of The '493 Patent

34. The application that ultimately issued as the '493 patent was filed on September 23, 2008, as a continuation of U.S. Patent No. 6,925,440, and assigned number 11/099,861 ("the '861 application"). Ex. 1003, pp. 1-2.

35. The '861 application was filed with the claims of the previous application and a preliminary amendment cancelling the previous claims and replacing them with new ones. Ex. 1003, pp. 69-72. Claim 39 of the '861 application recites the following:

> 39. (New) A method of updating profiles of Internet-using entities, the method comprising:
>
> (a) electronically receiving, from an unaffiliated third party, a partial profile of an entity that uses a computer coupled to a global computer network, which partial profile contains at least one profile attribute related to the entity; and
>
> (b) automatically electronically determining whether the received partial profile contains any new profile attributes about the entity, and if so, in accordance with a predetermined arrangement, creating an electronic credit identifying a payment to the unaffiliated third party as a result of using any of the new profile attributes in targeting advertisements to the entity's computer over the global computer network.

Ex. 1003, p. 69.

36. In a supplemental preliminary amendment, the Applicant mis-numbered the claims (claim 39 was numbered as claim 40 and 40 as 41, etc.), made amendments (claims 58-61), and added new claims (claims 66-92). The claim

amendments appear to be largely stylistic. Ex. 1003, pp. 299-305. Amended claim 58 shows the claim amendments they made and recites the following:

> 58. (Currently Amended) A method of profiting from ~~collecting~~ profiles of Internet-using entities, the method comprising:
>
> (a) electronically ~~transmitting~~ providing, to an unaffiliated third party, a partial profile of an entity that uses a computer coupled to a global computer network,
>
> (b) which partial profile contains at least one profile attribute related to the entity,
>
> (c) in accordance with a predetermined agreement involving an electronic credit identifying a payment from the third party as a result of:
>
> (i) the third party automatically electronically determining that the ~~transmitted~~ provided partial profile contains any new profile attributes about the entity, and
>
> (ii) at least one of the new profile attributes being used in targeting advertisements to the entity's computer over the global computer network.

Ex. 1003, pp. 300-301.

37. Independent claim 66 shows a new claim and recites the following:

> 66. (New) A method of updating profiles of Internet-using entities, the method comprising:
>
> (a) electronically receiving, from an unaffiliated third party, a partial profile of an entity that uses a computer coupled to a global computer network, which partial profile contains at least one profile attribute related to the entity; and
>
> (b) in accordance with a predetermined arrangement, automatically creating an electronic credit identifying a payment to the unaffiliated third party as a result of using at least one of the profile attributes in the partial profile in targeting advertisements to the entity's computer over the global computer network, wherein the credit is based on at least the parameter of newness of the at least one profile attribute.

Ex. 1003, p. 302.

38. By way of explanation for the additional amendments, the Applicant stated the following:

> Broadening amendments are made to claims 58-61 to clarify that the provision of partial profiles need not be "transmitted," and need not be sent directly, in line with the specification, which describes "providing" profile information and identifies one possible method for doing same as being the redirection of a visitor's computer that is visiting a profile-provider's website from the website to a databank. Claim 58 is further amended to clarify that some or all of the new profile attributes can be used in targeting an ad, thus triggering payment.

Ex. 1003, p. 306.

39. On September 10, 2007, the Office issued an action rejecting claims 40-74, 77, 81-87, 89, and 92 as obvious in view of a single reference—Acxiom ("There Time Has Come," Direct, vll, n8, pl+, June 1999) ("the Acxiom reference)—and objecting to claims 75, 76, 78-80, 88, 90, and 91. Ex. 1003, pp. 320-325. Additionally, the Office Action indicated that claims 75, 76, 78-80, 88, 90, and 91 contained allowable subject matter. Ex. 1003, p. 325.

40. On February 11, 2008, the Applicant filed an amendment responding to the rejection. Ex. 1003, p. 335. In the amendments, the Applicant added limitations related to royalty payments. For example, claim 40 was amended as follows:

40. (Currently Amended) A method of updating profiles of Internet-using entities, the method comprising:

(a) electronically receiving, from an unaffiliated third party, a partial profile of an entity that uses a computer coupled to a global computer network, which partial profile contains at least one profile attribute related to the entity; and

(b) automatically electronically determining whether the received partial profile contains any new profile attributes about the entity, and if so, in accordance with a predetermined arrangement, creating and recording an electronic credit identifying a royalty payment to the unaffiliated third party as a result of and on account of using any of the new profile attributes in targeting advertisements to the entity's computer over the global computer network;

(c) wherein the royalty payment is determined using a formula that factors in the newness of the attribute.

Ex. 1003, p. 338.

41. New claims 93-100 were also added. Claim 93 recites the following:

93. (New) A method of collecting and utilizing profiles of Internet-using entities, the method comprising:

(a) electronically receiving, from at least one of a plurality of unaffiliated third parties operating a website, a partial profile of an entity that uses a computer coupled to a global computer network and accessing the website, which partial profile contains at least one profile attribute related to the entity;

(b) wherein receiving the partial profile is achieved by redirection of a portion of a page of the website accessed by the entity's computer;

(c) automatically electronically attempting to match the received partial profile to a maintained profile believed to be related to the same entity;

(d) automatically generating and storing an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes; and

(e) allowing use of the maintained profile in targeting advertisements to the entity's computer over the global computer network.

Ex. 1003, pp. 344-345.

42. On May 9, 2008, an examiner interview was conducted. The results of the interview were summarized by the examiner as follows:

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Examiner Ouellette and Mr. Hoffman discussed independent claims 66, 81, and 92, and the need to amend the independent claims in order to place the claims in condition for allowance. Mr. Hoffman requested that Examiner Ouellette make the suggested amendments through an Examiner's Amendment. Examiner Ouellette and Mr. Hoffman further discussed the newly added claims 93-100. Examiner Ouellette stated that the new claims incorporated a new invention and would require a restriction. Mr. Hoffman elected the original claims 40-53 and 46-92 without traverse.

Ex. 1003, p. 362.

43. The case was allowed on May 20, 2008. Ex. 1003, p. 363. And the patent issued on September 23, 2008. Ex. 1003, p. 384.

B. Prosecution History Of The '307 Patent

44. The application that ultimately issued as the '307 patent was filed on August 6, 2008, as a division of the '493 patent. Ex. 1004, p. 90. The application was assigned U.S. Patent Application serial number 12/186,918 ("the '918 application"). *Id*., p. 1.

45. The '918 application was filed using the same specification as the '861 application and with a preliminary amendment. *Id*., pp. 3-47, 56-60. In the preliminary amendment, the Applicant amended the priority paragraph of the specification, *id*., p. 57, cancelled all the original claims, *id*., p. 58, and added new claims 40-47, *id*., pp. 58-59. The newly added claims roughly correspond to the claims that were ultimately allowed in the '307 patent. Specifically, new independent claim 40 corresponds to issued claim 1 and new independent claim 47 corresponds to issued claim 9.

46. On October 6, 2010, the Office issued a non-final action rejecting claims 40-47 as anticipated by the Acxiom reference. Among other things, the Office Action found that the Acxiom reference disclosed "(b) wherein receiving the partial profile is achieved by redirection of a portion of a page of the website accessed by the entity's computer" and "(d) automatically generating and storing an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular attributes." Ex. 1004, pp. 235-236.

47. In response to the non-final action, the Applicant, without amending the claims, argued that the Acxiom reference failed to disclose claim elements (b) and (d). With respect to element (b), the Applicant asserted, without any supporting evidence, that "Assignee does not see any disclosure or discussion in Acxiom of 'redirection' of computers of visitors to a website, nor achieving receipt of a partial profile by such redirection." Ex. 1004, p. 256.

48. With respect to element (d), the Applicant argued:

> Assignee does not see any disclosure or discussion in Acxiom of maintaining a record of who contributed what. More exactly, in Acxiom, there is no discussion of the databank company keeping any electronic record identifying which website (or profile provider generally, given that no websites are discussed) contributed which profile attribute (item of information). Acxiom discloses paying a profile provider a "royalty," but that disclosure

> does not *require* (inherently disclose) the databank to keep an electronic record of who contributed particular profile attributes. Instead, it is alternatively possible in Acxiom for the databank to keep non-electronic records or an electronic record of which provider or providers contributed *any* piece of information to a particular data record (*i.e.*, a record related to a particular subject) without recording who gave which *attribute*, because either of those alternatives would be enough to allow the databank to pay royalties to the correct profile providers.

Id., p. 256 (emphasis in original).

49. On January 19, 2011, the Office issued a final action maintaining its rejection of all of the pending claims as unpatentable under 35 U.S.C. § 102. Ex. 1004, p. 262. With respect to element (b), the Office clarified its position, explaining that page 2 of the Acxiom reference discloses that "email addresses [are] exchanged/redirected—[and were] originally obtained/saved through [a] website filed input." Ex. 1004, p. 262. With respect to element (d), the Office Action further clarified that the Acxiom reference discloses that "email addresses [are] saved with third party information for royalty purposes" on page 2. *Id.*, p. 263. Accordingly, the Office found none of the Applicant's prior arguments persuasive. *Id*., p. 264.

50. After receiving the final Office Action, the Applicant arranged for and conducted an in-person interview on March 29, 2011. Ex. 1004, p. 271. The Examiner's interview summary indicates that an agreement with respect to the

claims was reached during the in-person interview, but it does not articulate what that agreement was. *Id*. Instead, the interview summary merely explains that "Mr. Hoffman and Examiner Ouellette discussed the outstanding rejection and some amendments to the independent claims that would overcome the [c]ited prior art." *Id*.

51. The Applicant filed an after-final amendment on April 27, 2011. Ex. 1004, pp. 274-282. In the amendment, the Applicant amended the claims and added new claims 48 and 49 (corresponding to issued claims 8 and 10, respectively). Ex. 1004, pp. 276-278. In particular, independent claim 40 was amended as follows (similar amendments were made to independent claim 47):

40. (Currently Amended) An automated method of collecting ~~and utilizing~~ profiles of Internet-using entities, the method comprising:

(a) electronically receiving at a programmed computer system coupled to a global computer network, from at least one ~~of~~ server controlled by one of a plurality of unaffiliated third parties operating [[a]] respective websites, a partial profile of an entity that uses a user computer coupled to [[a]] the global computer network and accessing the website, which partial profile contains at least one profile attribute related to the entity, and automatically with the computer system storing the received partial profile;

(b) wherein receiving the partial profile is achieved by automatic electronic URL redirection [[of]] from a portion of a page of the website accessed by the ~~entity's~~ user computer;

(c) automatically with the computer system electronically ~~attempting to match~~ adding the received partial profile to a maintained profile believed to be related to the same entity;

(d) 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; ~~and~~

(e) ~~allowing use of~~ wherein the maintained profile, including the added partial profile, comprises data used in targeting third-party advertisements to the ~~entity's~~ user computer over the global computer network.

Id., pp. 276-277. Importantly, element (b) of the independent claims was amended to include "automatic electronic URL redirection," which appears to have been the amendment that convinced the examiner to ultimately allow the case. *Id*. Other amendments to the claims were made, but these appear to have been "for clarity" and to address § 101 concerns. *Id*., pp. 280-282.

52. In support of the amendment, the Applicant argued that the final Office Action had misapprehended the meaning of the claim term "redirection." *Id*., p. 279.

In contrast to the claimed term, argued the Applicant, the "Acxiom reference discloses something akin to one party sending another party an electronic disk or other storage device obtaining email addresses obtained via the first party's website." *Id*. This, argued the Applicant, is not "redirection." The Applicant then defined the claimed "URL redirection" as follows:

> When a web server tells a client browser to obtain a certain requested page from a different location. . . The new URL may be on the same server or a different one and may itself be subject to redirection.

Id., pp. 280, 283 (citing online dictionary definition, a printout of which was attached to the Amendment). Under this definition, argues the Applicant, "Acxiom clearly fails to disclose any 'redirection' in the sense used in this specification." *Id*., p. 280. The Applicant also explained that "the examiner accepted the point and agreed that the use of redirection for this purpose would have been non-obvious, but he asked that the term 'URL redirection' be used to clarify the meaning still further." *Id*.

53. On May 20, 2011, the Office issued a Notice of Allowance. Ex. 1004, pp. 289-295. In the corresponding Notice of Allowability, the examiner provided few reasons why the claims had been allowed, stating only that "[a]ll previous rejections are withdrawn due to Applicant's amendments and arguments." *Id*., p. 294. The '307 patent issued on July 12, 2011. Ex. 1004, p. 310.

54. On May 11, 2017, a covered business method petition was filed against the ’307 patent at the Patent Trial and Appeal Board. Ex. 1004, p. 313. In response to the petition, the assignee of the ’307 patent filed a disclaimer under 37 C.F.R. § 1.321(a) to disclaim claims 8 and 10. Ex. 1004, p. 314. Based, in part, on this disclaimer, the CBM petition was ultimately denied. Ex. 1004, pp. 332-334.

C. Prosecution History Of The ’582 Patent

55. The application that ultimately issued as the ’582 patent was filed on May 25, 2011, as a continuation of the ’307 patent, and was assigned application no. 13/115,949 (“the ’949 application”). Ex. 1005, p. 77.

56. The ’949 application was also filed with a preliminary amendment, which changed the title as follows:

> ~~A Descriptive Profile Mercantile~~ Method and Stored Program for Accumulating Descriptive Profile Data Along with Source Information for Use in Targeting Third-Party Advertisements

Ex. 1005, pp. 64-65. Additionally, the preliminary amendment cancelled claims 1-39 (remnants of the previous application) and added new claims 40-59. *Id.*, pp. 66-70. These claims largely track the claims that issued as claims 1-20 in the ’582 patent. For example, new independent claim 40 recited the following:

40. (New) An automated method of collecting profiles of Internet-using entities, the method comprising:

(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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity, and automatically with the computer system storing the received partial profile;

(b) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer;

(c) automatically with the computer system electronically adding the received partial profile to a maintained profile believed to be related to the same entity;

(d) 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;

(e) 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.

Ex. 1005, p. 66. The Applicant also identified the differences between new claim 40 and the claim of the parent application (i.e., the '307 patent) as follows:

40. An automated method of collecting profiles of Internet-using entities, the method comprising:

(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 ~~operating respective websites~~, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing ~~the~~ a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity, and automatically with the computer system storing the received partial profile;

(b) wherein receiving the partial profile is achieved ~~by~~ as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer;

(c) automatically with the computer system electronically adding the received partial profile to a maintained profile believed to be related to the same entity;

(d) 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;

(e) 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.

Ex. 1005, p. 71.

57. On June 7, 2012, the Office issued a non-final Action rejecting all of the pending claims under statutory double patenting over claims 1-10 of the '307 patent. Ex. 1005, pp. 96-99.

58. On the same day the action was received, June 7, 2012, the Applicant filed a reply and terminal disclaimer. Ex. 1005, pp. 108-116. In the reply, the Applicant explained that there were, in fact, differences between the pending claims the claims of the parent, and argued that these differences made the statutory double patenting rejection inappropriate. Ex. 1005, p. 115. Specifically, the applicant argued that "the claims of the instant application have been amended sufficiently that they are not coextensive in scope (and do not 'cross-read' on each other)." *Id*.

The Applicant then argued that the concurrently filed terminal disclaimer should overcome the double patenting rejection. *Id*.

59. On June 19, 2012, the Examiner renewed his statutory double patenting rejection for claims 40 and 50, noting that "[t]he filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101." *Id*., p. 121 (emphasis in original). The examiner also maintained that the claims "are exactly the same with claims 1 and 9 of prior U.S. Patent No. 7,979,307." *Id*., p. 122. The action was made final. *Id*.

60. On June 26, 2012, Applicant filed a response to the final office action that, again, indicated the differences the '307 patent and the pending claims. *Id*., p. 127. Additionally, the Applicant indicated that the double patenting rejection should have been a non-statutory double patenting rejection and that the previously-filed terminal disclaimer should have overcome the rejection. *Id*. The response also indicated that the examiner conducted a telephone interview with the Applicant's representatives on June 26, 2012, in which they discussed these matters. *Id*.

61. The Examiner issued a notice of allowance on July 10, 2012 (Ex. 1005, pp. 131-137), and the '582 patent issued on August 14, 2012. Ex. 1005., p. 149. In the notice of allowance, the examiner (as he had done with the previous cases in the family) merely indicated that "[a]ll previous rejections are withdrawn due to Applicant's amendments and arguments." Ex. 1005, p. 136. No additional reasons

for allowance were given. On September 6, 2017, the '582 patent owner disclaimed claims 2 and 12 of the patent. Ex. 1005, p. 154.

D. Prosecution History Of The '904 Patent

62. The application that would ultimately mature into the '904 patent was filed on August 14, 2012. Ex. 1006, p. 1. It was filed with a preliminary amendment and a placeholder claim. Ex. 1006, p. 62.

63. On September 24, 2012, a supplemental preliminary amendment was filed cancelling all previous claims and adding new claims 40-69. Ex. 1006, pp. 91-97. Independent claim 40 recites the following:

> 40. (New) An automated method of collecting profiles of Internet-using entities, the method comprising:
>
> (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-redirected partial profile of an entity that uses a user computer coupled to the global computer network to access a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity, which partial profile is received along with an identification of the one of the third parties that contributed the partial profile, and automatically with the computer system storing the received partial profile;
>
> (b) automatically with the computer system electronically adding the received partial profile to a maintained profile believed to be related to the same entity;
>
> (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; and
>
> (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.

Ex. 1006, p. 91.

64. On December 21, 2012, the office issued an action rejecting all of the pending claims for obviousness-type double patenting. Ex. 1006, p. 112. The applicant filed a terminal disclaimer on February 22, 2013 (Ex. 1006, p. 138), and a notice of allowance was issued on March 28, 2013. Ex. 1006, p. 145.

E. Prosecution History Of The '249 Patent

65. The application that would become the '249 patent, assigned application number 13/948,661 ("the '661 application"), was filed on July 23, 2013 as a continuation of the '904 patent. Ex. 1007, pp. 52-57. The '661 application was filed with a preliminary amendment amending the title, amending the cross-reference to related applications section, and cancelling all of the claims of the previous application save a single placeholder claim. Ex. 1007, pp. 59-62.

66. The Applicant filed a second preliminary amendment on August 5, 2013, replacing the old abstract with a new abstract. Ex. 1007, p. 83. The old abstract had read as follows:

> A descriptive-profile mercantile method, for use at a juncture in a data-communications topology having associated therewith a maintained databank of partial profiles, is disclosed. The method includes the steps of: from a user, receiving a transaction having therein a first partial profile; using the first partial profile, searching a databank having a plurality of second partial profiles,

wherein is included in said databank at least one null profile so that said searching will always yield at least one proximate second partial profile to the first partial profile; and between the user and the databank, contracting: (I) for the databank to own or represent a right to a first mutually agreed portion of the first partial profile, and substantially thereafter said databank incorporating the agreed portion of the first profile into at least one second partial profile; or (II) for the user to own or represent a right to a second mutually agreed portion of at least one said proximate second partial profile, and substantially thereafter the databank transmitting to the user the second mutually agreed portion of the second profile. The present invention operates best on a brokerage representation model; and thereby provides a means for making viable the economic commerce in information attributes.

Ex. 1007, p. 47.

67. The new abstract read:

> A method of accumulating descriptive profile data uses a databank that can be contacted by profile providers who contribute profile elements about an online visitor. The method includes keeping track of which profile provider contributed which elements, so that use of particular elements in targeting electronic third-party advertisements automatically can result in compensation.

Ex. 1007, p. 83.

68. A filing receipt was issued on August 13, 2013, listing July 23, 2013, as the filing date of the ’661 application. Ex. 1007, p. 88.

69. The case was ultimately assigned the same examiner that had examined the ’307 patent and, on September 11, 2013, the examiner issued a non-final Office Action rejecting the single placeholder claim due to nonstatutory double patenting and under 35 U.S.C. § 101 as directed to non-statutory subject matter. Ex. 1007, pp. 94-99. With respect to the § 101 rejection, the examiner suggested “incorporating the phrase — ‘automatically by a computer…’ — to either step b or c” would overcome the rejection. *Id*., p. 98.

70. In response to the Office Action, the Applicant filed an amendment on February 5, 2014. In the amendment, the Applicant amended the title to include “computer system” and canceled the placeholder claim to replace it with new claims 40-64. Ex. 1007, pp. 116-127. These claims correspond to allowed claims 1-25. Notably, each of the independent claims recites “automatically with the computer system,” as suggested by the examiner in the office action. *Id*. The Applicant also took the step of noting that “claim 40 is a modified version of independent claim 1 issued in parent U.S. Patent 8,244,582” and provided a marked-up version of the changes with respect to the ’582 claim. The marked-up claim is as follows:

40 [[1]]. An automated method of collecting profiles of Internet-using entities, the method comprising:

(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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity~~, and~~;

(b) automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity;

~~(b)~~ (c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and

~~(c) automatically with the computer system electronically adding the received partial profile to a maintained profile believed to be related to the same entity;~~

(d) automatically with the computer system generating ~~and storing~~ an electronic record of which of the plurality of unaffiliated third parties contributed to the ~~maintained~~ stored profile particular profile attributes;

(e) wherein the ~~maintained~~ stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network.

Ex. 1007, p. 125.

71. On April 28 2014, in response to the amendment, the examiner issued a final Office Action rejecting all of the pending claims for nonstatutory double patenting based on patent nos. 8,494,904, 8,244,582, and 7,979,307. Ex. 1007, pp. 133-138. Applicant filed a terminal disclaimer on May 7, 2014. Ex. 1007, pp. 144-145.

72. The ’661 application was allowed on May 28, 2014, with the only explanation for allowance being given as “[a]ll previous rejections are withdrawn

due to Applicant's amendments and arguments." Ex. 1007, pp. 154-160. An issue notification was sent on June 18, 2014, granting 0 days of PTA. *Id*., p. 179. The application issued as the '249 patent on July 8, 2014. *Id.*

73. On May 15, 2017, a covered business method petition, CBM2017-00050, was filed against the '249 patent. Ex. 1007, p. 181. On September 6, 2017, patent owner disclaimed claims 2, 12, and 22. *Id*., p. 182. Ultimately the CBM petition was denied. *Id*., p. 202. The Office issued a certificate of correction noting the disclaimer of claims 2, 12, and 22, on September 6, 2022. *Id*., p. 204.

F. Prosecution History Of EP 00 981 582.0

74. This application was filed as a European entry of PCT/IL00/00829 (published as WO 01/43001). The application was filed with claims 1-12, with claims 1, 10, and 12 being independent. Claim 1 recites the following:

> 1. A descriptive-profile mercantile method, for use at a juncture in a data-communications topology having associated therewith a maintained databank of partial profiles, the method including the steps of:
>
> a) from a user, receiving a transaction having therein a first partial profile;
>
> b) using the first partial profile, searching a databank having a plurality of second partial profiles, wherein is included in said databank at least one null profile so that said searching will always yield at least one proximate second partial profile to the first partial profile;
>
> c) between the user and the databank, contracting:

i) for the databank to own or represent a right to a first mutually agreed portion of the first partial profile, and substantially thereafter said databank incorporating the agreed portion of the first profile into at least one second partial profile; or

ii) for the user to own or represent a right to a second mutually agreed portion of at least one said proximate second partial profile, and substantially thereafter the databank transmitting to the user the second mutually agreed portion of the second profile.

Ex. 1008, pp. 216-220.

75. On June 1, 2006, the EPO issued a communication rejecting all of the claims as lacking inventive step over D1 (WO 98/59481 to Buckland) and D2 (BRODY R: "The conditions and consequences of profiling in commercial and governmental settings" TECHNOLOGY AND SOCIETY, 1998. ISTAS 98. WIRING THE WORLD: THE IMPACT OF INFORMATION TECHNOLOGY ON SOCIETY., PROCEEDINGS OF THE 1998 INTERNATIONAL SYMPOSIUM ON SOUTH BEND, IN, USA 12-13 JUNE 1998, NEW YORK, NY, USA,IEEE, US, 12 June 1998 (1998-06-12), pages 148-154, XP010291443 ISBN: 0-7803-4327-1). Ex. 1008, pp. 80-85. While the European examiner conceded that step c) of claim 1 was not expressly taught by the combination of D1 and D2, he concluded that step c) "is therefore a straightforward implementation consequence the skilled person

would immediately consider—without any inventive activity—when confronted with the objective technical problem." *Id*., p. 82.

76. On March 27, 2007, the applicant responded to the official communication with fairly extensive amendments to the claims. For example, representative claim 1 was amended to the following:

> 1. A computer-implemented method for processing profiles at a juncture in a data-communications topology having associated therewith a maintained databank of partial profiles, the method including the steps of:
> a) from a user (3), receiving (5) a transaction having therein a first partial profile;
> b) using the first partial profile, searching (6) a databank (7) having a plurality of second partial profiles, wherein included in said databank is at least one null profile;
> c) between the user and the databank:
> I) identifying a first mutually agreed portion of the first partial profile for which the databank shall own or represent a right, and incorporating the first mutually agreed portion of the first partial profile into at least one second partial profile of the databank resulting from the searching step (10); or
> ii) identifying a second mutually agreed portion of at least one said second partial profile of the databank resulting from the searching step, for which the user shall own or represent a right, and transmitting the second mutually agreed portion of the second partial profile from the databank to the user (9).

Ex. 1008, p. 63.

77. Additionally, the Applicant made some changes to the dependent claims to correct some formal issues. Ex. 1008, pp. 61-65. With respect to the independent claims, the Applicant purported to remove references to the "intended

result" of the claim and to "connect the 'second partial profile' to the result of the searching step of part (b)." *Id*., p. 61. With these changes, the Applicant argued that the cited documents (i.e., D1 and D2) "do not disclose or suggest the databank incorporating a portion of the first profile into the second partial profile or transmitting a portion of the second profile to the user." *Id*., p. 62. Moreover, the Applicant argued that "[t]hese are technical implementation features that improve the matching performance of the method/system and are neither disclosed nor obvious from the prior art." *Id*.

78. The Office issued another communication on July 15, 2008, in the form of a Summons to attend oral proceedings pursuant to Rule 115(1) EPC. Ex. 1008, p. 53. In the summons, the EPO maintained its rejection of all of the pending claims over the previously-cited art and added a newly-cited reference D4 (EP 0 751 471 A1 to Lashkari *et al*.). Additionally, the Examining Division indicated that the prior amendments "introduce subject-matter which extends beyond the content of the application as filed, contrary to the requirements of Article 123(2) EPC." Ex. 1008, p. 47.

79. The EPO maintained the previous rejection while responding to the Applicant's argument that the prior art does not incorporate "a portion of a first profile into a second profile." Ex. 1008, p. 50. The EPO examiner indicated that "said incorporation is interpreted as being technically equivalent to updating, i.e.,

adding and/or modifying, profile attributes." *Id*. This, the examiner indicated "is well known in the art of profile management how to update profile attributes, as exemplified in D4, therefore said feature is considered trivial." *Id*.

G. Prosecution History Of EP 08103068.6

80. The application was filed on March 28, 2008, as a divisional of EP00981582.0. Ex. 1008, p. 317. The application was filed with 13 claims, of which claims 1 and 8 were independent. Claim 1 recited the following:

> 1. A method of collecting and utilizing profiles of Internet-using entities, the method comprising:
>
> (a) electronically receiving, from at least one of a plurality of unaffiliated third parties operating a website, a partial profile of an entity that uses a computer coupled to a global computer network and is accessing the website, which partial profile contains at least one profile attribute related to the entity and which partial profile is received due to redirection of a portion of a page of the website accessed by the entity's computer;
>
> (b) automatically electronically attempting to match the received partial profile to a maintained profile believed to be related to the same entity;
>
> (c) automatically generating and storing an electronic record of which of the plurality of unaffiliated third parties contributed to the maintained profile particular profile attributes; and

(d) allowing use of the maintained profile in targeting advertisements to the entity's computer over the global computer network.

Ex. 1008, pp. 282.

81. A European search report was issued on April 3, 2009, listing three "X" references. Specifically:

- WO 97/16796 by Herz;
- BRODY R: "The conditions and consequences of profiling in commercial and governmental settings" TECHNOLOGY AND SOCIETY, 1998. ISTAS 98.; and
- U.S. Patent No. 5,724,521 to Dedrick.

Ex. 1008, pp. 269-277.

82. On December 16, 2009, the EPO issued a communication noting the loss of rights pursuant to Rule 112(1) EPC for failure to pay the examination and designation fees. Ex. 1008, p. 264.

VII. RELATED LITIGATION

83. I understand that the '307 and '249 patents are the subject of pending litigation involving Petitioner: *AlmondNet, Inc. and Intent IQ, LLC v. Freewheel Media, Inc. and Beeswax.io Corp.*, Case No. 1:23-cv-00220 (D. Del.). I understand

that Patent Owner sued Petitioner for alleged infringement of the ’307 and ’249 patents.

84. I understand that one or more of the ’307, ’582, ’904, and ’249 patents have been involved or are currently involved in other litigations:

- *AlmondNet, Inc. et al. v. Viant Technology Inc. et al.*, 1-23-cv-00174 (D. Del.)
    - I understand that this case is currently pending and that claim construction briefing has not occurred and that a claim construction ruling has not been issued.
- *AlmondNet, Inc., et al. v. Samsung Electronics Co., Ltd.*, et al., 4-22-cv-07515 (N.D. Cal.) (“7515 N.D. Cal. case”)
    - I understand that this case is currently stayed as of April 18, 2023. I further understand that prior to the stay, claim construction briefing occurred but that a claim construction ruling has not been issued.
- *AlmondNet, Inc. et al. v. Meta Platforms, Inc.*, 4-23-cv-00438 (N.D. Cal.)
    - I understand that this case was reassigned to the 7515 N.D. Cal. case.
- *Roku, Inc. v. AlmondNet, Inc. et al.*, 1-21-cv-01035 (D. Del.) (“1035 D. Del. case”)
    - I understand that this case is currently pending, that claim construction briefing occurred, and that a claim construction hearing was held on July 7, 2023. I further understand that during the claim construction hearing the Court ruled on certain claim constructions and that an order directed to all claim constructions is forthcoming.
- *AlmondNet, Inc. v. Roku, Inc.*, 1-22-cv-01540 (D. Del.) (“1540 D. Del. case”)

- I understand that this case was consolidated with the 1035 D. Del. case and that the 1035 D. Del. case was designated as the lead case.

- *AlmondNet, Inc. et al v. Amazon.com, Inc. et al.*, 6-22-cv-01204 (W.D. Tex.)
  - I understand that this case was terminated on June 1, 2023 and that prior to termination claim construction briefing did not occur and a claim construction ruling was not issued.
- *AlmondNet, Inc. et al. v. Meta Platforms, Inc. f/k/a Facebook, Inc.*, 6-22-cv-01205 (W.D. Tex.)
  - I understand that this case was transferred to the 8911 N.D. Cal. case identified below.
- *AlmondNet, Inc. et al. v. Microsoft Corporation et al.*, 6-22-cv-01206 (W.D. Tex.)
  - I understand that this case was consolidated into the 897 W.D. Tex. case identified below and that the 897 W.D. Tex. case was designated as the lead case.
- *AlmondNet, Inc., et al. v. Meta Platforms, Inc. f/k/a Facebook, Inc.*, 4-22-cv-08911 (N.D. Cal.) ("8911 N.D. Cal. case")
  - I understand that this case was reassigned to the 7515 N.D. Cal. case.
- *AlmondNet, Inc. et al. v. Roku, Inc.*, 6-21-cv-00731 (W.D. Tex.)
  - I understand that this case is currently stayed. I further understand that prior to the stay claim construction briefing did not occur and that a claim construction ruling was not issued.
- *AlmondNet, Inc. et al v. Facebook, Inc.*, 6-21-cv-00896 (W.D. Tex.)
  - I understand that this case was transferred to the 8911 N.D. Cal. case.
- *AlmondNet, Inc. et al v. Microsoft Corporation*, 6-21-cv-00897 (W.D. Tex.) ("897 W.D. Tex. case")

- I understand that this case is currently pending and that a claim construction order was issued. I further understand that the claim construction briefing in this case was jointly submitted in the 898 W.D. Tex. case identified below. I also understand that the claim construction order in this case was also entered into the 898 W.D. Tex. case.

- *AlmondNet, Inc. et al v. Amazon.com, Inc. et al.*, 6-21-cv-00898 (W.D. Tex.) ("898 W.D. Tex. case")
  - I understand that this case is currently pending. I further understand that the claim construction briefing and the claim construction order issued in this case and the 897 W.D. Tex. case are the same.
- *AlmondNet, Inc. et al. v. Samsung Electronics Co., Ltd. et al.*, 6-21-cv-00891 (W.D. Tex.)
  - I understand this case was transferred to the 7515 N.D. Cal. case.
- *AlmondNet, Inc. v. Roku, Inc.*, 6-21-cv-00876 (W.D. Tex.)
  - I understand this case was transferred to the 1540 D. Del. case which was then consolidated with the 1035 D. Del. case.
- *AlmondNet, Inc. et al v. Oath Holdings Inc.*, 1-19-cv-00247 (D. Del.) ("Oath Holdings case")
  - I understand that this case is terminated. I understand that claim construction briefing occurred in this case prior to termination but that a claim construction ruling was not issued prior to termination.
- *AlmondNet, Inc. et al v. Yahoo! Inc.*, 1-16-cv-01557 (E. D. N.Y.)
  - I understand this case was transferred to the *Oath Holdings* case.

85. As discussed in more detail below, I understand that the parties in the *Oath Holdings* case engaged in claim construction briefing involving one or more of the ’307, ’582, ’904, and ’249 patents but that the case was terminated prior to issuance of a claim construction order. I understand that Petitioner had no involvement in the *Oath Holdings* case, and I had no involvement in the *Oath Holdings* case.

86. As discussed in more detail below, I understand that the parties in the 7515 N.D. Cal. case, the parties in the 897 W.D. Tex. case, and the parties in the 898 W.D. Tex. case engaged in claim construction briefing involving the ’582 patent. I understand that the same claim construction briefing was submitted by the parties in each of these cases. I also understand that for the 897 W.D. Tex. case and the 898 W.D. Tex. case, a claim construction hearing was held and that the same claim construction order was entered into each of these cases. I understand that Petitioner had no involvement in the 7515 N.D. Cal. case, the 897 W.D. Tex. case, or the 898 W.D. Tex. case, and I had no involvement in these cases as well.

87. As discussed in more detail below, I understand that the parties in the 1035 D. Del. case engaged in claim construction briefing involving the ’582 patent and that a claim construction hearing was held. I understand that certain claim construction rulings were made during the claim construction hearing and that a claim construction order is forthcoming. I understand that Petitioner had no

involvement in the 1035 D. Del. case, and I had no involvement in the 1035 D. Del. case.

88. As discussed in more detail below, I understand that the '307 patent was the subject of a petition for Covered Business Method (CBM) review filed by third party Yahoo! Inc. ("Yahoo!"), *Yahoo! Inc. v. AlmondNet, Inc.*, Case No. CBM2017-00049, in which institution was denied. Ex. 1013. I understand that Petitioner had no involvement in the Yahoo! petition, and I had no involvement in that proceeding.

89. As discussed in more detail below, I understand that the '249 patent was the subject of a petition for CBM review filed by third party Yahoo!, *Yahoo! Inc. v. AlmondNet, Inc.*, Case No. CBM2017-00050, in which institution was denied. Ex. 1014. I understand that Petitioner had no involvement in the Yahoo! petition, and I had no involvement in that proceeding.

90. As discussed in more detail below, I understand that the '904 patent was the subject of a petition for CBM review filed by third party Yahoo!, *Yahoo! Inc. v. AlmondNet, Inc.*, Case No. CBM2017-00051, in which institution was denied. Ex. 1015. I understand that Petitioner had no involvement in the Yahoo! petition, and I had no involvement in that proceeding.

91. As discussed in more detail below, I understand that the '582 patent was the subject of a petition for CBM review filed by third party Yahoo!, *Yahoo!*

Inc. v. AlmondNet, Inc., Case No. CBM2017-00052, in which institution was denied. Ex. 1016. I understand that Petitioner had no involvement in the Yahoo! petition, and I had no involvement in that proceeding.

92. As discussed in more detail below, I understand that the '582 patent was the subject of a petition for IPR filed by third parties Samsung Electronics Co., Ltd. ("Samsung") and Microsoft Corporation ("Microsoft"), *Samsung Electronics Co., Ltd. and Microsoft Corp. v. AlmondNet, Inc. and Intent IQ, LLC*, Case No. IPR2022-01260, in which institution was denied. Ex. 1017. I understand that Petitioner had no involvement in the Samsung-Microsoft petition, and I had no involvement in that proceeding.

93. As discussed in more detail below, I understand that the '582 patent was the subject of a petition for IPR filed by third parties Amazon.com, Inc., Amazon Web Services, Inc., and Amazon.com Services LLC ("Amazon"), *Amazon.com, Inc. et al. v. AlmondNet, Inc.*, Case No. IPR2022-01455, in which institution was denied. Ex. 1018. I understand that Petitioner had no involvement in the Amazon petition, and I had no involvement in that proceeding.

94. As discussed in more detail below, I understand that the '582 patent was the subject of a petition for IPR filed by third Meta Platforms, Inc. ("Meta"), *Meta Platforms, Inc. v. AlmondNet, Inc. and Intent IQ, LLC*, Case No. IPR2022-

01436, in which institution was granted. Ex. 1019. I understand that Petitioner had no involvement in the Meta petition, and I had no involvement in that proceeding.

A. The *Oath Holdings* Case

95. As shown in the table below, I understand that the parties in the *Oath Holdings* case proposed the following constructions for the following claim language of the '307, '582, '904, and '249 patents. I understand that a claim construction hearing did not occur and that a claim construction ruling was not issued in the *Oath Holdings* case prior to its termination.

Claim Term	Defendant Oath Holdings' Proposed Construction	AlmondNet's Proposed Construction	Identified Asserted Claim(s)
"wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer"	"a web server accessed by the user computer tells a client browser to obtain a certain requested page from a different location" [construing "automatic electronic URL redirection from a portion of a page of the website accessed by the user computer"]	"a partial profile is received as a result of a user computer accessing a website page, thus causing a web server to tell the user computer's browser to obtain certain information for a portion of the accessed page from a different location"	claim 1 of the '307 patent; claim 1 of the '582 patent; and claims 1 and 11 of the '249 patent

Claim Term	Defendant Oath Holdings' Proposed Construction	AlmondNet's Proposed Construction	Identified Asserted Claim(s)
"an electronically URL-redirected partial profile of an entity that uses a user computer coupled to the global computer network to access a website"	"a partial profile obtained when a web server tells a client browser to obtain a certain requested page from a different location" [construing "an electronically URL-redirected partial profile"]	"a partial profile sent when a user computer accesses a website through the Internet and a web server tells the user computer's browser to obtain certain information from a different location"	claim 1 of the '904 patent
"a maintained profile believed to be related to the same entity" / "which stored profile is believed to be related to the same entity"	indefinite	"'believed to be related' means "determined by a computer as matching either (i) at least one identifying attribute or information or (ii) any predetermined combination of profile attributes used as a key."	claim 1 of the '307 patent; claim 1 of the '582 patent; and claim 1 of the '904 patent/claims 1 and 11 of the '249 patent

Claim Term	Defendant Oath Holdings' Proposed Construction	AlmondNet's Proposed Construction	Identified Asserted Claim(s)
"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" / "wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network"	"wherein data including the maintained profile and the added partial profile is used to target third-party advertisements to the user computer over the global computer network"	ordinary meaning	claim 1 of the '307 patent; claim 1 of the '582 patent; and claim 1 of the '904 patent/claim 1 of the '249 patent
"wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer	indefinite	ordinary meaning	claim 11 of the '249 patent

Claim Term	Defendant Oath Holdings' Proposed Construction	AlmondNet's Proposed Construction	Identified Asserted Claim(s)
over the global computer network"			

Ex. 1010, 9-10 (Joint Claim Construction Statement), 59-75 (Yahoo's Claim Construction Brief).

B. The 7515 N. D. Cal. Case, The 897 W.D. Tex. Case, And The 898 W.D. Tex. Case

96. I understand that the same claim construction briefing was submitted in each of the 7515 N.D. Cal. case, the 897 W.D. Tex. case, and the 898 W.D. Tex. case. As shown in the table below, I understand that the parties in each of these cases proposed the following constructions for the following claim language of the '582 patent. I understand that the 7515 N.D. Cal. case is currently stayed, and that a claim construction hearing was not held and that a claim construction ruling was not issued prior to the stay. I understand that a single claim construction hearing was held for the 897 W.D. Tex. case and the 898 W.D. Tex. case and that a single claim construction order was issued for the 897 W.D. Tex. case and the 898 W.D. Tex. case.

Claim Term	AlmondNet's Proposed Construction	Defendants' Proposed Construction	Identified '582 Patent Claim(s)
"unaffiliated third parties" / "unaffiliated third party"	a party not having common ownership with the party or parties that control said programmed computer system	"unaffiliated third party"/ "unaffiliated third parties": indefinite, lacks reasonable certainty as to its scope *** "third party" / "third parties": a party not having common ownership with the party or parties that own said programmed computer system	Claims 1, 5, 11, and 15
"partial profile"	Not indefinite. No construction necessary; plain and ordinary meaning.	Indefinite, lacks reasonable certainty as to its scope.	Claims 1, 3, 4, 6, 11, 13, 14, and 16
"available"	No construction necessary; plain and ordinary meaning	electronically accessible	Claims 1 and 11
"automatically with the computer system" / "automatically" / "automatic"	No construction necessary; plain and ordinary meaning	not manually	Claims 1, 5, 6, 9, 10, 11, 14, 15, 16, 19, and 20
"URL redirection"	obtaining certain information for at least a portion of an accessed page / site from a different location	obtaining a requested webpage from a different location	Claims 1, 10, 11, and 20
"indicia of instructions" / "indicia of a condition" / "indicia"	Not indefinite. No construction necessary; plain and ordinary meaning	Indefinite, lacks reasonable certainty as to its scope	Claims 11, 15, 16, 19, and 20

Ex. 1011, 5-6 (Joint Claim Construction Statement).

97. As I discuss in more detail below in Section XI, I understand that in the claim construction order issued in the 897 W.D. Tex. case and the 898 W.D. Tex. case, the Court determined that each term listed above should be construed as having its plain and ordinary meaning. Ex. 1011, 30-54, 69-71 (Texas Court Claim Construction Order).

C. The 1035 D. Del. Case

98. As shown in the table below, I understand that the parties in the 1035 D. Del. case proposed the following constructions for the following claim language of the '582 patent, and that the Court issued the following constructions during the claim construction hearing. I understand that a further claim construction ruling is forthcoming.

Term	AlmondNet's Proposed Construction	Roku's Proposed Construction	Court's Construction	'582 Patent Claim(s)
The preambles of claims 1 and 11	Not limiting	Limiting	No construction provided by the Court yet.	Claims 1 and 11
"unaffiliated third parties" / "unaffiliated third party"	Not indefinite	Indefinite	Not closely associated or related	Claims 1, 5, 11, and 15
"partial profile"	Not indefinite	Indefinite	Not indefinite	Claims 1, 3, 4, 6, 11, 13, 14, and 16
"available"	Plain and ordinary meaning, which	Electronically accessible	Electronically available	Claims 1 and 11

Term	AlmondNet's Proposed Construction	Roku's Proposed Construction	Court's Construction	'582 Patent Claim(s)
	is "available"			
"automatically with the computer system" / "automatically" / "automatic"	Plain and ordinary meaning, wherein "automatically" / "automatic" does not mean "manually" / "manual"	Not manually	Done with little to no human control	Claims 1, 4-6, 9-11, 14-16, and 19-20
"URL redirection"	Obtaining certain information for at least a portion of an accessed page / site from a different location	Obtaining a requested webpage from a different location	Obtaining a requested webpage or a portion of a requested webpage from a different location	Claims 1, 10, 11, and 20.
"indicia of instructions" / "indicia of a condition" / "indicia"	Not indefinite	Indefinite	Not indefinite	Claims 11, 15, 16, 19, and 20

Ex. 1012, 6, 8-13 (Joint Claim Construction Statement, Exhibit 1), 114-121 (Markman Hearing Transcript).

D. CBM Review Of The '307 Patent By Yahoo!

99. I understand that Yahoo! filed an initial petition for CBM review on May 11, 2017 challenging claims 1-3 and 6-8 of the '307 patent and filed a corrected petition for CBM review on June 2, 2017 challenging the same claims. Ex. 1013, 1-72 (Corrected Petition). I understand that Yahoo! alleged that independent claim 1

and dependent claim 8 of the '307 patent included the following "financial-activity related limitations":

- Claim element 1b – "a plurality of unaffiliated third parties;"
- Claim element 1f – "third-party advertisements;" and
- Claim 8 – "a payment amount due to the unaffiliated third party."

Ex. 1013, 14-16 (Corrected Petition). I understand that Yahoo! further alleged that the term "unaffiliated third parties" should be construed as "parties that engage in arm's length transactions to buy and sell profiles" and that the term "third-party advertisements" should be construed as "paid announcements." Ex. 1013, 22-34. I understand that Yahoo! did not challenge the validity of any claim based on prior art in its CBM petitions.

100. I understand that Patent Owner filed a statutory disclaimer of dependent claims 8 and 10 on September 6, 2017. Ex. 1004, 314. I understand that Patent Owner filed a Preliminary Response on the same day arguing that no explicit construction of "unaffiliated third party" was required and that the broadest reasonable interpretation of "advertisement" is a notice or announcement. Ex. 1013, 91-100 (Patent Owner's Preliminary Response).

101. I understand that the PTAB issued a decision denying institution of CBM review on November 28, 2017. Ex. 1013, 131-146. Regarding construction of the term "unaffiliated third party," I understand that the PTAB stated:

> We are unpersuaded that "unaffiliated third party" is limited to "parties that engage in arm's length transactions to buy and sell profiles." As explained above, the term also encompasses parties that engage in other types of transactions (e.g., trades). We agree with Patent Owner that "unaffiliated third parties" does not require any further construction. Ex. 1013, 139.

102. Regarding "third-party advertisements," I understand that the PTAB decided to construe the term "as 'third party announcements,' which does not include the word 'paid.'" Ex. 1013, 143. I understand that the PTAB stated that because dependent claims 8 and 10 were disclaimed, they could not provide the basis for eligibility for CBM review. Ex. 1013, 144-145. Additionally, I understand that the PTAB noted that Yahoo!'s assertion that independent claim 1 recited financial activity elements was entirely premised on Yahoo!'s proposed constructions. Ex. 1013, 145. I understand that since the PTAB did not adopt Yahoo!'s constructions for either proposed term, the PTAB concluded that Yahoo! did not show that either term is a financial activity element and further concluded that the '307 patent was not shown to be eligible for CBM review. Ex. 1013, 145-146.

E. CBM Review Of The '249 Patent By Yahoo!

103. I understand that Yahoo! filed an initial petition for CBM review on May 15, 2017 challenging claims 1-6, 9-16, and 19-25 of the '249 patent and filed a corrected petition for CBM review on June 2, 2017 challenging the same claims. Ex. 1014, 1-78 (Corrected Petition). I understand that Yahoo! alleged that

independent claims 1, 11 and 21 and dependent claims 2, 12, and 22 of the '249 patent included the following "financial-activity related limitations":

- Claim elements 1b, 11b, and 21b – "a plurality of unaffiliated third parties;"
- Claim elements 1f, 11f, and 21f – "third-party advertisements;" and
- Claims 2, 12, and 22 – "a payment amount due to the unaffiliated third party."

Ex. 1014, 14-19. I understand that Yahoo! further alleged that the term "unaffiliated third parties" should be construed as "parties that engage in arm's length transactions to buy and sell profiles" and that the term "third-party advertisements" should be construed as "paid announcements." Ex. 1014, 25-36. I understand that Yahoo! did not challenge the validity of any claim based on prior art in its CBM petitions.

104. I understand that Patent Owner filed a statutory disclaimer of dependent claims 2, 12, and 22 on September 6, 2017. Ex. 1007, 182. I understand that Patent Owner filed a Preliminary Response on the same day arguing that no explicit construction of "unaffiliated third party" was required and that the broadest reasonable interpretation of "advertisement" is a notice or announcement. Ex. 1014, 99-107.

105. I understand that the PTAB issued a decision denying institution of CBM review on November 28, 2017. Ex. 1014, 138-154. Regarding construction of the term "unaffiliated third party," I understand that the PTAB stated:

> We are unpersuaded that "unaffiliated third party" is limited to "parties that engage in arm's length transactions to buy and sell profiles." As explained above, the term also encompasses parties that engage in other types of transactions (e.g., trades). We agree with Patent Owner that "unaffiliated third parties" does not require any further construction. Ex. 1014, 146.

106. Regarding "third-party advertisements," I understand that the PTAB decided to construe the term "as 'third party announcements,' which does not include the word 'paid.'" Ex. 1014, 150. I understand that the PTAB stated that because dependent claims 2, 12, and 22 were disclaimed, they could not provide the basis for eligibility for CBM review. Ex. 1014, 151-152. Additionally, I understand that the PTAB noted that Yahoo!'s assertion that independent claims 1, 11, and 21 recited financial activity elements was entirely premised on Yahoo!'s proposed constructions. Ex. 1014, 152. I understand that since the PTAB did not adopt Yahoo!'s constructions for either proposed term, the PTAB concluded that Yahoo! did not show that either term is a financial activity element and further concluded that the '249 patent was not shown to be eligible for CBM review. Ex. 1014, 152-153.

F. CBM Review Of The '904 Patent By Yahoo!

107. I understand that Yahoo! filed an initial petition for CBM review on May 15, 2017 challenging claims 1-6, 9-16, 19-26, 29 and 30 and filed a corrected petition for CBM review on June 2, 2017 challenging the same claims. Ex. 1015, 1-78 (Corrected Petition). I understand that Yahoo! alleged that independent claims 1, 11 and 21 and dependent claims 2, 12, and 22 of the '904 patent included the following "financial-activity related limitations":

- Claim elements 1b, 11b, and 21b – "a plurality of unaffiliated third parties;"
- Claim elements 1e, 11e, and 21e – "third-party advertisements;" and
- Claims 2, 12, and 22 – "a payment amount due to the unaffiliated third party."

Ex. 1015, 14-20 (Corrected Petition). I understand that Yahoo! further alleged that the term "unaffiliated third parties" should be construed as "parties that engage in arm's length transactions to buy and sell profiles" and that the term "third-party advertisements" should be construed as "paid announcements." Ex. 1015, 25-37 (Corrected Petition). I understand that Yahoo! did not challenge the validity of any claim based on prior art in its CBM petitions.

108. I understand that Patent Owner filed a statutory disclaimer of dependent claims 2, 12, and 22 on September 6, 2017. Ex. 1006, 172. I understand that Patent Owner filed a Preliminary Response on the same day arguing that no explicit construction of "unaffiliated third party" was required and that the broadest

reasonable interpretation of "advertisement" is a notice or announcement. Ex. 1015, 98-107 (Patent Owner's Preliminary Response).

109. I understand that the PTAB issued a decision denying institution of CBM review on November 28, 2017. Ex. 1015, 138-154 (Institution Decision). Regarding construction of the term "unaffiliated third party," I understand that the PTAB stated:

> We are unpersuaded that "unaffiliated third party" is limited to "parties that engage in arm's length transactions to buy and sell profiles." As explained above, the term also encompasses parties that engage in other types of transactions (e.g., trades). We agree with Patent Owner that "unaffiliated third parties" does not require any further construction. Ex. 1015, 146.

110. Regarding "third-party advertisements," I understand that the PTAB decided to construe the term "as 'third party announcements,' which does not include the word 'paid.'" Ex. 1015, 150. I understand that the PTAB stated that because dependent claims 2, 12, and 22 were disclaimed, they could not provide the basis for eligibility for CBM review. Ex. 1015, 151-152. Additionally, I understand that the PTAB noted that Yahoo!'s assertion that independent claims 1, 11, and 21 recited financial activity elements was entirely premised on Yahoo!'s proposed constructions. Ex. 1015, 152. I understand that since the PTAB did not adopt Yahoo!'s constructions for either proposed term, the PTAB concluded that Yahoo!

did not show that either term is a financial activity element and further concluded that the ’904 patent was not shown to be eligible for CBM review. Ex. 1015, 152-153.

G. CBM Review Of The ’582 Patent By Yahoo!

111. I understand that Yahoo! filed an initial petition for CBM review on May 15, 2017 challenging claims 1-6, 9, and 10 of the ’582 patent and filed a corrected petition for CBM review on June 2, 2017 challenging the same claims. Ex. 1016 (Corrected Petition). I understand that Yahoo! alleged that independent claim 1 and dependent claim 2 of the ’582 patent included the following “financial-activity related limitations”:

- Claim elements 1b – “a plurality of unaffiliated third parties;”
- Claim element 1f – “third-party advertisements;” and
- Claim 2 – “a payment amount due to the unaffiliated third party.”

Ex. 1016, 14-16. I understand that Yahoo! further alleged that the term “unaffiliated third parties” should be construed as “parties that engage in arm’s length transactions to buy and sell profiles” and that the term “third-party advertisements” should be construed as “paid announcements.” Ex. 1016, 23-34. I understand that Yahoo! did not challenge the validity of any claim based on prior art in its CBM petitions.

112. I understand that Patent Owner filed a statutory disclaimer of dependent claims 2 and 12 on September 6, 2017. Ex. 1005, 154. I understand that Patent

Owner filed a Preliminary Response on the same day arguing that no explicit construction of "unaffiliated third party" was required and that the broadest reasonable interpretation of "advertisement" is a notice or announcement. Ex. 1016, 93-101 (Patent Owner's Preliminary Response).

113. I understand that the PTAB issued a decision denying institution of CBM review on November 28, 2017. Ex. 1016, 132-148 (Institution Decision). Regarding construction of the term "unaffiliated third party," I understand that the PTAB stated:

> We are unpersuaded that "unaffiliated third party" is limited to "parties that engage in arm's length transactions to buy and sell profiles." As explained above, the term also encompasses parties that engage in other types of transactions (e.g., trades). We agree with Patent Owner that "unaffiliated third parties" does not require any further construction. Ex. 1016, 140.

114. Regarding "third-party advertisements," I understand that the PTAB decided to construe the term "as 'third party announcements,' which does not include the word 'paid.'" Ex. 1016, 144. I understand that the PTAB stated that because dependent claim 2 was disclaimed, it could not provide the basis for eligibility for CBM review. Ex. 1016, 145-146. Additionally, I understand that the PTAB noted that Yahoo!'s assertion that independent claim 1 recited financial activity elements was entirely premised on Yahoo!'s proposed constructions. Ex.

1016, 146. I understand that since the PTAB did not adopt Yahoo!'s constructions for either proposed term, the PTAB concluded that Yahoo! did not show that either term is a financial activity element and further concluded that the '582 patent was not shown to be eligible for CBM review. Ex. 1016, 146-147.

H. IPR Of The '582 Patent By Samsung And Microsoft

115. I understand that Samsung and Microsoft filed a petition for IPR on July 19, 2022 challenging claims 1, 9, 11, 13-16, 19, and 20 of the '582 patent. Ex. 1017, 1-71 (Petition). I understand that in a first ground, claims 1, 9, 11, 13-15, 19, and 20 were alleged to be unpatentable under pre-AIA 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,836,799 to Philyaw et al. ("Philyaw") in view of U.S. Patent No. 5,948,061 to Merriman et al. ("Merriman"). Ex. 1017, 8 (Petition). I understand that in a second ground, claim 16 was alleged to be unpatentable under pre-AIA 35 U.S.C. § 103(a) as being obvious over Philyaw in view of Merriman further in view of U.S. Patent No. 6,189,008 to Easty et al. Ex. 1017, 8 (Petition). I understand that Petitioners did not propose any constructions for any claim terms. Ex. 1017, 10-11 (Petition). In its Preliminary Response, I understand that Patent Owner also did not propose any constructions for any claim terms. Ex. 1017, 81.

116. I understand that the PTAB issued a decision denying institution of IPR on February 7, 2022. Ex. 1017, 98-115. I understand that the PTAB determined that no claim term required express construction to determine whether to institute

the IPR. Ex. 1017, 102-103. I understand that the PTAB stated the following regarding the alleged Philyaw-Merriman combination in determining to deny institution of the IPR:

> We agree with Patent Owner that Petitioner's reasoning in support of the proposed combination lacks rational underpinning. Specifically, we agree that there is no motivation to add Merriman's URL redirection to Philyaw's system. We further agree with Patent Owner that Petitioner "fails to provide any evidence that a POSITA would have believed Philyaw to lack any important detail (or contain any other deficiency) with respect to user exits of websites" that would prompt a person of ordinary skill in the art to look to other references such as Merriman. Rather, as discussed in detail below, Philyaw specifically addresses what happens when a user exits a vendor website.
>
> * * *
>
> Because Philyaw describes what happens when a user exits a vendor website, there is no reason for a person of ordinary skill in the art to have considered teachings regarding website exits. Consequently, Petitioner's articulated reasoning lacks rational underpinning because it is based on the incorrect premise that Philyaw does not address what happens when a user exits a website. Ex. 1017, 111-112 (internal citations omitted).

117. In view of these determinations, I understand that the PTAB determined that Petitioners did not demonstrate a reasonable likelihood of prevailing with respect to any of the challenged claims and therefore denied institution of the IPR. Ex. 1017, 113.

I. IPR Of The '582 Patent By Amazon

118. I understand that Amazon filed a petition for IPR on August 31, 2022 challenging claims 11, 13-16, 19, and 20 of the '582 patent. Ex. 1018, 1-66 (Petition). I understand that in the only ground, claims 11, 13-16, 19, and 20 were alleged to be unpatentable under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 8,566,154 to Merriman et al. ("Merriman '154") in view of U.S. Patent No. 6,073,241 to Rosenberg et al. ("Rosenberg"). Ex. 1018, 14-15. I note that Merriman '154 includes similar subject matter to Merriman '061 (which I have applied against the claims of the '307 and '249 patents), but the specifications are not the same. I understand that Petitioner did not propose any constructions for any claim terms. Ex. 1018, 16. In its Preliminary Response, I understand that Patent Owner also did not propose any constructions for any claim terms. Ex. 1018, 77.

119. I understand that the PTAB issued a decision denying institution of IPR on April 6, 2023. Ex. 1018, 107-126 (Institution Decision). I understand that the PTAB determined that no claim term required express construction to determine whether to institute the IPR. Ex. 1018, 112. I understand that the PTAB stated that

it agreed with Patent Owner's arguments that the petition relied on two "mutually exclusive" embodiments of Merriman '154 "for its invalidity theory without sufficient explanation of how or why a person of ordinary skill in the art would have combined these embodiments." Ex. 1018, 122-123. I understand that the PTAB explained that for an obviousness argument that relies on combining multiple embodiments from a single reference, a petitioner must provide a motivation to make the combination and a reasonable expectation that such a combination would be successful, which Amazon failed to do. Ex. 1018, 122-124. Accordingly, I understand that the PTAB concluded that "[g]iven the Petition's failure to provide articulated reasoning in support of the proposed combination of Merriman's alternative embodiments [in Merriman '154], Petitioner fails to demonstrate a reasonable likelihood of prevailing" against the challenged claims of the '582 patent. Ex. 1018, 124.

J. IPR Of The '582 Patent By Meta

120. I understand that Meta filed a petition for IPR on August 19, 2022 challenging claims 11, 13-16, and 19-20 of the '582 patent. Ex. 1019, 1-77 (Petition). I understand that in a first ground, claims 11, 13-15, and 19-20 were alleged to be unpatentable under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,073,241 to Rosenberg et al. ("Rosenberg") in view of *Advertising on the Internet* ("Zeff") and *What Makes People Click: Advertising on the Web*

("Sterne"). Ex. 1019, 10. I understand that in a second ground, claim 16 was alleged to be unpatentable under 35 U.S.C. § 103 as being obvious over Rosenberg in view of Zeff and Sterne, in further view of U.S. Patent No. 5,978,791 to Farber et al. ("Farber"). Ex. 1019, 10. I understand that in a third ground, claims 11, 13-15, and 19-20 were alleged to be unpatentable under 35 U.S.C. § 103(a) as being obvious over Rosenberg in view of Zeff and Sterne, in further view of U.S. Patent No. 8,566,154 to Merriman et al. ("Merriman"). Ex. 1019, 10. I understand that in a fourth ground, claim 16 was alleged to be unpatentable under 35 U.S.C. § 103(a) as being obvious over Rosenberg in view of Zeff, Sterne, and Farber, in further view of Merriman. Ex. 1019, 10. I understand that Petitioner did not propose any constructions for any claim terms. Ex. 1019, 13. In its Preliminary Response, I understand that Patent Owner also did not propose any constructions for any claim terms. Ex. 1019, 84.

121. I understand that the PTAB issued a decision granting institution of IPR on April 7, 2022. Ex. 1019, 107. I understand that the PTAB disagreed with both parties that no claim term required express construction to determine whether to institute the IPR. Ex. 1019, 112-113. I understand that the PTAB explained that "[b]oth parties rely on an implicit interpretation of the claim language 'as a result of automatic electronic URL redirection,' and construction of this terminology is necessary to our determination as to whether trial should be instituted in this

proceeding." Ex. 1019, 113. I understand that the PTAB stated that "Patent Owner's implicit interpretation of this claim language precludes intervening user interaction in the time period between redirection and receipt of profile information" and that "[s]pecifically, Patent Owner contends that the claim language at issue precludes Rosenberg's disclosure of a system wherein partial profile information is created after automatic URL redirection and then sent to a receiving computer system." Ex. 1019, 113 (internal citations omitted).

122. I understand that the PTAB further stated that the "Petitioner's implicit interpretation of the claim language . . . does not preclude such intervening action" and noted that the "Petition advances two theories for how Rosenburg discloses this limitation and both of these theories rely on actions that occur after URL redirection." Ex. 1019, 113 (internal citations omitted). I understand that the PTAB concluded that Patent Owner's implicit definition was "overly narrow" and that the "claim does not preclude intervening user action between the time of URL redirection and receipt of the partial profile." Ex. 1019, 113 (internal citations omitted). I understand that institution was granted in view of the PTAB's construction of the claim language "as a result of automatic electronic URL redirection." Ex. 1019, 129-131.

VIII. TECHNICAL BACKGROUND

A. The Internet And Websites

123. The origins of the Internet long predate even the foreign filing date (December 13, 1999) of the '249 patent. Work on ARPANET, the precursor to the modern Internet, began in the 1960s as an attempt to create a globally interconnected set of computers. Ex. 1020, 3. By 1985, the Internet was well established as a technology providing interconnection of devices and services via a global network. *Id*., 9. The Internet provides this interconnection through protocols (*e.g.*, Transmission Control Protocol/Internet Protocol, File Transfer Protocol, etc.), typically defined by various standards organizations, which govern the exchange of information between devices on the global network. *Id*., 9-10.

124. The modern Internet includes an information management system known as the World Wide Web ("the Web"). Ex. 1033, 496.[1] The Web was proposed in 1989 and first developed in 1990 to serve as a universal linked information system on the Internet. The Web is managed by an organization (the World Wide Web Consortium (W3C)) that governs the various protocols controlling information exchange on the Internet. Ex. 1020, 11, 14.

125. One such protocol is the Uniform Resource Locator ("URL") protocol, which governs addressing protocols for locating and accessing Internet resources,

[1] Cited page numbers for Ex. 1033 refer to the native page numbers of the book.

such as websites on the Web. Ex. 1021, 1-5. A URL provides the address of an object (*e.g.*, a website) on the Internet and is used to retrieve the object. *Id*. This protocol was first published in 1994, and its function and capabilities would have been well known to a POSITA by the earliest claimed priority date of the '249 patent. *Id*.

126. A URL has three main parts: a protocol specifier (e.g. "http:") indicating a protocol to be used in retrieving an object from the Internet, an Internet domain (e.g., www.website.com) that gives the address of a server that a user device should contact to retrieve the object, and a path/filename (appended to the end of the domain name) to find the desired object on the server. Ex. 1022, 42, 165-66;[2] Ex. 1047, 169-171, 181.[3] Additional information can be appended to URLs in the form of additional strings, and said information may be processed by other programs. Ex. 1022, 166, 174, 194. A POSITA would have known that information appended to the end of a URL may be treated as extra path information, and that appending extra path information is a way to send data from a client device to a server. Ex. 1022, 209, 241.

127. URLs are used by another protocol, the Hypertext Transfer Protocol (HTTP) to transfer data over the Web. HTTP is an application-level protocol that

[2] Cited page numbers for Ex. 1022 refer to the native page numbers of the book.
[3] Cited page numbers for Ex. 1047 refer to the native page numbers of the book.

has been in use by the Web since 1990, and was formalized in 1996 by WC3. *See* Ex. 1023. HTTP utilizes URLs to indicate the purpose of requests sent from one device to another, both connected to the Internet. *Id*. For example, a first device may request a resource identified by a URL, such as a website, from a server managing the website.

128. A website is a "set[] of [w]eb [p]ages that can be visited with [w]eb [b]rowsers." Ex. 1024. Web pages are digital documents commonly written using Hypertext Markup Language (HTML), which has been in use on the Web since 1990; a standard was published in November of 1995. *See* Ex. 1025. HTML documents often include hyperlinks, which direct users to different HTML documents. *Id*., 36-37.

129. Entities accessing the Internet use URLs and hyperlinks to navigate from one web page to another using web browsers. *See id.*; Ex. 1033, 498-500; Ex. 1047, 151-153. A web browser reads instructions or tags included in the HTML code of a given webpage to retrieve the web page for the user and present the information (*e.g.*, via a display screen). *See* Ex. 1026, 5; Ex. 1025, 9. An entity may request access to a web page from a server via a request message that includes the URL of the requested web page. *See* Ex. 1027.

B. Databases and User/Visitor Profiles

130. Databases played a crucial role in searching, organizing, and combining information efficiently (as early as in 1990, but definitely prior to 1999). Ex. 1046, 5-7.[4] They were (and are) designed to advantageously facilitate the storage, retrieval, and management of various types of information (such as user profile information). Ex. 1046, 8-9, 645. The following provides a listing of some aspects of how databases were used for searching and combining information (prior to 1999):

- Structured Storage: Data was typically organized into tables, which consist of rows and columns. Each row generally represents a single record, while each column generally represents a specific attribute or field of the data. Ex. 1046, 9-10, 52-56.
- Querying: Databases supported powerful query languages, such as SQL (Structured Query Language), which was used to automatically search for specific information within the database. Queries could retrieve data based on various conditions and had functionality to filter and retrieve relevant information from large datasets quickly. Ex. 1046, 15, 64-66.

[4] Cited page numbers for Ex. 1046 refer to the native page numbers of the book.

- Indexing: Databases use indexing techniques to optimize search performance. Indexes are data structures that allow for fast retrieval of specific data based on predefined criteria. Ex. 1046, 13, 15, 216-218.
- Linking: Databases offered the ability to match and link information such as profile information based on specific identifiers such as user IDs, email addresses, or social security numbers. This enabled the merging of data from different sources that correspond to the same individual, eliminating duplicate profiles and ensuring data accuracy. Ex. 1046, 26-38, 51-62, 215-216.
- Adding additional attributes: Databases could be used to enrich existing information about an object such as profile information by adding additional data attributes. For example, additional demographic data, purchase history, or browsing behavior would have been appended to an existing user profile. Ex. 1046, 26-40, 645, 707-709.
- Data Cleansing and Normalization: Databases were utilized to ensure consistency and accuracy across different fields and sources. This involves removing any duplicate, contradictory, or outdated information, standardizing data formats, and resolving inconsistencies. Ex. 1046, 26, 417-444.

131. The use of databases for Internet applications was also well-known by 1999. Ex. 1046, 642-672. For example, entities accessing web pages on the Internet were associated with profiles stored in databases. Ex. 1046, 645; Ex. 1048, 3-9; Ex.

1049, 3. A POSITA would have been well aware that user/visitor profiles were used in the context of providing targeted advertisements to visitors to a webpage at least since the late 1990s. *See, e.g.*, Ex. 1028 (Goldberg, US Pat. No. 6,183,366), Abstract. User/visitor profiles aggregate information related to a user's Internet behavior, which may subsequently be used in various commercial ventures. Ex. 1034, 18, 30-31, 129-31, 152-55, 264-70.[5] For example, to match "particular users with particular advertising, data (or user information items) on each user [was] maintained in the form of a user profile," which may have been maintained in a database. Ex. 1028, 22:40-44.

132. It was known that profiles include information "obtained when users register at [a] web site" or "by monitoring the network activities of the users." *Id*., 22:47-49. A POSITA would also have understood that the user information included in these profiles "may vary in length, depending on the amount of information obtained from each user," and that they may include one or more attributes of the user/visitor used to determine which advertisements to send, such as age, sex, financial status, education, location, marital status, and other personal attributes. *Id*., 22:15-40, 22:49-59.

133. It was also well known that, because attributes of a user/visitor may change over time, it is beneficial to periodically update profiles stored in a network

[5] Cited page numbers for Ex. 1034 refer to the native page numbers of the book.

database. *See, e.g.*, *id.*, 24:5-13. Likewise, the concept of exchanging information for profiles and creating business-to-business online relationships was known and becoming easier and easier to implement. Ex. 1034, 280-283. Thus, the benefits and the technology relating to user/visitor profiles maintained by Internet-connected computing systems would have been well known to a POSITA prior to the '249 patent.

C. Cookies

134. A POSITA would have known that a "cookie" in the context of the Web and user profiles is "an identifier assigned by a Web site . . . to a user/visitor when the user visits the Web site," and that the cookie belongs to the particular user it is assigned. Ex. 1029 (Simons, US Pat. No. 7,334,184), 6:45-51. Cookies are created and owned by the website that put them on the user's browser. Ex. 1047, 282-283. A cookie contains information specific to that website, such as user preferences, login information, or browsing behavior. *Id.* Each website has its own set of cookies, and they are used to enhance the user's browsing experience and provide personalized content. *Id.* It was known to tag users/visitors to a web site with a cookie to facilitate the collection of information pertaining to the user/visitor, or their device. *Id.* For example, a cookie embedded in the client's browser may track "where on the Internet the client has visited." Ex. 1034, 264-267, 275. "As [was] known in the art of Internet application programming, cookies can also be permanent

in that they subsist with a user after the user has logged off the browser [used to access the site] and can be used again in a new session." Ex. 1029, 6:57-60. Use of cookies allows a web site to recognize the user/visitor and "retrieve characteristics of that user from its data repository," characteristics such as attributes related to the delivery of advertisements. *Id*., 6:54-57. Each website or server would have been able to place a unique cookie on a user's browser. Ex. 1047, 282-283. For privacy and other reasons, these cookies were not visible or provided to any other website or server. *Id.* To be clear, only the website or server that put the cookie on a user's browser has access to it. *Id.*

135. It was also well known that cookies could be automatically transmitted when a user/visitor visits a web site, *e.g.*, in order to provide the attributes related to the delivery of advertisements. For example, a POSITA would have known:

> When the client system accesses a Web site within a limited range of domain names, the client system automatically transmits a copy of the cookie to the Web server that serves the Web site. The cookie may include a unique cookie number corresponding to the client system. Thus, the cookie can be used to identify the client system (by identifying the Web browser) and to instruct the server to send a customized copy of the requested Web page to the Web browser.

Ex. 1030, (Gardenswartz, U.S. Patent No. 6,055,573) 2:11-19. By storing user/visitor attributes based on the web pages a user/visitor visits, cookies track the

user/visitor's online activity. Many websites had a portion of the content served by a third party website or an ad server. When this content was retrieved by the user's browser, the third party website or server also set their own cookies if one was not already present. A third-party ad server by having a unique cookie for each user was able to correlate user information that was sent as part of redirection (implicitly or explicitly) across multiple websites because of the presence of its cookie on the user's browser. The uniqueness of the cookie (when used) allowed partial profile information to be collected from multiple servers and combined using standard database operations. Use of other attributes such as IP address or partial demographic information was not always unique – this made it challenging to combine information when a cookie was not present. A POSITA would thus have understood the benefits of using cookies to infer a user/visitor's tastes and tendencies, in order to target specific advertisements to specific users/visitors. *Id*., 2:20-35.

D. URL Redirection

136. A POSITA would have been well aware of the methods and benefits of implementing URL redirection to grant access to content over the Internet. URL redirection was known at least as of the standardization of HTTP in 1996. *See* Ex. 1026, p. 26. For example, it was known that a user/visitor accessing the Internet via a client device could request a resource—stored at a server and identified by a

URL—using HTTP, and receive a response from the server. *Id*., 26. It was also known that a server, using HTTP, could add header information to a resource (e.g., a webpage) before sending it to the user/visitor's client device, in response to the request from the client device to access the resource. Ex. 1022, p. 215. In doing so, the server would append or prepend information (e.g., in the form of a query string) to the URL. *Id*.

137. A POSITA would have known that servers can modify HTTP responses by appending or prepending a "server directive" that contains instructions for the client device. *Id*., 216-17. One such server directive is "Location: URL," a directive that specifies a URL to which the client device should be redirected by telling the client there is redirection information in the header of the HTTP response. *Id*., 217.

138. In these examples, the response from the server would include a "Status-Code element," a 3-digit integer that indicates the result of the server's processing of the user/visitor's request. Ex. 1026, 26. The first digit of this code defines the "class" of response, and one such class is "3xx: Redirection – Further action must be taken in order to complete the request." *Id*., 27. This Status-Code indicates that further action is required before the request is completed, such as redirecting the request to a new location (*e.g.*, a different server, specified by the server directive) associated with another URL. *See id*., 34-35. It was also known

that redirection could be performed automatically, "without interaction with the user." *Id*., 34.

139. URL redirection was even already known in the field of digital advertising. For example, Merriman (Ex. 1035) describes that user/visitors to a webpage may interact with the webpage by first "generat[ing] through the hypertext transfer protocol (HTTP) 14 a request 20 to any one of preferably a plurality of affiliate web sites 12." Ex. 1035, 3:26-28. The webpage would then send back messages using the same protocol with a link including an IP address for another server (e.g., an advertising server). *See id*., 3:28-38. The user's browser "then transmits a message 23 using the received IP address to access [an object] indicated by the HTML tag from the advertising server," thus "redirecting" the user from the webpage to the ad server via the user's browser. *See id*., 3:41-52. Further URL redirection would occur based on further interaction with a portion of the webpage, such as via a "click" with an advertisement displayed on the webpage, which would cause an advertisement server to receive an HTTP request for redirection. *See, e.g.*, Ex. 1035, 7:15-22. The advertisement server would then send a redirect message—such as a 3xx: Redirection response, as described above—"causing the user's web browser to receive the URL for the advertiser's web site based upon data stored in the server." *See* Ex. 1035, 7:22-26.

140. Additionally, in redirecting the user/visitor's web browser to the advertiser's URL, Merriman discloses that the server logs information related to the user/visitor, such as information "that the advertisement was clicked through, which user selected the advertisement based upon the IP address, and the page on which the advertisement was seen . . . ." Ex. 1035, 7:26-30. Messer (Ex. 1031) also describes similar features relating to the known use of URL redirection, including redirecting a user/visitor who "selects [a] banner ad" to a "Clearinghouse server" which "first stores several pieces of information, e.g., site (ID), banner (ID), and USER (X) . . . ." Ex. 1031, 8:53-61. The Clearinghouse server then immediately thereafter redirects the user/visitor to the advertiser's webpage. Ex. 1031, 8:61-64.

141. Thus, it was well known that automatic URL redirection could be used in concert with digital advertising to redirect user/visitors while also storing information related to the user/visitor (*e.g.*, profile information) at a server as a result of the URL redirection. Indeed, the '249 patent (Exhibit 1001) uses URL redirection in a few places in the body of the patent without providing any details or limiting it to any specific URL redirection (e.g., 3xx redirect). This demonstrates that the inventors must have understood that a POSITA would have known the use of URL redirect and its uses for collecting information (such as information that could be used for profiles).

E. Targeted Digital Advertising

142. As described throughout sections VIII.A-D above, digital advertising was known prior to the '249 patent. Ex. 1048, 1-10; Ex. 1049, 1; 1050, 1-2; Ex. 1051, 1-2. Systems and/or entities that gather user/visitor profiles were known to enter into relationships and exchange user/visitor profile information with entities wishing to offer "customized content" (e.g., targeted advertisements) to Internet users. Ex. 1034, 264-73, 280-83; Ex. 1050, Abstract; Ex. 1051, 1-2. Various technologies and techniques for targeting digital ads to specific users/visitors were also known, including the above-described user/visitor profiles, cookies, and URL redirection. Ex. 1048, 3-9; Ex. 1049, 2-3; Ex. 1050, 2-6. For example, Merriman describes "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 [an advertisement]," logged by the server after URL redirection to provide targeted Internet advertising. Ex. 1035, 4:51-55. Heckel (Ex. 1032) similarly describes a "method for advertising over a computer network utilizing virtual environments of games." Ex. 1032, cover. Heckel's method includes implementing user/visitor profiles, achieved by retrieving a "demographic profile…of the user" from an ad server database or a user database to "locate appropriate advertising for the [user]." Ex. 1032, 4:2-9, 4:43-58.

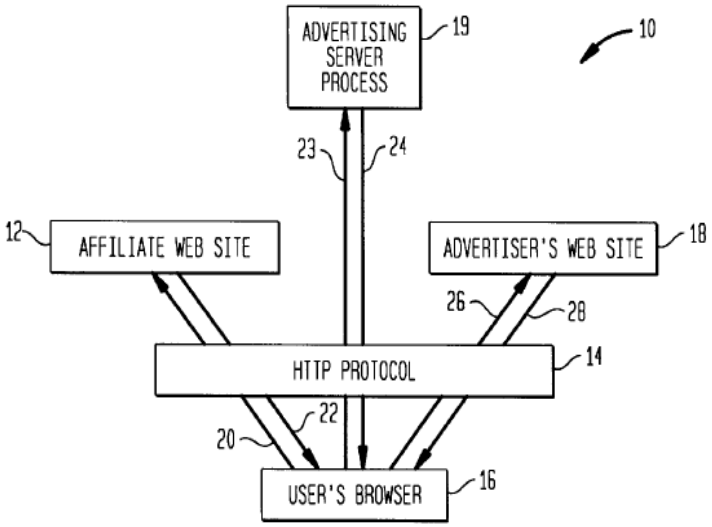
143. Therefore, it was well known to use technologies and relationships such as those described above to identify advertisements of interest to specific user/visitors and provide those advertisements as targeted ads. Ex. 1048, 3-9; Ex. 1049, 1; 1050, 1-2; Ex. 1051, 1-2.

IX. OVERVIEW OF THE RELIED UPON PRIOR ART

A. U.S. PATENT NO. 5,948,061 ("MERRIMAN")

144. Merriman (Ex. 1035) is a U.S. patent filed on October 29, 1996 and issued on September 7, 1999. I understand that Merriman qualifies as prior art under pre-AIA 35 U.S.C. § 102(a) and § 102(e) because of its earlier filing date. Merriman relates to delivering targeted advertisements over a network, such as the Internet, based on user profile information. Ex. 1035, Abstract. Therefore, it is my opinion that Merriman is analogous to the '249 patent.

145. Merriman teaches a network that includes "at least one affiliate web site 12, an advertisement (ad) server web site 19 and one or more individual advertiser's web sites 18." Ex. 1035, 2:59-62, FIG. 1.



Ex. 1035, FIG. 1

Targeted advertisements are provided over Merriman's network in response to a user accessing an affiliate web site (e.g., via an Internet browser), which causes the advertising server to transmit an "appropriate" targeted advertisement "based upon profiling of [the] users." Ex. 1035, Abstract, 2:40-65, 3:6-12, 3:24-28, 4:20-24, 5:50-6:11, 6:56-59. The affiliate web sites are controlled by entities, such as "locator services, service providers, and entities that have popular web sites such as museums, movie studios, etc." and "may be ISP's or may be actual dedicated web servers." Ex. 1035, 2:62-3:4, 3:16-18, 4:16-19.

146. Merriman discloses that the profiling used to select targeted ads includes using a "derive profile process" to compile information on individual users that can be used for targeted advertising. Ex. 1035, Abstract, 2:40-45, 4:20-27.

During said process, a user's browser communicates with an affiliate web site through an HTTP request, receiving one or more messages back that "preferably contain all of the information available at the particular web site 12 for the requested page to be displayed by the user's browser 16 except for one or more advertising objects such as banner advertisements." Ex. 1035, 3:24-34, FIG. 1. The affiliate's web server also includes, in the message from the web site, "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." Ex. 1035, 3:35-38.

147. After receiving information and the IP address from the web site, the user's browser then transmits a message to the ad server, including "(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." Ex. 1035, 3:41-52. Additionally, as part of a "click through" process, when banners or other advertisements are included in the page displayed by the user's browser and the user clicks on them, another message is transmitted to the ad server noting "the address of the computer or browser (or any other identifier such as a cookie or digital signature) that generated the message." Ex. 1035, 3:64-4:2.

148. Merriman further discloses that, after receiving all of the information described above, the information is stored in a database as part of a profile of the user associated with the browser. Ex. 1035, 4:44-51, 5:50-67, FIG. 3A-3C. For example, Merriman's system collects, for each user identified by the system, "a user identification, IP address, domain type, time zone, location of the user, standard industrial code for the user's network, the particular advertisements seen and the number of times each such advertisement is seen, the advertisements that were selected or "clicked on" and the pages on which the various users' advertisements were seen." Ex. 1035, 4:44-51, FIG. 3A.

149. Merriman's system also maintains, in the database, advertisements from various advertiser's web sites "along with a table of the targeting profile criteria for the advertisement . . . ." Ex. 1035, 5:64-67, FIG. 3B. To deliver targeted advertisements, Merriman compares the targeting profile criteria to all of the information known about the user (i.e., the user's profile, stored in the database) to determine which advertisements to select for delivery to the user's browser. Ex. 1035, 5:64-6:11, 6:56-59, 7:23-43.

B. U.S. PATENT NO. 6,285,987 ("ROTH")

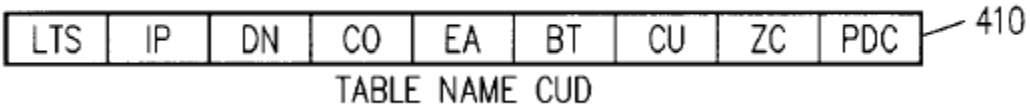
150. Roth (Ex. 1036) is a U.S. patent filed on January 22, 1997 and issued on September 4, 2001. I understand that Roth qualifies as prior art under pre-AIA 35 U.S.C. § 102(e) because of its earlier filing date. Roth relates to providing

targeted advertisements from a central server based on an information database that "includes information about viewers, information about the characteristics of particular web sites and of other information relevant to which advertisements should be displayed for particular viewers." Ex. 1036, Abstract. Therefore, it is my opinion that Roth is analogous to the '249 patent.

151. Roth discloses a system "for providing advertisements from a central server to viewers who access web sites." Ex. 1036, Abstract. Roth describes an example viewer as "a human viewer 10 [who] utilizes a client browser 11 to access a web page 12 on a web site 14." Ex. 1036, 3:33-34, 1:10-16, 1:41-44. Roth also explains that the client browser is a conventional, commercially available web browser. Ex. 1036, 3:40-50. The "central server" is described as an advertising web server system that "includes a data base of advertisements 16A, a data base of viewer information 16B, and a bid selection logic 16C." Ex. 1036, 3:57-59. Roth's advertising web server system provides targeted advertisements when a "view-op" is presented (i.e., when "a viewer has accessed a web page which has an HTML reference to the advertising server"). Ex. 1036, 2:10-19, 4:26-32.

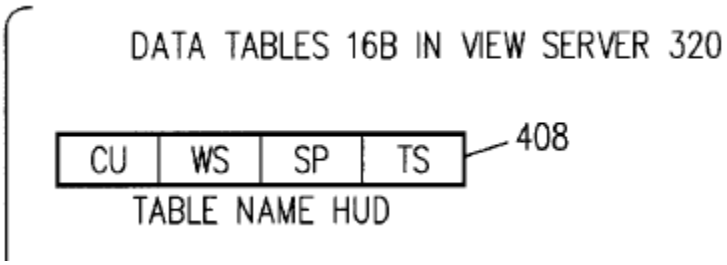
152. Specifically, Roth discloses that when a view-op is presented (i.e., when a viewer accesses a web page), the advertising server obtains "data from a cookie 11A to update the data base of viewer information 16B." Ex. 1036, 4:44-57, 1:41-44, 4:26-32, 5:20-23, 12:11-22. The ad server's database of viewer information

"provides a profile of the sites a particular viewer has accessed" and "data concerning the viewer." Ex. 1036, 1:30-33, 3:57-59, 4:44-49, 12:11-22, claim 16. Roth's data base includes multiple tables of information relative to the view-op, including a Current User Data table showing viewers and their profile characteristics, such as "1) LTS Last Seen Time Stamp, that is, time this viewer was last seen by the system 2) IP Internet Protocol address (from REMOTE_HOST) 3) DN Domain name Full Domain name (from REMOTE_ADDR) 4) CO Cookie 5) EA Email Address 6) BT Browser 7) CU I/CODE data 8) ZC Zipcode." Ex. 1036, 9:17-10:30.



Ex. 1036, CUD Table 410

The ad server's database also includes "HUD table 408" which stores historic viewer data and indicates which sites each viewer has previously accessed." Ex. 1036, 9:31-32, Table 408.



Ex. 1036, HUD Table 408

153. Roth discloses that particular advertisements are targeted to particular categories of viewers. Ex. 1036, 1:30-38. Specifically, when a view-op presents itself, the ad server "sends information concerning the view-op" to bidding agents, which in turn submit bids to the ad server. Ex. 1036, 4:26-32. The information sent to the bidding agents includes the information that the ad server received from the browser and stored in the database as described above, which includes "any type of information that advertisers care to specify in proposed bids." Ex. 1036, 4:26-43, 18:54-60. To determine which ads to target to the viewer generating the view-op, Roth's ad server "compares various bids received from bidding agents 30," where said bids were based on the viewer information stored in the database, and "sends the appropriate advertisement from data base 16A to browser 11." Ex. 1036, 4:26-43.

C. U.S. PATENT NO. 6,415,322 ("JAYE")

154. Jaye (Ex. 1037) is a U.S. patent filed on February 26, 1999 and issued on July 2, 2002. I understand that Jaye qualifies as prior art under pre-AIA 35 U.S.C. § 102(e) because of its earlier filing date. Jaye relates to establishing a global interest profile of a user that may, e.g., be released to interested parties such as advertisers. Ex. 1037, Abstract, 14:15-27. Therefore, it is my opinion that Jaye is analogous to the '249 patent.

155. Jaye describes a method of creating a "global interest profile" of a user of a computer device based on user interaction with local servers. Ex. 1037, FIG. 7, Abstract, 2:16-24, 4:30-39, 5:5-11, 5:49-58. The global interest profile is compiled from interactions such as interactions with web pages that the user accesses via local servers. *Id*. A central "enterprise server" receives the user interaction information from the local servers and records it in a database of user profile information. Ex. 1037, FIG. 7, 2:16-24, 5:5-11. For example, local servers may establish "a local ID for the user and communicate[] to the enterprise server the local ID of the user and a local user profile based on user interaction with the local server." Ex. 1037, Abstract, 2:16-24. Jaye's 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." Ex. 1037, 2:16-24, Abstract.

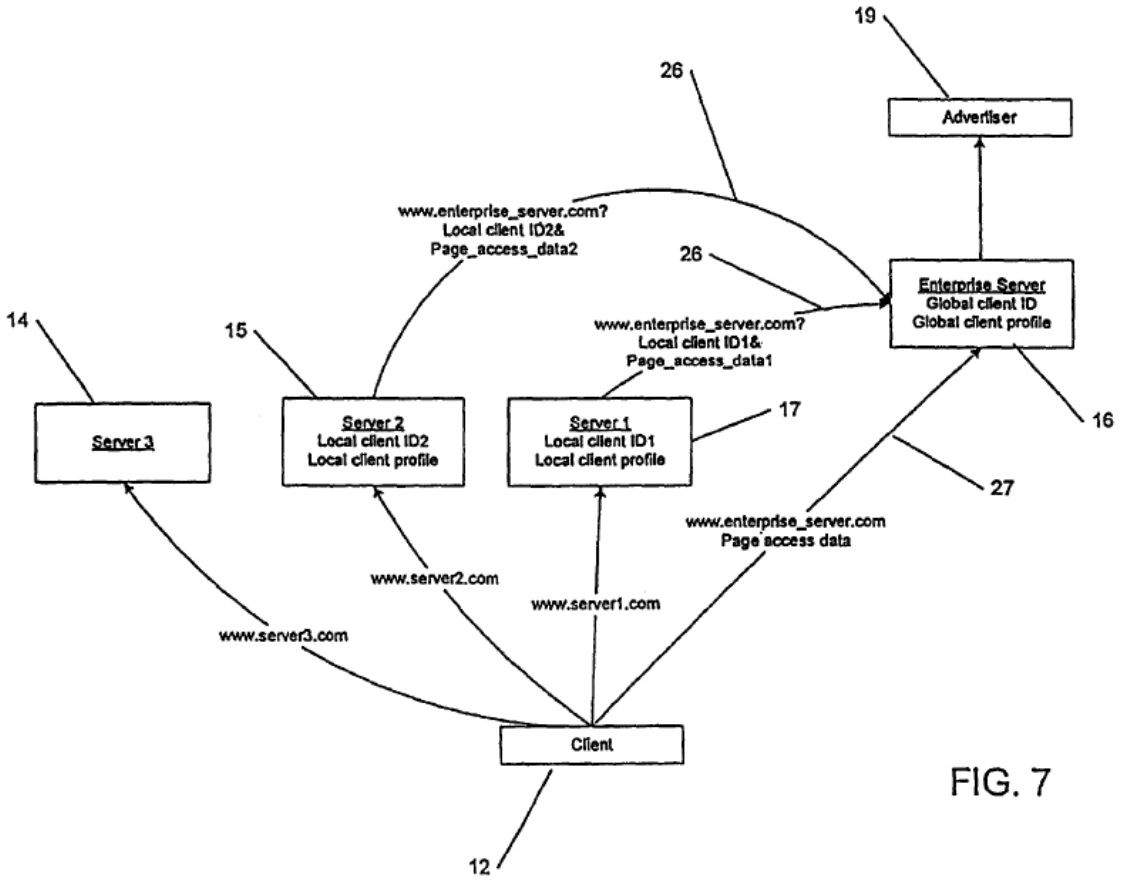


FIG. 7

Ex. 1037, FIG. 7.

156. The IDs are "made persistent using cookies," set by the local servers, and "containing a unique local ID for the client 12 assigned by the local server 15." Ex. 1037, 5:49-58. Using these cookies, the local servers "upload information about the users' page accesses to the enterprise server 16," which then "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." Ex. 1037, 5:5-11. Jaye discloses that the

information may be uploaded by the local server redirecting the user's client device to the enterprise server by automatically connecting the browser to the URL of the enterprise server. Ex. 1037, 6:47-56. Jaye further discloses that one method of redirecting the browser includes inserting "a special URL into the HTML page requested by the client 12. The special URL points to the enterprise server 16 […]. The special URL may also contain additional information, such as information identifying the local server and information indicating the local ID of the user. The additional information may be appended to the end of the URL." Ex. 1037, 6:36-44.

D. U.S. PATENT NO. 5,740,252 ("MINOR")

157. Minor (Ex. 1038) is a U.S. patent filed on October 13, 1995 and issued on April 14, 1998. I understand that Minor qualifies as prior art under pre-AIA 35 U.S.C. § 102(b) because of its issue date. Minor relates to passing user information (e.g., demographic information) between computers in a network. Ex. 1038, Abstract. Therefore, it is my opinion that Minor is analogous to the '249 patent.

158. Minor discloses a particular technique of passing demographic information between computers, by "appending private demographic information to a hyperlink transfer request used to move from one hyperlink computer to another hyperlink computer of a computer network." Ex. 1038, 1:8-12, 1:20-25, 3:45-52, 3:62-4:3, 4:19-33, 5:11-13, FIGS. 2, 3. Minor discloses performing its technique in

a system including an "end-user computer 30 that generates a request that reaches an entry web site 32A." Ex. 1038, 3:37-40, FIG. 2.

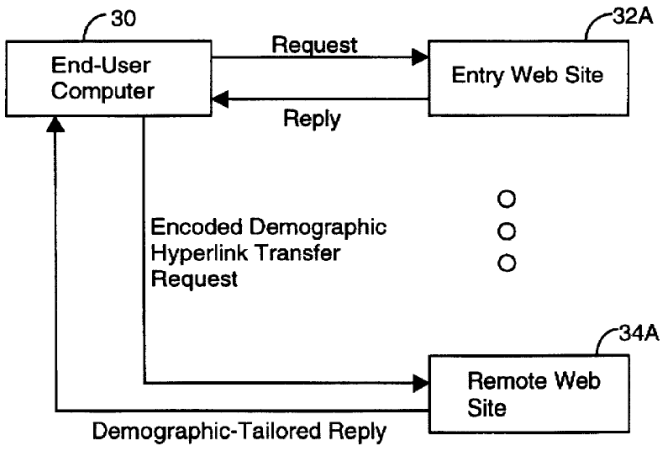


Figure 2

Ex. 1038, FIG. 2

159. As a general description of its technique, Minor describes that a user, operating an end-user computer, uses a web browser to view a web page that "may have a 'hyperlink hot spot', which, when activated, results in a call to a second web computer." Ex. 1038, 1:20-25. Minor describes that the entry web site 32A "is used to obtain demographic information about the computer operator at the end-user computer 30 . . . [t]ypical demographic information includes name, age, zip code, income level, employment information, type of computer used, other purchasing preferences, etc." Ex. 1038, 3:45-52. Once the demographic information is obtained, the entry web site 32A passes a file back to the end-user computer 30 that includes the hyperlink hotspot. Ex. 1038, 3:62-4:3. This may cause a request to be

sent to the entry web site, requesting a hyperlink transfer to another computer such as remote web site 34A. *Id*. As shown in Figure 2 above, the reply from the entry web site 32A sends the demographic information to the remote web site 34A via the end-user computer 30. Ex. 1038, 4:19-25, FIG. 2.

160. Minor discloses that the demographic information may be sent from the entry web site to the remote web site using a process known as a "redirect." Ex. 1038, 5:34-43, 5:61-6:5. For example, the entry web site may cause a transparent hyperlink request, including the remote site destination address and the encoded demographic information, to be sent to the end-user computer. Ex. 1038, 5:61-6:5, FIG. 3. As a result, the end-user computer may automatically pass the information to the remote web site. *Id*. Minor describes that "[t]his automatic passing of information from a first server (32A) to an end-user computer (30), and then redirected to a second server (34A) is sometimes referred to as a 'redirect'." Ex. 1038, 5:61-6:5.

E. U.S. PATENT APP. PUB. NO. 2002/0026351 ("COLEMAN")

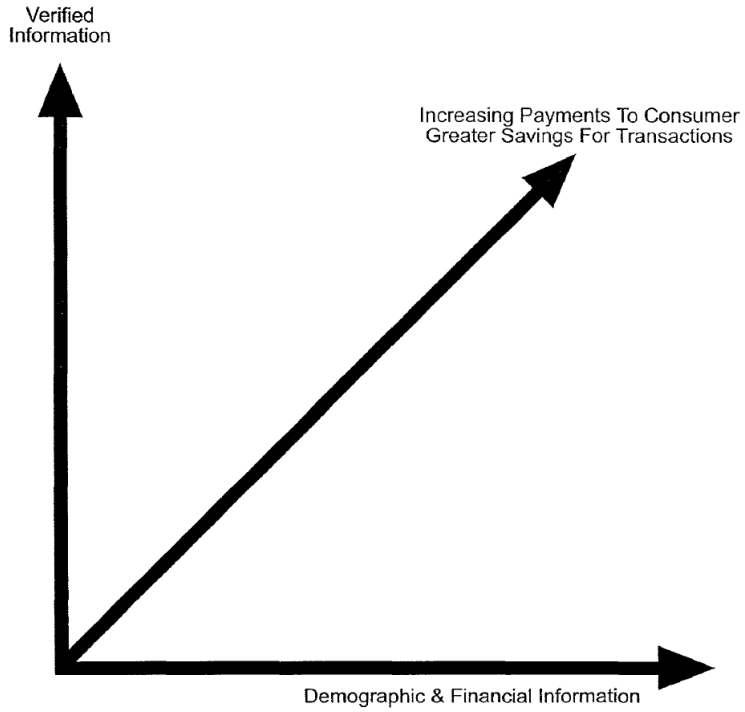
161. Coleman (Ex. 1039) is a published U.S. patent application filed on June 30, 1999 and published on February 28, 2002. I understand that Coleman qualifies as prior art under pre-AIA 35 U.S.C. § 102(e) because of its earlier filing date. Coleman relates to delivery of targeted commercial messages based on potential

purchaser profiles. Ex. 1039, Abstract, ¶ [0011]. Therefore, it is my opinion that Coleman is analogous to the '249 patent.

162. Coleman discloses a system where potential purchasers ("any person who wishes to sign up for a deal or register with the party operating [an] electronic file 11 or [a] Web site") provide information to register with the system. Ex. 1039, ¶¶ [0054]-[0055]. A profile containing user information gathered from a potential purchaser is formed in the electronic file. Ex. 1039, ¶¶ [0055]-[0057], FIGS. 3, 4. Coleman's profile information may be provided to advertisers for use in tailoring advertisements to the users. Ex. 1039, ¶¶ [0062]-[0063], [0082].

163. Coleman discloses that profile information may vary in value. Ex. 1039, ¶ [0049], FIG. 2. For example, Coleman describes that sellers may ascribe greater value to information based on its "quality or verifiability." *Id*.

Fig. 2



Ex. 1039, FIG. 2

164. Coleman describes that the profile may be updated, after information has been verified, "to reflect information from which verification with secondary sources was successful and information from which verification from secondary sources was not successful." Ex. 1039, ¶ [0074]. Coleman further discloses that, based on the value to the seller (e.g., advertiser), the seller may offer certain deals to groups of potential purchasers based on predictions of the number of potential purchasers that will buy an advertised good or service. Ex. 1039, ¶ [0049]. Coleman

also expressly states that the value of the information "increases if it is verified and/or updated information." Ex. 1039, ¶ [0073].

F. U.S. PATENT APP. PUB. NO. 2013/0097664 ("HERZ")

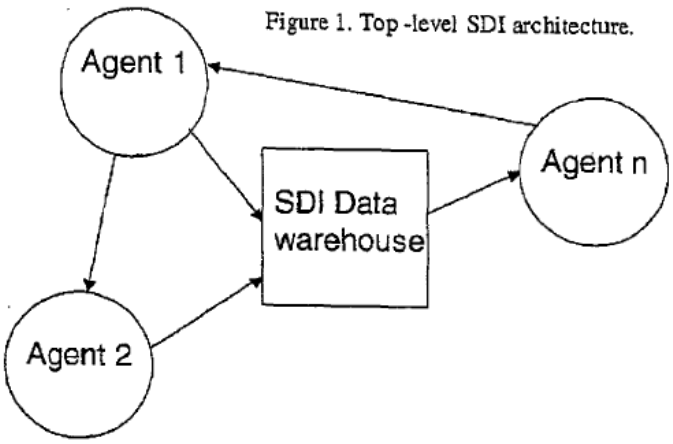
165. Herz (Ex. 1040) is a published U.S. patent application filed on December 3, 2012 and published on April 18, 2013. Herz claims priority to U.S. Provisional Application No. 60/161,640 (Ex. 1041; "Herz Provisional"), filed on October 27, 1999, and is entitled to this priority date as I explain below. In view of this priority date, I understand that Herz qualifies as prior art under pre-AIA 35 U.S.C. § 102(e). I note that Herz incorporates by reference the Herz Provisional. Ex. 1040, ¶ [0001]. For this reason, I have relied on and cited to portions of the Herz Provisional in the first instance. Herz relates to a security data interchange system that allows exchange of user profile information (e.g., for use in targeted advertising) and control of access to the user profile information according to price rules. Ex. 1041, pp. 3-12; Ex. 1040, Abstract, ¶¶ [0003]-[0019], [0025]-[0026].[6] Therefore, it is my opinion that Herz is analogous to the '249 patent.

1. Overview

166. Herz is directed to "systems that provide personalized information, profiling, automated matchmaking and information exchange" including a central

[6] Cited page numbers for Ex. 1041 refer to the native page numbers of the provisional application.

data warehouse that maintains user data submitted by different parties thereby enabling the user data to be used for targeted advertising. Ex. 1041, pp. 1-12; Ex. 1040, ¶¶ [0003], [0013]-[0017], [0025]-[0026]. The central data warehouse receives user information from agent computers associated with consumers and/or online businesses of a company/vendor. Ex. 1041, FIG. 1, pp. 3-13; Ex. 1040, FIG. 1, ¶¶ [0045], [0055].



Ex. 1040, FIG. 1

167. The central data warehouse stores the user data in user profiles that may be shared with other users and/or vendors (e.g., advertisers) at a user's discretion. Ex. 1041, pp. 3-12, 38-43, 111-125; Ex. 1040, ¶¶ [0013]-[0017], [0025]-[0032], [0055]-[0056], [0377]-[0379]. By receiving shared profile information from Herz's system, vendors are able to personalize content (e.g., advertisements) to particular users. *Id*. Herz's system utilizes individual pseudonyms that give a user control over who they share their information with while also serving as an identifier to track a

user's online activity to update a user profile. Ex. 1041, pp. 3-14, 25-37, 38-43; Ex. 1040, ¶¶ [0026]-[0027], [0047]-[0052], [0061]. Herz's system also provides economic incentives for users to provide profile information to the central data warehouse in the form of rewards (e.g., financial rewards) for user profile data that is of interest to and used by advertisers. Ex. 1041, pp. 1-4, 10, 39-49, 53, 71-73, 96-98, 112-115, 124-131; Ex. 1040, ¶¶ [0040], [0043]-[0044].

2. Priority to Herz Provisional Filing Date

168. I understand that for Herz to be entitled to the benefit of the filing date of the Herz Provisional, the Herz Provisional must provide supporting written description for each element of at least one claim of Herz. As has been explained to me, this supporting description must be "in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same." 35 U.S.C. § 112. As I explain in the below element-by-element analysis for Herz claim 1 ("HC1"), it is my opinion that a POSITA would have found the Herz Provisional satisfies this standard as it pertains to at least claim 1.

a) HC1[A]: A method of providing access to user profile information, the method comprising:

169. The Herz Provisional describes HC1[A] for at least the reasons provided below for HC1[B]-[F]. Additionally, at least the following parts of the Herz Provisional describe that a profile is stored and made available:

"The main data structure within SDI is the profile. A profile is a record of pertinent information about a user, for example demographic information, information about web pages browsed, content information from web pages browsed, recent on-line transactions, etc." Ex. 1041, p. 8.

"Vendors interact with the system of Secure Data Interchange through servers, that are general purpose computers with memory and a connection to a network of other computers (clients and servers), for example via the Internet." Ex. 1041, p. 8.

"The other main SDI module is a central SDI server, that maintains detailed records of profiles for every user's pseudonym." Ex. 1041, p. 8.

"Figure 1 shows the top-level architecture. . . . Profiles may be located on client-machines, with users; at intermediate level SDI servers, for example at ISP servers; at vendor-level SDI servers; and also in a central SDI server. Users define privacy policies on their client machine, and the client machine ensures that all user-vendor interactions are consistent with a user's policy, and that they cannot be abused- even by a malicious vendor. Client-level proxies can monitor users can build profiles (for example, as users browse and

interact with vendors), and vendor-level proxies can monitor users that interact with the same pseudonym in multiple sessions. Both client-level proxies and vendor-level proxies can provide profiles to the central SDI server, with associated conditions of use. The central SDI server can aggregate and validate new profiling information that is received. Client-level and vendor-level proxies can periodically request profile updates." Ex. 1041, pp. 7-8.

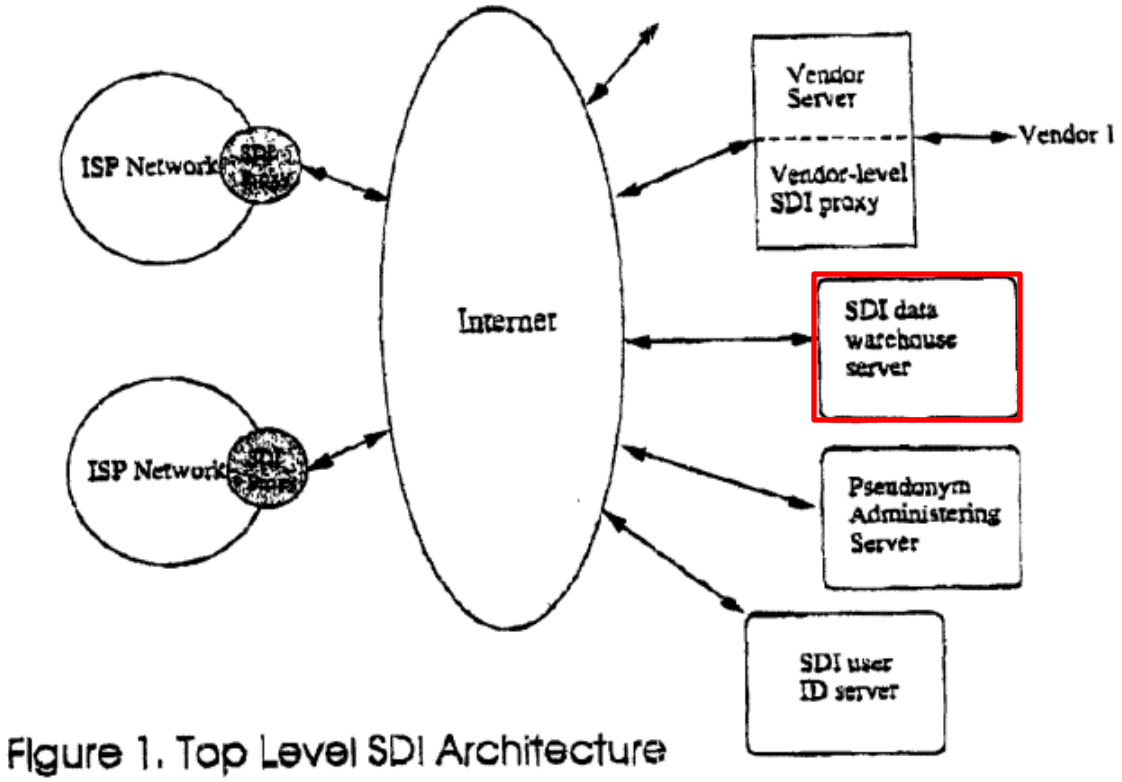


Figure 1. Top Level SDI Architecture

Ex. 1041, Fig. 1 (annotated)

"Personal information collected through transactions across multiple vendors by the same user, under different pseudonyms is protected from transfer between vendors. Even when vendors themselves maintain local records of the transactions that they have performed with users, and response to queries that they have sent to users, there is no way of providing information in a form that another vendor can combine with its own information and use to personalize its service to the same user. This is because no two pseudonyms can be linked except at the (trusted) client machine. In addition, 'randomized aggregates' are used when providing information to a vendor that might allow two vendors to link their pseudonyms. For example, the zip code, age, hair color, and profession of a user might all be useful information for a vendor-but providing all that information accurately to more than one vendor could allow the identity of a user to be compromised and vendors to exchange information." Ex. 1041, p. 9.

"Pseudonymous profiles are still useful in the aggregate, as part of a collaborative filtering system, even when noise has been added to some fields. The system of SDI has a centralized database of profiles and pseudonyms, that can be used for data mining and other collaborative filtering techniques." Ex. 1041, p. 9.

"A vendor that belongs to SDI can use the profile associated with a user's pseudonym to provide a personalized interaction with the user. In one version the profile is released to a vendor, and the vendor can push personalized information to the user." Ex. 1041, p. 9.

170. For at least these reasons, it is my opinion that the Herz Provisional teaches HC1[A].

b) HC1[B]: storing in memory a profile for a user, the profile comprising personal information regarding the user;

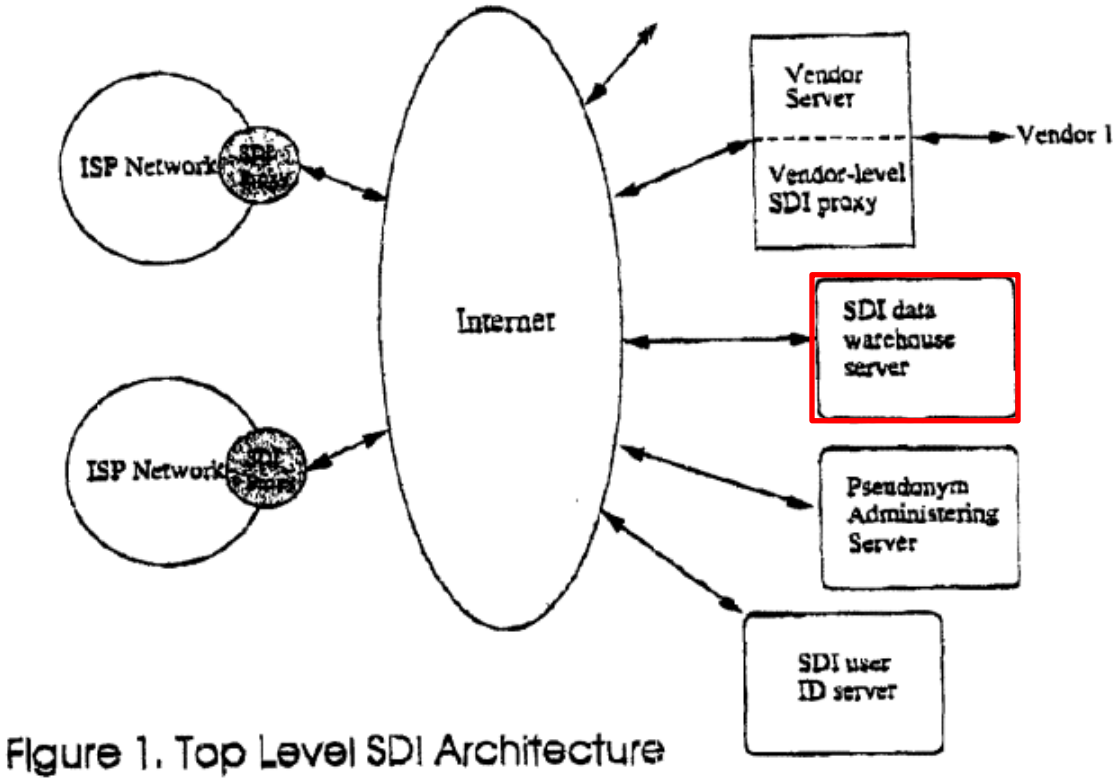
171. The Herz Provisional describes HC1[B]. For example, at least the following parts of the Herz Provisional describe that a profile is associated with a user and includes personal information:

"The main data structure within SDI is the profile. A profile is a record of pertinent information about a user, for example demographic information, information about web pages browsed, content information from web pages browsed, recent on-line transactions, etc." Ex. 1041, p. 8.

172. Additionally, at least the following parts of the Herz Provisional describe that a profile is stored in memory of an SDI system which includes a database (also referred to as a "data warehouse"):

"Profiles may be located . . . in a central SDI server." Ex. 1041, p. 8.

"Also shown in Figure 1 is the central SDI server, 'SDI data warehouse server'. The central SDI server maintains extended profile information for each user." Ex. 1041, p. 39.



Ex. 1041, Fig. 1 (annotated)

"[S]ervers . . . are general purpose computers with memory." Ex. 1041, p. 8.

"The system of SDI has a centralized database of profiles and pseudonyms, that can be used for data mining and other collaborative filtering techniques." Ex. 1041, p. 9.

173. It is my opinion that a POSITA would understand from the Herz Provisional that a profile of a user stored in the central SDI server would be stored in memory. Accordingly, for at least these reasons, it is my opinion that the Herz Provisional describes HC1[B].

c) HC1[C]: establishing a policy for access to the user's personal information, the policy comprising an access rule that provides users with different levels of access to the user's personal information for different users, wherein the access rule is controlled by the owner of the personal information;

174. The Herz Provisional describes HC1[C]. For example, at least the following parts of the Herz Provisional describe that a user controls access to profile information via the use of pseudonyms during transaction with other parties (e.g., vendors):

"The Secure Data Interchange system enables information about bilateral and multilateral interactions between multiple persistent parties to be exchanged and leveraged within an environment that uses a combination of techniques to

control access to information, release of information, and matching of information back to parties. The system addresses the fundamental conflict that exists between rights of privacy and efficiency gains from better bilateral exchange of profile/preference information." Ex. 1041, pp. 3-4.

"Part of our solution is to allow autonomous parties to control and maintain detailed profile information locally, and carefully control the release of that information. When two parties interact they can do so under anonymous identities, persistent pseudonymous identities, or true identities. When combined with a technique to randomize information that could be used to identify an individual, this is a fundamental methodology for preventing exchange of personal information between third parties." Ex. 1041, p. 4.

"Within SDI we associate profiles with an OWNER, and sign them with a ALLOWED-USE key to indicate what the owner has restricted the use of profile information to. The main technique used to support privacy within SDI is a pseudonym, that can fully represent a user in all transactions without providing any information about a user's true identity." Ex. 1041, p. 8.

"The function of the central SDI server is to make as much use of profile information that is collected (and authorized) by a user for a particular pseudonym, by analysis of the profile information." Ex. 1041, p. 9.

"A key mechanism used within Secure Data Interchange is that of pseudonymous interactions. This allows users to maintain long-term relationships with vendors, and release personal information to vendors, without any other party being able to use the information-is a system of 'pseudonyms'. Essentially, pseudonyms allow a user to separate its real-life identity from its identity with another user, or a vendor. The client-level proxy is also careful not to provide a vendor with any information that would compromise a user's identity. Pseudonyms provide a very useful middle-ground between total anonymity and complete disclosure. Vendors can still keep useful records of their transactions with a single user, because the system maintains a persistent pseudonym for each user with the same vendor. Users can however choose to interact with each vendor in the system under a different pseudonym, to protect their identity and prevent information transfer across vendors. The control of pseudonyms provides users with a method to control the exchange of profile information between vendors. A pseudonym allows a user to maintain a number of persistent relationships with different

vendors or groups of vendors, with complete assurance that the vendors cannot use the pseudonyms themselves to build a profile of the user from the user's sessions across different vendors. A pseudonym provides: Identification, Authentication, Encryption, and Contact information. Pseudonyms are triples: (Pseudonym ID, Private Key, Pseudonym e-mail address). Personal information collected through transactions across multiple vendors by the same user, under different pseudonyms is protected from transfer between vendors. Even when vendors themselves maintain local records of the transactions that they have performed with users, and response to queries that they have sent to users, there is no way of providing information in a form that another vendor can combine with its own information and use to personalize its service to the same user. This is because no two pseudonyms can be linked except at the (trusted) client machine. In addition, 'randomized aggregates' are used when providing information to a vendor that might allow two vendors to link their pseudonyms. For example, the zip code, age, hair color, and profession of a user might all be useful information for a vendor-but providing all that information accurately to more than one vendor could allow the identity of a user to be compromised and vendors to exchange information." Ex. 1041, p. 9.

"Pseudonymous profiles are still useful in the aggregate, as part of a collaborative filtering system, even when noise has been added to some fields. The system of SDI has a centralized database of profiles and pseudonyms, that can be used for data mining and other collaborative filtering techniques. For example, suppose a user has a pseudonym that he/she uses to interact with all on-line book stores. Then the centralized database can perform collaborative filtering using the profile associated with that pseudonym and other profiles in the database to make personalized recommendations, for example on behalf a vendor that pays to receive such a service." Ex. 1041, p. 9.

"Furthermore, even when a user designates that a group of vendors can exchange information on the basis of user-vendor transactions, one variation provides each vendor with a unique pseudonym. The only way that vendors can take advantage of profile information from user interactions with other vendors is via the central SDI database, that has a link between the pseudonyms that a user has with each vendor." Ex. 1041, p. 10.

"A vendor might request aggregate information about users for which it already has data. This is possible when users have the same pseudonym with multiple vendors." Ex. 1041, p. 24.

"The methodology that we promote within the basic SDI architecture, where users themselves maintain control over their profiles also provides users with ownership of that information, and enables users to maintain ownership while providing per-impression access to vendors, who receive the results of using the profile to personalize an interaction but not the profile itself." Ex. 1041, p. 68.

175. Additionally, at least the following parts of the Herz Provisional describe that a user controls access to profile information to different classes of vendors (e.g., other users) by establishing a pseudonym management policy:

"3.3 Selecting Privacy and Profile Management Policies

The next stage in registering a new user with SDI is to establish privacy and profile management policies. We describe a 'pseudonym management policy', and a 'profile management policy'. A user can define how he/she wishes to interact with various classes of vendors (depending on the nature of the business that the vendor is engaged in), the kinds of uses to which the transactional information that a vendor collects can be put to, and the amount of information that a vendor is authorized to release. The user can also specify a 'basic profile' that the user is willing to release to any vendor, irrespective

of the vendor's policies. The profile-management policy is further broken down into the 'data-release' policy and the 'use-of-data' policy. The client-level proxy manages a user's interactions with vendors, to keep them within desired policies." Ex. 1041, p. 27.

"3.31 Pseudonym Management Policies

Pseudonym management, coupled with the ability to add noise to information provided, allows users to exercise complete control over the ability of vendors to collect and exchange information about them. The client-level proxy contains a rule-based interface that allows the user to define a pseudonym-management policy.

Abstract Policy Hierarchy:

Level 0 (Highest)

At the highest level of privacy a user chooses to interact anonymously with every vendor, so that vendors cannot even personalize its service to a user over an extended interaction, because the vendor will never know who the user is. An anonymous pseudonym is simply a one-time traditional pseudonym, where a PAS does not need to check that a user does not already have a pseudonym for a vendor.

Level 1

A user can choose to interact with every on-line server under a unique pseudonym. This completely prevents a vendor from knowing anything more about the user than the information that can be inferred from the interaction itself. So long as that information does not identify the user, a vendor cannot access any information from external databases (such as demographic information), and a vendor cannot access any information collected by other vendors about the user. The vendor can still personalize information that is displayed to the user, but only on the basis of its own historical information for that user.

Level 2

At level 2 a user can choose to share pseudonyms for groups of vendors (for example a user might choose the same identity for all vendors that sell music and books), and receive personalized service from each vendor on the basis of her extended profile. The system of SDI allows users to maintain 'ownership' of the dossier of information by: (1) providing a different pseudonym to each vendor, but providing the central SDI database with information about which pseudonyms are equivalent; (2) allowing vendors to take advantage of the combined profile when providing information/products to a user by allowing personalization on the client machine but without release of the complete profile for the group of vendors to a vendor.

Level 3

At level 3 the user can interact with every vendor under the same pseudonym, or anonymously with some vendors until enough trust has been established.

Level 4

At the lowest level of privacy protection (none) the user can simply use a unique ID that is linked to his/her true identity to interact with every vendor. At this level the user has no control over the dossiers of information that can be collected by groups of cooperating vendors. Figure 6 illustrates level 2 - which is the preferred mode of interaction. The client-level SDI proxy for a user submits a request for information to a vendor server, including the pseudonym of the user. The vendor's server can perform some personalization at the server level, based on data that it has accumulated from previous interactions with the user's pseudonym, and also push generic information and rules for processing the information to the client machine, where information is processed according to a user's extended profile for the group of vendors to which the vendor belongs. The rules could be implemented as Java code or Javascript, and the generic information pushed as XML documents, for example." Ex. 1041, pp. 27-28.

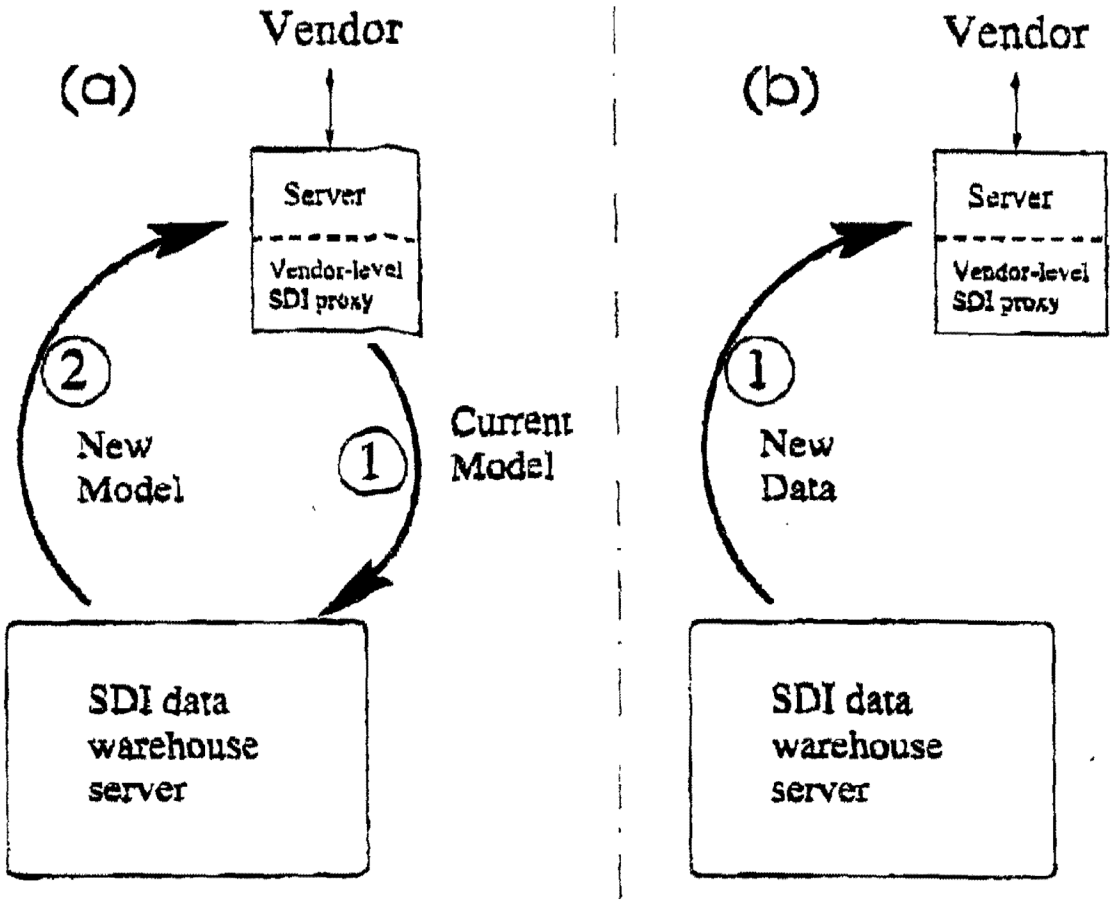


Figure 6. Updating Vendor Profiles: (i) Model-based update; (ii) Data-based update.

Ex. 1041, Fig. 6

"3.32 Implementation Details

The central Secure Data Interchange server categorizes vendors that register with SDI, by assigning labels from a set of classifiers, that indicates the business of the vendor (i.e. the services and products that a vendor provides). The set of classifiers might include: music goods, news media, vacation

packages, groceries, clothes. We denote the classifiers abstractly as Ll, L2, ., LN. There is also a label for vendors that are not currently registered with SDI, denoted L0. Given the labels, each vendor has an associated set of labels, denoted L(Vj), for example L(V4) = {Ll, L4, Ll2}. The user is able to configure an appropriate pseudonym-management policy at the first-level proxy level that runs on his/her host machine. The user assigns a pseudonym-management action to different vendor-classes. The set of actions that SDI provides can include, but are not limited to:

A. Anonymous interaction with vendors in this class (i.e. use a different pseudonym every time the user enters the Vendors' sites.)

B. One pseudonym per vendor in this class, but the same pseudonym for all visits to the same vendor.

C. One pseudonym for all vendors in this class, and the same pseudonym at all times.

Pseudonym-management action A provides stronger data-privacy than action B, than action C, but action C provides the most opportunity to vendors to exchange information on the user and provide personalized and informed service to the user. This is a basic tradeoff that the user must make - between privacy and personalization. A policy maps a vendor to a 'management action', i.e. with Vendor V I will use the same persistent pseudonym for all

interactions, but it will be unique to that vendor. The vendor's are grouped according to their 'business classifier' labels. For example, group 1 might contain all business that sell books or CDs, group 2 all businesses that sell computer hardware, etc. Each vendor group has an associated management action, e.g. vendors in group 1 (books/CDs) can share the same pseudonym for the user-and exchange information as provided by the user and the vendors to the central SDI server. Other groups could be defined by the labels that vendors DO NOT have, e.g. group 3 could be vendors that do not sell credit cards. Clearly, it is possible for a vendor to be categorized into more than one group, within these rules. For example a vendor that sells books and Compact Disks would be placed in the group of vendors that sells books, and a group of vendors that sells CDs. When this occurs the rule-base must choose the most appropriate group, for example on the basis of profiling a group of vendors according to the profiles of their user-base. Alternatively, it is possible to 'partition' an individual business into different core businesses that fit cleanly into a single group, and then ensure that a user's interactions respect the current group that the vendor is a representative of. The user can choose a mapping from labels to groups that best fits his/her own privacy needs, and then continue by assigning pseudonym management actions to each group. For example, the user might decide that all vendors that sell flights, books,

and music should be assigned the same pseudonym for all transactions (i.e. pseudonym action C), while all vendors that sell financing, loans, and credit cards should be assigned to the same pseudonym for all transactions (i.e. pseudonym action C), but to a different pseudonym than the first class of vendors. Similarly, a user might require a single pseudonym for each vendor that is not classified by SDI (pseudonym action B), and anonymous pseudonyms for vendors that are classified as suppliers of adult material. We allow vendors to provide different service levels, depending on the pseudonym action that a user chooses. For example, a vendor might desire to provide a better level of service to a user that interacts with a persistent pseudonym than a user that interacts with an anonymous pseudonym. The first-level proxy sends a token that certifies the type of pseudonym-action policy that a user has chosen when a user connects to a vendor's site. This is explained in more detail in Section below." Ex. 1041, pp. 28-29.

"The vendor can use profile information about a user (for a particular pseudonym) to present appropriate services, products, and prices, including custom priced items and promotional offers (as suggested in the co-pending application entitled 'System for Customized Prices and Promotions')." Ex. 1041, p. 34.

"SDI enables a user to allow limited and secure data sharing between vendor types of its choice." Ex. 1041, p. 34.

"The vendor provides this certificate to the central SDI server, and requests profile information about the user with pseudonym P that is stored within the central SDI server, and is authorized by the user to be released. If the vendor is authorized to receive dynamic profiling information, such as the recent web footprints of the user, and the material that the user has been reading, and the physical location of the user, then this information is released to a vendor when the user connects to a new site, according to the dynamic profile policy of the user." Ex. 1041, p. 36.

"There is a hierarchy of personalization that is available to each vendor in the system. As a base level, a vendor can request that SDI performs data analysis on its current user base, and with only transaction information collected at its own site. The next level performs analysis on the vendor's user base, but also drawing on profile information from across multiple vendors' sites. The next level allows vendors to personalize service to incoming users on the basis of an analysis of the profiles of the new users. Finally, SDI may provide a list of

pseudonyms and recommendations, so that the vendor can target new users." Ex. 1041, p. 41.

176. Based on at least the above, it is my opinion that the Herz Provisional describes that a user may restrict access to certain profile information of the user based on the use of various pseudonyms for different classes of vendors – such that, for example, a first vendor (e.g., a first different user) of a first class of vendor may access relatively more profile information for the user based on the user using the same pseudonym across vendors of the first class of vendors, while a second vendor (e.g., a second different user) of a second class of vendors may access relatively less profile information for the user based on the user using different pseudonyms across vendors of the second class of vendors. Accordingly, for at least these reasons, it is my opinion that the Herz Provisional describes HC1[C].

d) HC1[D]: providing online access to the user's personal information by the users in accordance with the policy;

177. The Herz Provisional describes HC1[D] for at least the reasons provided above for HC1[A]-[C]. Additionally, at least the following parts of the Herz Provisional describe HC1[D]:

"Vendors interact with the system of Secure Data Interchange through servers, that are general purpose computers with memory and a connection to a

network of other computers (clients and servers), for example via the Internet." Ex. 1041, p. 8.

"The other main SDI module is a central SDI server, that maintains detailed records of profiles for every user's pseudonym." Ex. 1041, p. 8.

"Personal information collected through transactions across multiple vendors by the same user, under different pseudonyms is protected from transfer between vendors. Even when vendors themselves maintain local records of the transactions that they have performed with users, and response to queries that they have sent to users, there is no way of providing information in a form that another vendor can combine with its own information and use to personalize its service to the same user. This is because no two pseudonyms can be linked except at the (trusted) client machine. In addition, 'randomized aggregates' are used when providing information to a vendor that might allow two vendors to link their pseudonyms. For example, the zip code, age, hair color, and profession of a user might all be useful information for a vendor-but providing all that information accurately to more than one vendor could allow the identity of a user to be compromised and vendors to exchange information." Ex. 1041, p. 9.

"Pseudonymous profiles are still useful in the aggregate, as part of a collaborative filtering system, even when noise has been added to some fields. The system of SDI has a centralized database of profiles and pseudonyms, that can be used for data mining and other collaborative filtering techniques." Ex. 1041, p. 9.

"A vendor that belongs to SDI can use the profile associated with a user's pseudonym to provide a personalized interaction with the user. In one version the profile is released to a vendor, and the vendor can push personalized information to the user." Ex. 1041, p. 9.

"Furthermore, even when a user designates that a group of vendors can exchange information on the basis of user-vendor transactions, one variation provides each vendor with a unique pseudonym. The only way that vendors can take advantage of profile information from user interactions with other vendors is via the central SDI database, that has a link between the pseudonyms that a user has with each vendor." Ex. 1041, p. 10.

"The methodology that we promote within the basic SDI architecture, where users themselves maintain control over their profiles also provides users with ownership of that information, and enables users to maintain ownership while providing per-impression access to vendors, who receive the results of using the profile to personalize an interaction but not the profile itself." Ex. 1041, p. 68.

"The profile may also have a credential which is issued by a secure function within the client-level proxy indicating that the user has been willing to disclose all relevant personal information relevant to the vendor (e.g. in exchange for a reward). The user has the right/ability to limit the specific profile information which is accessible on a specific vendor or vendor type basis." Ex. 1041, p. 112.

178. Based on at least the above, it is my opinion that the Herz Provisional describes that a vendor's (e.g., a different user's) online access to a user's profile stored on the central SDI server is determined by the user's policy of allowed information sharing between particular classes of vendors. Accordingly, for at least these reasons, it is my opinion that the Herz Provisional teaches HC1[D].

e) HC1[E]: establishing a price rule for access to one or more user profiles by one or more agents; and

179. The Herz Provisional describes HC1[E]. For example, at least the following parts of the Herz Provisional describe pricing access to profile information:

> "The system of Secure Data Interchange is a technical solution to the problem presented by the conflicting goals of providing personalized information/products/solicitations to users (beneficial to users and vendors) and the rights/desires of individuals to privacy in transactions. In particular, a user might desire to control the vendors that have a lot of information about its preferences, and prevent certain vendors/entities from gaining information about particular transactions. A user might also like to be able to 'keep control' of information that is potentially valuable to vendors and advertisers, and allow only restricted access to that information-and extract a payment for such access." Ex. 1041, p. 7.

> "Finally, within SDI there is a method to allow users to receive compensation, in the form of rebates and electronic cash, in return from revealing personal information to vendors (even information that is slightly randomized and cannot be shared with other vendors)." Ex. 1041, p. 10.

"SDI can also retain control over information on users by placing cryptographically enforced 'expiration dates' on the ability of vendors to analyze profiles that are delivered with requests from users. This allows sophisticated pricing models (see later section on pricing models)." Ex. 1041, p. 41.

"11. Models of Data Release

Data can be released with associated 'terms of disclosure', that define: (a) the price or 'exchange rate' of data; and (b) the time and usage parameters of access to the data." Ex. 1041, p. 68.

"Data can be priced according to its accuracy and content. For example, aggregate data might be sold more cheaply than detailed data, and we can sell the right to access data dynamically (on demand), on a per-impression basis, or up-front. Some vendors might wish to purchase the rights to utilize the data. The vendor might also be interested in renting data (for example, when the value of data is uncertain), and purchasing the data outright if it proves valuable." Ex. 1041, p. 68.

"Ideally we would like to sell data to a vendor at the value of that data to the vendor. This should be done in a way that prevents the vendor from selling the data on to another vendor on the black market. One solution to this problem is to 'rent' the data to a vendor, but not give a purchasing vendor outright control of the data. The secure data interchange can be used to provide access to the data." Ex. 1041, p. 68.

"System Overview

Buyers interact with vendors through an iamworthit-enabled client computer. The client computer allows buyers to interact pseudonymously with vendors, accept focused advertisements in return for financial rewards, and exchange profile information in return for customization and financial rewards." Ex. 1041, p. 112.

180. For at least these reasons, it is my opinion that the Herz Provisional describes HC1[E].

f) HC1[F]: providing access to information in the one or more user profiles based on the price rule.

181. The Herz Provisional describes HC1[F] for at least the reasons provided above for HC1[E]. Additionally, at least the following parts of the Herz Provisional describe providing access to information in user profiles based on the price rule:

"The system of Secure Data Interchange is a technical solution to the problem presented by the conflicting goals of providing personalized information/products/solicitations to users (beneficial to users and vendors) and the rights/desires of individuals to privacy in transactions. In particular, a user might desire to control the vendors that have a lot of information about its preferences, and prevent certain vendors/entities from gaining information about particular transactions. A user might also like to be able to 'keep control' of information that is potentially valuable to vendors and advertisers, and allow only restricted access to that information-and extract a payment for such access." Ex. 1041, p. 7.

"The function of the central SDI server is to make as much use of profile information that is collected (and authorized) by a user for a particular pseudonym, by analysis of the profile information." Ex. 1041, p. 9.

"Pseudonymous profiles are still useful in the aggregate, as part of a collaborative filtering system, even when noise has been added to some fields. The system of SDI has a centralized database of profiles and pseudonyms, that can be used for data mining and other collaborative filtering techniques. For example, suppose a user has a pseudonym that he/she uses to interact with all

on-line book stores. Then the centralized database can perform collaborative filtering using the profile associated with that pseudonym and other profiles in the database to make personalized recommendations, for example on behalf a vendor that pays to receive such a service." Ex. 1041, p. 9.

"Finally, within SDI there is a method to allow users to receive compensation, in the form of rebates and electronic cash, in return from revealing personal information to vendors (even information that is slightly randomized and cannot be shared with other vendors)." Ex. 1041, p. 10.

"SDI can also retain control over information on users by placing cryptographically enforced 'expiration dates' on the ability of vendors to analyze profiles that are delivered with requests from users. This allows sophisticated pricing models (see later section on pricing models)." Ex. 1041, p. 41.

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Data can be released with associated 'terms of disclosure', that define: (a) the price or 'exchange rate' of data; and (b) the time and usage parameters of access to the data." Ex. 1041, p. 68.

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"The methodology that we promote within the basic SDI architecture, where users themselves maintain control over their profiles also provides users with ownership of that information, and enables users to maintain ownership while providing per-impression access to vendors." Ex. 1041, p. 68.

"Ideally we would like to sell data to a vendor at the value of that data to the vendor. This should be done in a way that prevents the vendor from selling the data on to another vendor on the black market. One solution to this problem is to 'rent' the data to a vendor, but not give a purchasing vendor outright control of the data. The secure data interchange can be used to provide access to the data." Ex. 1041, p. 68.

"System Overview

Buyers interact with vendors through an iamworthit-enabled client computer. The client computer allows buyers to interact pseudonymously with vendors, accept focused advertisements in return for financial rewards, and exchange profile information in return for customization and financial rewards." Ex. 1041, p. 112.

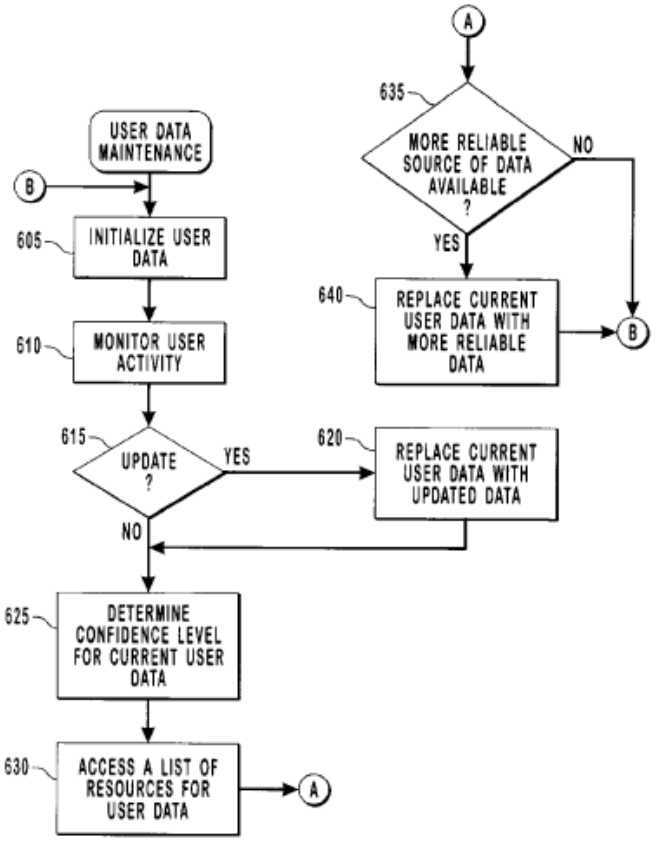
182. For at least these reasons, it is my opinion that the Herz Provisional describes HC1[F].

G. U.S. PATENT NO. 6,141,694 ("GARDNER")

183. Gardner (Ex. 1043) is a U.S. patent filed on September 16, 1997 and issued on October 31, 2000. I understand that Gardner qualifies as prior art under pre-AIA 35 U.S.C. § 102(e) because of its earlier filing date. Gardner "relates to the use of online resources to determine facts about a user and the verification of user data with reference to the user's online activities." Ex. 1043, 1:7-10. Therefore, it is my opinion that Gardner is analogous to the '249 patent.

184. Gardner maintains user information in a set of information fields (e.g., a user profile) where each information field indicates "a level of certainty regarding the accuracy of the information" contained in the field. Ex. 1043, 1:7-10, 1:50-57,

7:2-8, 7:37-60, 8:17-30. Gardner's system determines whether to update the set of information fields with newly received user data and performs the updates as appropriate. Ex. 1043, 7:36-8:16, FIG. 6.



Ex. 1043, FIG. 6

185. Gardner also teaches maintaining reliability ratings for the user data. Ex. 1043, 1:50-57, 7:36-8:16, FIG. 6. Based on these reliability ratings, Gardner determines if a more reliable source exists and replaces current user data with more reliable data as appropriate. Ex. 1043, Abstract, 7:48-60, 8:31-46, FIG. 6.

X. THE RELEVANT ART AND LEVEL OF ORDINARY SKILL IN THE RELEVANT ART

186. In my opinion, the relevant field of art for the ’249 patent is a mercantile method using profile information, e.g., for targeted advertising, in a data communications topology. Ex. 1001, Abstract, 1:31-35, 3:29-32, 4:66-5:3.

187. I understand that obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art (POSITA) at the time of the alleged invention, which for purposes of this declaration I have assumed is the earliest claimed priority date of December 13, 1999. I have no opinion on whether the ’249 patent is entitled to this foreign priority date. Even if the ’249 patent was only entitled to a later filing date (e.g., June 14, 2000 – the earliest claimed priority date to a U.S. application), my opinions herein would not change.

188. I understand that the following four factors may be considered when identifying the appropriate level of a POSITA: (i) the types of problems encountered by those working in the field and prior art solutions thereto; (ii) the sophistication of the technology in question, and the rapidity with which innovations occur in the field; (iii) the educational level of active workers in the field; and (iv) the educational level of the inventor. I understand that a POSITA is one who is presumed to be aware of all pertinent art, thinks along conventional wisdom in the art, and is a person of ordinary creativity.

189. It is my opinion that, for the ’249 patent, a POSITA would have had a bachelor’s degree in computer engineering, computer science, or a similar discipline, and two years of relevant industry or research experience, including experience with data communications over the Internet (including Internet advertising) and database management. This is my general view, but a person might also be a POSITA with more education and less industry experience, or vice versa.

190. Based on my experiences and educational background, I would have at least met this definition of a POSITA. Moreover, I worked in the relevant field with persons meeting this definition of a POSITA at, and leading up to, the time of the alleged invention of the ’249 patent (*i.e.*, December 13, 1999). Therefore, I am familiar with the knowledge and skills that such persons had at the time. In my opinion, a POSITA’s skill set would have included client level and server level programming skills. More specifically, a POSITA’s skill set would have included computer programming, documents or pages with embedded hyperlinks (*e.g.*, HyperText Mark-up Language (HTML)) and knowledge of the HyperText Transfer Protocol (HTTP). A POSITA’s skill set would have also included Internet server architecture design skills and database design skills.

191. In this Declaration, wherever I refer to a POSITA, it should be understood that I’m referring to a hypothetical person at the time of the alleged

invention of the ’249 patent (*i.e.*, December 13, 1999) meeting the description I have provided in this section.

XI. CLAIM CONSTRUCTION

192. I understand that my analysis requires an understanding of the scope of the claims of the ’249 patent. I understand that claim terms subject to *inter partes* review, absent some other definition provided in the patent, are given their plain and ordinary meaning to a POSITA in light of the patent specification. I understand that Petitioner’s position is that plain and ordinary meaning should apply to all terms for purposes of this proceeding, except that Petitioner proposes to apply AlmondNet’s construction for “unaffiliated third part[y/ies],” which is “part[y/ies] not having common ownership with the party or parties that control said programmed computer system.” Ex. 1011, 30-36, 69. I note that this construction does not preclude the unaffiliated parties from having some relationship (e.g., a contractual relationship) with the programmed computer system, nor does the construction preclude some of the unaffiliated parties from being affiliated with each other. Therefore, in my analysis below, I have adopted this construction and assumed that all other claim terms are given their plain and ordinary meaning as would have been understood by a POSITA reading the patent specification at the time of the claimed invention (*i.e.*, December 13, 1999). In addition, my analysis also addresses potential constructions for the following terms in view of the related proceedings and prior claim

constructions, to the extent those constructions might deviate from the plain and ordinary meaning.

A. "third-party advertisements"

193. This term appears in claims 1, 2, 11, 12, 21, and 22, but claims 2, 12, and 22 have been disclaimed.

194. In addition to applying the plain and ordinary meaning of this term, my analysis below also addresses a construction of this term as meaning "third party announcements," which was the PTAB's construction of this term in its decision to deny institution of the covered business method patent review for the '249 Patent, as I noted above in Section VII.E. Ex. 1014, 146-150.

B. "unaffiliated third party"/"unaffiliated third parties"

195. This term appears in claims 1, 2, 5, 11, 12, 15, 21, 22, and 25.

196. As I noted above in Section VII.E, I understand that the PTAB decided, in its decision to deny institution of the covered business method patent review for the '249 Patent, that this term did not require any express construction. Ex. 1014, 143-146. Additionally, as I noted above in Section VII.B, I understand that in the claim construction order issued in the 897 W.D. Tex. case and the 898 W.D. Tex. case, the Court found that this term, as it appears in certain claims of the '582 patent, was not indefinite and should be construed as having its plain and ordinary meaning. Ex. 1011, 30-36, 69. I understand, as I noted above, that AlmondNet proposed this

term to mean "a party not having common ownership with the party or parties that control said programmed computer system," and so my analysis below applies this construction of this term, based on the Court's ruling. Ex. 1011, 30-36, 69. Further, as I noted above in Section VII.B, in the 7515 N.D. Cal. case, AlmondNet proposed the same construction for this term. Ex. 1011, 5-6. Lastly, as noted above in Section VII.C, I understand that the Court in the 1035 D. Del. case was "tempted to find that the term is indefinite" but decided to "let discovery play out" and so construed this term, as it appears in certain claims of the '582 patent, to mean "not closely associated or related." Ex. 1012, 120-121 (pp. 95-96 of Transcript). So, my analysis below also addresses this construction of this term.

C. "partial profile"

197. This term appears in claims 1, 2, 3, 4, 6, 11, 12, 13, 14, 16, 21, 22, 23, and 24.

198. My analysis below applies the plain and ordinary meaning of this term. As I noted above in Section VII.B, I understand that in the claim construction order issued in the 897 W.D. Tex. case and the 898 W.D. Tex. case, the Court found that this term, as it appears in certain claims of the '582 patent, should be construed as having its plain and ordinary meaning. Ex. 1011, 37-40, 69. I understand, as I noted above, that AlmondNet proposed that no express construction of this term was necessary and that the plain and ordinary meaning of this term should be applied.

Ex. 1011, 37-40, 69. Further, as I noted above in Section VII.B, in the 7515 N.D. Cal. case, AlmondNet proposed the same plain and ordinary meaning construction for this term. Ex. 1011, 5-6.

D. "available"

199. This term appears in claims 1, 11, and 21.

200. My analysis below applies the plain and ordinary meaning of this term. As I noted above in Section VII.B, I understand that in the claim construction order issued in the 897 W.D. Tex. case and the 898 W.D. Tex. case, the Court found that this term, as it appears in certain claims of the '582 patent, should be construed as having its plain and ordinary meaning. Ex. 1011, 40-43, 69. I understand, as I noted above, that AlmondNet proposed that no express construction of this term was necessary and that the plain and ordinary meaning of this term should be applied. Ex. 1011, 40-43, 69. Further, as I noted above in Section VII.B, in the 7515 N.D. Cal. case, AlmondNet proposed the same construction for this term. Ex. 1011, 5-6. Lastly, as noted above in Section VII.C, I understand that the Court in the 1035 D. Del. case construed this term, as it appears in certain claims of the '582 patent, to mean "electronically available," and so my analysis below also addresses this construction of this term. Ex. 1012, 117 (p. 92 of Transcript).

E. "automatically with the computer system"/"automatically"/"automatic"

201. This term appears in claims 1, 2, 4, 5, 6, 9, 10, 11, 12, 14, 15, 16, 17, 19, 20, 21, 22, 24, and 25.

202. My analysis below applies the plain and ordinary meaning of this term. As I noted above in Section VII.B, I understand that in the claim construction order issued in the 897 W.D. Tex. case and the 898 W.D. Tex. case, the Court found that this term, as it appears in certain claims of the '582 patent, should be construed as having its plain and ordinary meaning. Ex. 1011, 43-45, 70. I understand, as I noted above, that AlmondNet proposed that no express construction of this term was necessary and that the plain and ordinary meaning of this term should be applied. Ex. 1011, 43-45, 70. Further, as I noted above in Section VII.B, in the 7515 N.D. Cal. case, AlmondNet proposed the same construction for this term. Ex. 1011, 5-6. Lastly, as noted above in Section VII.C, I understand that the Court in the 1035 D. Del. case construed this term, as it appears in certain claims of the '582 patent, to mean "done with little to no human control," and so my analysis below also addresses this construction of this term. Ex. 1012, 116-117 (pp. 91-92 of Transcript).

F. "URL redirection"

203. This term appears in claims 1, 10, 11, 20, and 21.

204. My analysis below applies the plain and ordinary meaning of this term. As I noted above in Section VII.B, I understand that in the claim construction order

issued in the 897 W.D. Tex. case and the 898 W.D. Tex. case, the Court found that this term, as it appears in certain claims of the '582 patent, should be construed as having its plain and ordinary meaning. Ex. 1011, 45-49, 71. I understand, as I noted above, that AlmondNet proposed this term to mean "obtaining certain information for at least a portion of an accessed page/site from a different location," and so my analysis below also addresses this construction of this term, based on the Court's ruling. Ex. 1011, 45-49, 71. Further, as I noted above in Section VII.B, in the 7515 N.D. Cal. case, AlmondNet proposed the same construction for this term. Ex. 1011, 5-6. Lastly, as noted above in Section VII.C, I understand that the Court in the 1035 D. Del. case also construed this term, as it appears in certain claims of the '582 patent, to mean "obtaining a requested webpage or a portion of a requested webpage from a different location," and so my analysis below also addresses this construction of this term. Ex. 1012, 117-119 (pp. 92-94 of Transcript).

G. "indicia of instructions"

205. This term appears in claim 21.

206. My analysis below applies the plain and ordinary meaning of this term. As I noted above in Section VII.B, I understand that in the claim construction order issued in the 897 W.D. Tex. case and the 898 W.D. Tex. case, the Court agreed that this term, as it appears in certain claims of the '582 patent, should be construed as having its plain and ordinary meaning. Ex. 1011, 49-54, 71. I understand, as I noted

above, that AlmondNet proposed that no express construction of this term was necessary and that the plain and ordinary meaning of this term should be applied. Ex. 1011, 49-54, 71. Further, as I noted above in Section VII.B, in the 7515 N.D. Cal. case, AlmondNet also proposed that the plain and ordinary meaning should be applied. Ex. 1011, 5-6.

H. "as a result of automatic electronic URL redirection"

207. This term appears in claims 1, 11, and 21. I also note that the similar term "as a result of the URL redirection" appears in claims 10 and 20.

208. In addition to applying the plain and ordinary meaning of this term, my analysis below also addresses a construction of this term as meaning "as a result of automatic electronic URL redirection that does not preclude intervening user action between the time of URL redirection and receipt of the partial profile" in accordance with the PTAB's construction of this term in its decision to grant institution of inter partes review of the '582 patent. Ex. 1019, 112-113 (pp. 6-7 of Institution Decision).

I. "wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer"

209. This term appears in claims 1, 11, and 21.

210. Accordingly, in addition to applying the plain and ordinary meaning of this term, my analysis below also addresses a construction of this term as meaning that "a partial profile is received as a result of a user computer accessing a website

page, thus causing a web server to tell the user computer's browser to obtain certain information for a portion of the accessed page from a different location," which was AlmondNet's proposed construction of this term in the *Oath Holdings* case referred to above in Section VII.A. Ex. 1010, 9 (p. 4 of Exhibit A of Joint Claim Construction Statement), 60 (p. 41 of Yahoo's Brief). I note that this proposed construction by AlmondNet does not preclude user interaction and does not account for the receiving step in limitation [1A] because it does not indicate where the partial profile comes from. As I noted above in Section VII.A, I understand that a claim construction hearing did not occur and that a claim construction ruling on this term was not issued in the *Oath Holdings* case prior to its termination.

J. "which stored profile is believed to be related to the same entity"

211. This term appears in claims 1, 11, and 21.

212. In addition to applying the plain and ordinary meaning of this term, my analysis below also addresses a construction of "believed to be related" as meaning "determined by a computer as matching either (i) at least one identifying attribute or information or (ii) any predetermined combination of profile attributes used as a key," which was AlmondNet's proposed construction of this term in the *Oath Holdings* case referred to above in Section VII.A. Ex. 1010, 9 (p. 4 of Exhibit A of Joint Statement), 65 (p. 46 of Yahoo's brief). As I noted above in Section VII.A, I understand that a claim construction hearing did not occur and that a claim

construction ruling on this term was not issued in the *Oath Holdings* case prior to its termination.

K. "wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network"

213. This term appears in claims 1, 11, and 21.

214. As noted above, my analysis applies the plain and ordinary meaning of this term, and I further note that AlmondNet proposed, in the *Oath Holdings* case referred to above in Section VII.A, that this term should be given its plain and ordinary meaning. Ex. 1010, 10 (p. 5 of Exhibit A of Joint Statement), 69-73 (pp. 50-54 of Yahoo's Brief). As I noted above in Section VII.A, I understand that a claim construction hearing did not occur and that a claim construction ruling on this term was not issued in the *Oath Holdings* case prior to its termination.

XII. ANALYSIS

215. For the reasons that I discuss in detail below, it is my opinion that, at least by December 13, 1999 (the earliest claimed priority date), claims 1, 3-11, 13-21, and 23-25 of the '249 patent would have been obvious to a POSITA. I do not opine on claims 2, 12, and 22 because those have been disclaimed. In short, it is my opinion that:

- Claims 1, 3-6, 10-11, 13-16, 20-21, and 23-25 would have been obvious based on Merriman in view of Jaye;

- Claims 1, 3-6, 10-11, 13-16, 20-21, and 23-25 would have been obvious based on Merriman in view of Minor;
- Claims 7-9 and 17-19 would have been obvious based on (1) Merriman in view of Jaye and Coleman; or (2) Merriman in view of Minor and Coleman;
- Claims 5, 15, and 25 would have been obvious based on (1) Merriman in view of Jaye and Herz; or (2) Merriman in view of Minor and Herz;
- Claims 6, 9, 16, and 19 would have been obvious based on (1) Merriman in view of Jaye and Gardner; or (2) Merriman in view of Minor and Gardner;
-
- Claims 1, 3-6, 10-11, 13-16, 20-21, and 23-25 would have been obvious based on Roth in view of Jaye;
- Claims 1, 3-6, 10-11, 13-16, 20-21, and 23-25 would have been obvious based on Roth in view of Minor;
- Claims 7-9 and 17-19 would have been obvious based on (1) Roth in view of Jaye and Coleman; or (2) Roth in view of Minor and Coleman;
- Claims 5, 15, and 25 would have been obvious based on (1) Roth in view of Jaye and Herz; or (2) Roth in view of Minor and Herz; and
- Claims 6, 9, 16, and 19 would have been obvious based on (1) Roth in view of Jaye and Gardner; or (2) Roth in view of Minor and Gardner.

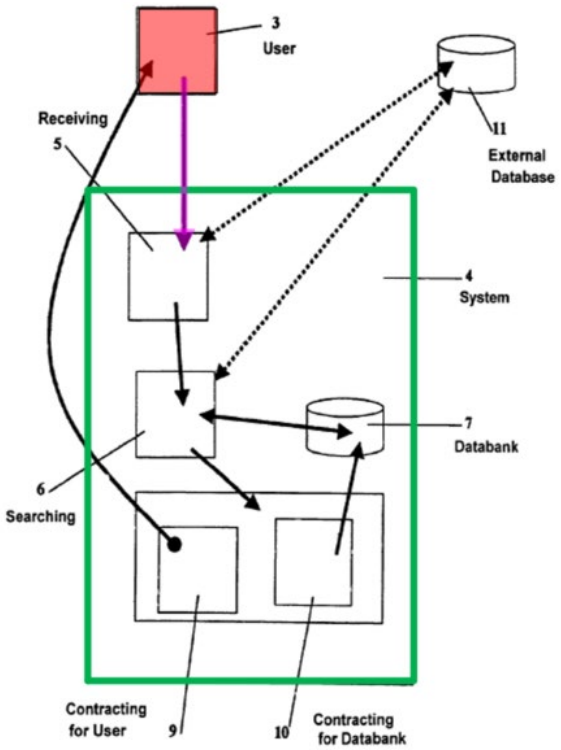
216. Further, I understand that Petitioner has assigned labels (e.g., [1PRE], [1A], [1B], etc.) to different limitations of the claims to facilitate analysis of the claims. Accordingly, in my analysis below, I have referred to the claim limitations using those same labels, which are shown in the Claim Listing Appendix attached to this declaration as Appendix D.

217. Also, before I begin my detailed mapping of the prior art to the claims, I will first address an inconsistency between the claims and the specification. Independent claim 1 recites "(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, a partial profile of an entity" and then further defines this receiving by reciting "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer." However, the specification and drawings do not describe the system receiving a partial profile from a server of an unaffiliated third party as a result of automatic electronic URL redirection.

218. Instead, Figure 2 (below, annotated) merely shows that the system 4 (**green**) receives (see **magenta arrow**) a partial profile of a website visitor from a

user 3 (**red**) (which would be a server of a third party's website).[7] This figure does not show the claimed redirection, and in fact does not even show the visitor's computer that is involved in the claimed redirection. The other figures also do not show the redirection.

[7] I note that the claims and the specification use different language to refer to the same elements. Specifically, the claims recite "entity" and "user computer" to refer to the visitor 2 and visitor's computer, respectively. They also recite "server controlled by one of a plurality of unaffiliated third parties" to refer to the user 3's server (e.g., a website server). Finally, they recite "computer system" to refer to system 4, which is sometimes also referred to as the databank's server or just a server in the specification.



Ex. 1001, FIG. 2 (annotated)

219. In addition, there are only two parts of the specification that mention a redirect, but they also do not describe the combination of limitations [1A] and [1C] of claim 1. The first part describes a website (i.e., the user 3) sending a redirect to a portion of a visitor's webpage so that the visitor's browser then sends a cookie to a server (i.e., a server in the system 4). Ex. 1001, 4:1-7. I note that this cookie is placed on the visitor's computer by the server (i.e., the server in system 4), and not by the website (i.e., the user 3). Therefore, the cookie is not received from the website (i.e., the user 3) as required by limitation [1A]. I also note that this same part of the specification describes the website separately "forward[ing] particulars

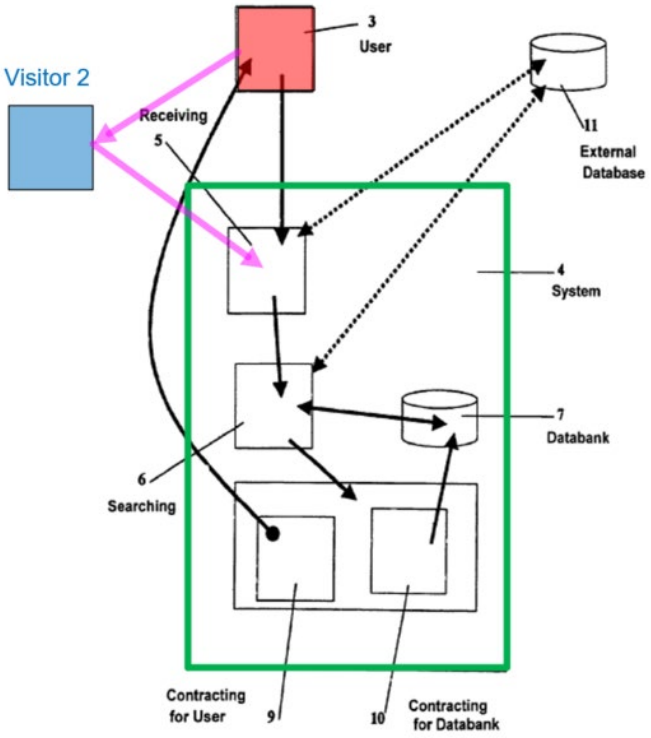
from the visitor's credentials (a partial profile)" to the server (i.e., the system 4) meaning that the partial profile is separate from the redirection. Ex. 1001, 4:1-5.

220. Similarly, the second part of the specification that relates to redirection describes the user 3 (i.e., the website) initially providing a partial profile of an entity (i.e., a visitor 2) to a databank's server (i.e., a server in system 4). Ex. 1001, 11:64-12:6. This part of the specification also describes that the databank's server (i.e., the server in system 4) installed the cookie on the visitor's computer. In other words, the cookie was not installed by the user 3 (i.e., the website). Finally, this second part of the specification describes that the user 3 enables the databank's server (i.e., a server in system 4) "to receive the cookie it installed by redirecting a portion of the visitor page to the databank's server." *Id.* This just means that the cookie that the system 4 installed on the visitor's computer will be sent back to the system 4. This does not describe that the system 4 receives the cookie from the user 3 and therefore this does not describe what the combination of limitations [1A] and [1C] require. As I described above at Section VIII.C, the process described in this part of the specification, whereby one system (e.g., system 4) installs a cookie on a client browser (e.g., the visitor's computer) that is later sent back to the system to identify the user/visitor was well-known. Ex. 1029, 6:45-60; Ex. 1034, 265-67, 275.

221. In sum, it is my opinion that a POSITA would have understood that the specification only describes the user 3 sending partial profile information to the

system 4 and the user 3 separately redirecting visitor 2's browser to send a cookie (that it got from the system 4) to the system 4. Therefore, neither of the two parts of the specification that deal with redirection describes receiving, at the system 4 from the user 3, a partial profile, wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by visitor 2. Because this is not described, it is my opinion that the specification and drawings do not describe or show the combination required by limitations [1A] and [1C]. That is, they do not describe or show "(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, a partial profile of an entity…;" "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer;" as recited in claim 1.

222. Despite this issue, a POSITA would have understood that the claims can be interpreted as covering a situation where the system 4 (**green**) receives a partial profile from the user 3 (**red**) via a redirect (**magenta arrows**) through the visitor 2's computer (**blue**), as illustrated in the following modified version of Figure 2 of the patent (which has been modified to add the visitor 2 (**blue**) and **magenta arrows** for the redirect):



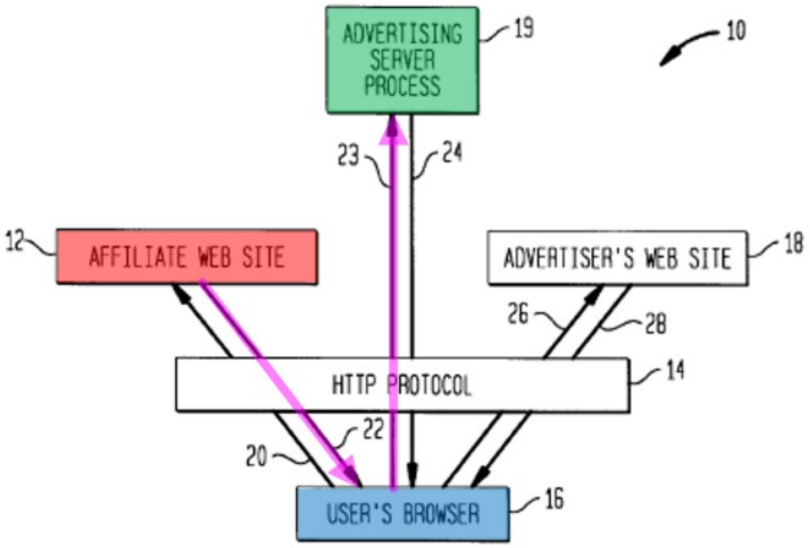
Ex. 1001, FIG. 2 (modified)

223. As I will explain in more detail below, the proposed combinations of Merriman in view of Jaye, Merriman in view of Minor, Roth in view of Jaye, and Roth in view of Minor each teach this situation.

A. Merriman In View Of Jaye

224. Merriman describes a method and system for compiling information to profile website visitors/users and delivering targeted advertisements over the Internet to those visitors/users. Ex. 1035, Abstract, 1:8-11, 2:6-45, 3:5-23, 4:24-32, 4:43-54, FIGs. 1-3A. Merriman teaches that the website 12 (**red**) sends a message 22 (**magenta**) that provides a webpage including a portion with a URL for redirecting the user's browser 16 (**blue**) to send the message 23 (**magenta**) to the

advertising server 19 (**green**). Ex. 1035, 3:24-52, FIG. 1. As shown in Merriman's Figure 1 (below, annotated), the two messages 22 and 23 (**magenta arrows**) form a redirection.

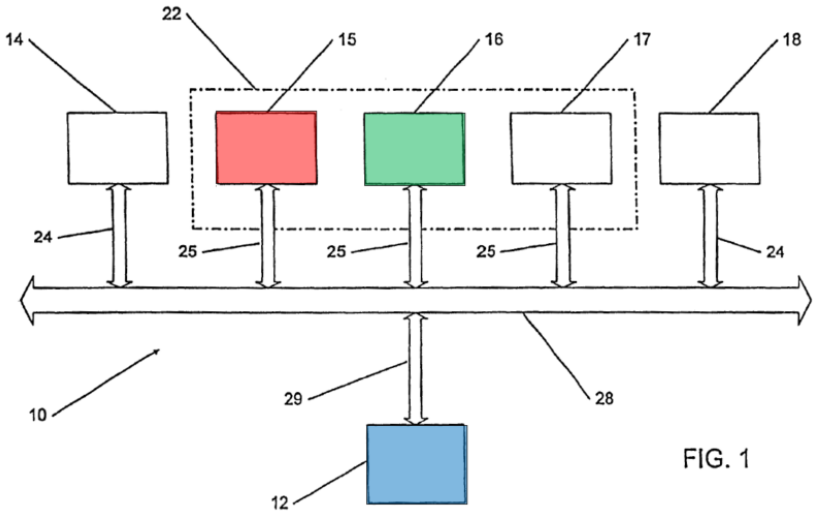


Ex. 1035, FIG. 1 (annotated)

I also note that similar to the description in the '249 patent (Ex. 1001, 4:1-7, 11:64-12:6), the message 23 includes a cookie stored on the user's browser 16 (**blue**). Ex. 1035, 3:41-52, 5:11-29. Merriman therefore describes URL redirection at least as much as the '249 patent does. That is, Merriman teaches the user's browser 16 sending a cookie (that was presumably set in the user's browser by the advertising server 19 as was known in the art (see discussion in Section VIII.C describing differences between cookies set by websites and cookies set by third party servers like advertising server 19)) to the advertising server 19 so that the advertising server 19 is able to leverage its cookie to combine profile information derived from the

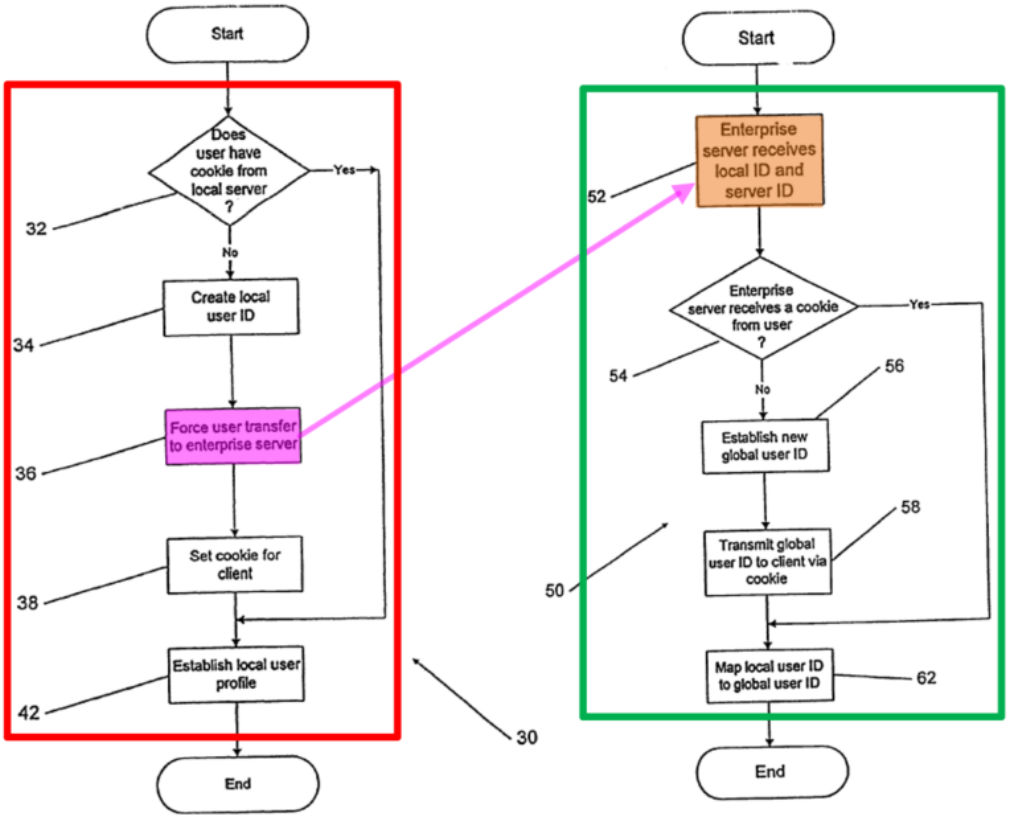
user's browser 16 across multiple affiliate websites 12. Likewise, the '249 patent simply describes the visitor's computer sending back a cookie to the system 4 that was installed on the visitor's computer by the system 4 (not by the website (or user) 3). Ex. 1001, 4:1-7, 11:64-12:6.

225. It is my opinion that a POSITA would have found it obvious to combine Merriman with Jaye such that the combination meets the plain and ordinary meaning of the claims (see for example limitation [1A] which requires that the partial profile come from the "at least one server" which refers to a website server that hosts the website that a person visits). As shown in Figure 1 of Jaye (below, annotated), Jaye's client 12 (**blue**) is similar to Merriman's browser 16, Jaye's local server 15 (**red**) is similar to Merriman's website 12, and Jaye's enterprise server 16 (**green**) is similar to Merriman's advertising server 19. Ex. 1037, FIG. 1. Jaye also teaches that its components perform similar operations to Merriman's components. Specifically, Jaye's client 12 (**blue**) gets a webpage from the local server 15 (**red**) and communicates over the Internet 10 with the enterprise server 16 (**green**) that maintains a global user profile. Ex. 1037, 4:5-6:19, 7:21-26, 8:40-43, 13:19-41, 14:22-25, FIG. 1.



Ex. 1037, FIG. 1 (annotated)

226. Importantly, Jaye teaches that the local server 15 (**red**) forces a transfer to automatically redirect the client 12 to the enterprise server 16 (**green**). This is shown in the following drawing placing Jaye's Figure 2 (left) side-by-side with Jaye's Figure 3 (right). Jaye's Figure 2 (left) shows the operation of a local server e.g., local server 15 (**red**), while Jaye's Figure 3 (right) shows the operation of the enterprise server 16 (**green**). The **magenta arrow** shows that the local server forces a transfer that is received by the enterprise server 16.



Ex. 1037, FIGs. 2 (left) and 3 (right) (both annotated)

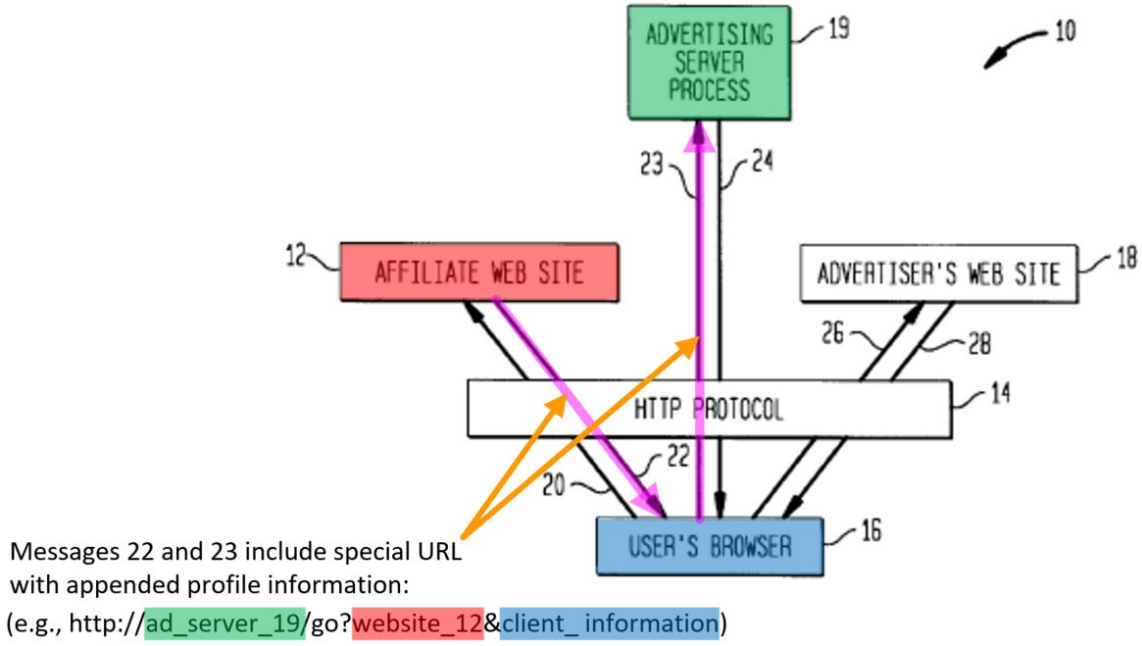
Ex. 1037, 6:32-67, 7:46-57, FIGs. 2-3. The forced transfer in Jaye is an automatic redirection. With respect to the forced transfer, Jaye explains that "a variety of conventional techniques exist for forcing a transfer to another server." Ex. 1037, 6:34-36.

227. In particular, Jaye describes a technique of inserting, into an image tag of a webpage, a special URL that redirects the client 12 to the enterprise server 16. Ex. 1037, 6:36-40. Jaye further describes appending additional profile information, such as a local server ID and client information (e.g., a local user ID), to the special URL. Ex. 1037, 6:40-46. Jaye even gives a pseudo-URL as an example:

http://enterprise_server_id/go?local_server_id&client_information. *Id.* In this example, the URL would redirect the client to the enterprise server 16 because it provides the enterprise_server_id. This example also teaches a POSITA that the special URL can be used to provide the enterprise server 16 with two pieces of information: the local_server_id which provides the ID of the local server such as the local server 15, and the client_information which teaches providing various information about the client. Jaye further teaches that, after the enterprise server 16 receives this profile information, it is added to a global user profile stored at enterprise server 16. Ex. 1037, 7:58-8:28.

228. A POSITA would have found it obvious to combine Merriman's system for delivering targeted advertisements based on user profiles and Jaye's teachings to automatically force a transfer of profile information (e.g., by appending profile information to a URL) to an enterprise server that maintains a global user profile for use by an advertiser. Ex. 1035, 3:24-4:54; Ex. 1037, 6:32-67, 7:46-57, 8:40-52. For example, it would have been obvious to implement or modify Merriman's system such that the website 12 sends the message 22 that provides a webpage including a portion having a special URL (with appended profile information as taught by Jaye) that causes the user's browser 16 to send the message 23 (including the special URL with appended profile information) to the advertising server 19, which in turn adds the profile information to a global user profile. Ex. 1035, 4:43-50; Ex. 1037, 8:10-

55. Notably, the special URL with appended profile information that would have been added to message 23 is separate from the cookie that would have been sent with message 23 (which again is presumably a cookie set by the advertising server 19). The following illustrates an example combination of Merriman and Jaye using Merriman's Figure 1 and an example special URL similar to the pseudo-URL in Jaye (i.e., the special URL at the bottom left of the drawing is similar to Jay's special URL – http://enterprise_server_id/go?local_server_id&client_information).



229. As shown above, the combination maintains messages 22 and 23 (**magenta arrows**), which together form an automatic electronic URL redirection. In addition, the pseudo-URL includes ad_server_19 to indicate the advertising server 19 (**green**) so that the user's browser 16 (**blue**) would be redirected to the advertising server 19. The pseudo-URL also includes website_12 appended to the URL to

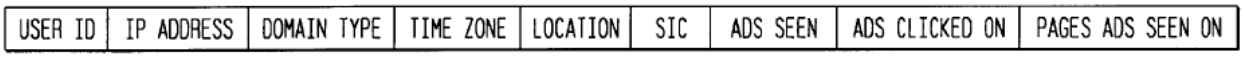
indicate the ID of the website 12 (**red**) that triggered the redirect. Finally, the pseudo-URL includes client_information appended to the URL to indicate that various client information about the user/client (who operates the user's browser 16 (**blue**)) would be transmitted to the advertising server 19. Thus, the combination of Merriman and Jaye teaches a method and system in which the advertising server 19 receives profile information from the website 12 as a result of automatic electronic URL redirection from a portion of a webpage accessed by the user's browser 16.

230. It is also my opinion that a POSITA would have found it obvious for the appended profile information in the combination of Merriman and Jaye to include various attributes. Ex. 1037, 6:40-46, 13:19-31; Ex. 1035, 3:35-38, 4:43-54. For example, a POSITA would have found it obvious for the attributes to include information identifying the user, similar to how Jaye teaches a local user ID and client information being appended to the URL. Ex. 1037, 6:40-46. As another example, the attributes would have included information identifying the website 12, similar to how Jaye teaches a local server ID that identifies the server that caused the forced transfer (i.e., the redirect). Ex. 1037, 6:40-46. In yet another example, the attributes would have included information identifying a page on the website 12 in view of Merriman's teaching of recording a page on which an ad is seen. Ex. 1035, 3:35-38, 4:43-54. Finally, a POSITA would have found it obvious for the attributes to include other well-known profile information that would have been of

interest to advertisers, such as demographic information captured by websites as described in Jaye. Ex. 1037, 6:40-46, 13:19-31; Ex. 1035, 3:35-38, 4:43-54.

231. In addition, it is also my opinion that a POSITA would have found it obvious to modify Merriman's data structure to store the various attributes appended to the URL. Ex. 1035, 4:43-54, FIG. 3A. Merriman illustrates a data structure for storing information about the user operating the browser 16 in Figure 3A (below).

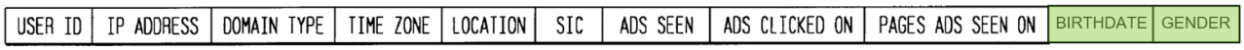
FIG. 3A



Ex. 1035, FIG. 3A

Modifying this data structure to store the attributes appended to the URL would have been a natural extension of including the various attributes with the URL. The point of including the information with the URL is for the advertising server 19 to receive and store the information, so a POSITA would have taken the additional steps to modify the database 54 at the advertising server 19 to accomplish this. For example, if well-known demographic information like birthdate and gender information were appended to the URL (which would have been obvious), then a POSITA would have also modified Merriman's data structure to include fields to capture this demographic information. This is shown in the following drawing which modifies Merriman's Figure 3A to add BIRTHDATE and GENDER fields to the data structure.

FIG. 3A



Ex. 1035, FIG. 3A (modified)

232. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSITA to modify Merriman and combine Merriman with Jaye in the ways that I have described. See Section IV (referring to obviousness rationale (G)). A POSITA would have been motivated to combine Merriman and Jaye in this way to provide profile information captured by the website 12 to advertising server 19 in real-time. Ex. 1035, 1:52-53, 1:59-63, 2:1-3, 4:65-5:7, 5:50-63; Ex. 1037, 2:55-62, 13:19-41; Ex. 1036, 5:20-63. It would have been desirable for the advertising server 19 to receive up-to-date profile information for providing improved targeted advertisements. Ex. 1035, 1:52-53, 1:59-63, 2:1-3, 4:65-5:7, 5:50-63; Ex. 1037, 2:55-62, 13:19-41. By passing profile information with the request for inserting an advertisement, the profile information can be immediately used to select an advertisement to fulfill the request. Ex. 1034, p. 281 (describing delivery of targeted content to customers "quickly and easily"). Advertisers were interested in current information about users and the context in which advertisements were to be placed. Ex. 1034, pp. 267-268, 279-280; Ex. 1036, 5:20-37. A POSITA would have been motivated to combine Merriman with Jaye to provide advertisers with current information that the advertisers were interested in because of the

economic incentives (e.g., increased revenue from more advertisers willing to pay for ads based on up-to-date information and increased profits because advertisers willing to pay more per ad) associated with providing the current information. A POSITA would have been aware of these demands and economic incentives for providing current information about users and the content in which advertisements were to be placed. For example, in addition to knowing advertisers were interested in such information, a POSITA would also have known that advertisers were even willing to pay more if their advertisements were delivered based on this information. Ex. 1032, 4:8-9; Ex. 1034, 119 (describing "Accumulating sufficiently rich profiles of these clients to generate higher revenues"); Ex. 1036, 4:63-5:37, 8:44-48; Ex. 1044, ¶¶ [0079]-[0080]. The demand and economic incentives for this information would have motivated a POSITA to produce the combination of Merriman and Jaye that I described above.

233. Further, as explained above, the combination of Merriman and Jaye is not limited to any particular type of profile information because it would have been obvious for the redirection to involve transferring various types of profile information. Ex. 1035, 8:51-56; Ex. 1037, 13:19-41. A POSITA would have had different motivations for transferring different types of profile information. For example, as noted above, a POSITA would have recognized from teachings in the prior art that advertisers were interested in current information about users and the

context in which advertisements were to be placed. Ex. 1034, pp. 267-268, 279-280; Ex. 1036, 5:20-37. These teachings would have provided a suggestion/motivation (see Section IV, referring to obviousness rationale (G)) for a POSITA to have designed the profile information to identify the website 12 (which is similar to Jaye's local server ID) to inform the advertising server 19 of the website that the user is currently visiting, which would provide context for a targeted advertisement. For example, if the user was currently visiting a sports-related website, it would have been advantageous to provide this contextual information to advertising server 19 for it to provide an advertisement for sports-related products. Ex. 1037, 8:44-49. Indeed, Merriman discloses that the message 22 includes "information about the page on which the advertisement will be displayed" and that message 23 includes "a substring key indicating the page in which the advertisement to be provided from the server is to be embedded." Ex. 1035, 3:35-52. This teaches a POSITA that the website 12 sends profile information via the redirect messages to the advertising server 19.

234. Additionally, or alternatively, a POSITA would have designed the profile information to identify the user/visitor (which is similar to Jaye's local user ID) to inform the advertising server 19 of who the user is for the advertising server 19 to provide advertisement(s) targeted to the user. Ex. 1037, 8:62-65, 13:19-31. For example, based on the above-described teachings that advertisers were interested

in current information about users (Ex. 1034, pp. 267-268, 279-280; Ex. 1036, 5:20-37), a POSITA would have understood that it would have been advantageous for the advertising server 19 to receive information indicating the user is an 18-25 year old male (or a user ID associated with this information) and thus would have been motivated by these teachings to combine Merriman with Jaye. Ex. 1034, p. 149. By receiving this information, the advertising server 19 would have been able to provide advertisements for products typically purchased by 18-25 year old males. Ex. 1034, p. 149. A POSITA would have been very familiar with the desire of the industry (e.g., advertisers and ad agencies like Double Click (which is the assignee for the Merriman reference)) for acquiring demographic information about users. Thus, there are multiple teachings, suggestions, and motivations for the proposed combination of Merriman and Jaye.

235. It is also my opinion that other rationales also support my finding that the combination of Merriman and Jaye would have been obvious. First, the combination of Merriman and Jaye merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are Merriman's system having the URL redirection and Jaye's URL redirection with appended profile information. Ex. 1035, 2:59-4:54, FIGs. 1, 2, 3A; Ex. 1037, 6:32-7:57. These known elements would have been combined according to known methods, such as

Jaye's method of appending profile information to URLs. Ex. 1037, 6:32-56. Finally, the combination yields predictable results, specifically it yields a URL redirection that passes profile information from Merriman's website 12 to Merriman's advertising server 19.

236. The combination of Merriman and Jaye also involves simply substituting one known element for another to obtain predictable results. See Section IV (referring to obviousness rationale (B)). In particular, the combination would substitute Merriman's URL with Jaye's special URL having profile information appended thereto. Ex. 1035, 3:35-41; Ex. 1037, 6:36-56. The predictable result of such a substitution is Jaye's special URL (with appended profile information) being sent in Merriman's messages 22 and 23, so that it is received by Merriman's advertising server 19 and stored as profile information in a user profile in Merriman's database 54.

237. Further, the combination of Merriman and Jaye merely uses a known technique to improve similar devices in the same way. See Section IV (referring to obviousness rationale (C)). The known technique is Jaye's technique of appending profile information to a URL. Ex. 1037, 6:32-7:57. This technique is used by Jaye's local server 15, which provides a webpage and is similar to Merriman's web server providing website 12. Ex. 1037, 4:53-5:19; Ex. 1035, 3:6-35. Jaye's technique would have improved Merriman's similar web server providing website 12 by

enabling it to send profile information in the redirect message 22 (to the extent it does not already) in the same way Jaye's technique improves its own local server 15.

238. The combination of Merriman and Jaye also involves applying a known technique to a known device ready for improvement to yield predictable results. See Section IV (referring to obviousness rationale (D)). Merriman teaches the use of implicit profile information (e.g., browser type), while the known technique of Jaye's teaches appending profile information to a URL. Ex. 1037, 6:32-7:57. The known device ready for improvement is Merriman's system including the website 12 that already embeds a URL and is capable of appending profile information and the advertising server 19 that already stores user profiles and is ready to receive profile information from the URL. Ex. 1035, 2:59-4:54, FIGs. 1, 2, 3A. The predictable result of the combination is Merriman's website 12 appending profile information to the URL in message 22 and Merriman's advertising server 19 receiving the profile information in message 23 and storing the profile information in a user profile in its database 54 (e.g., as additional fields in the data structure shown in Merriman's Figure 3A).

239. Finally, a POSITA would have had a reasonable expectation of success in achieving the above described combination of Merriman and Jaye. This is because the combination merely involves a routine method of appending information

to a URL, so that information is received and added to the appropriate user profile by the advertising server 19. Ex. 1037, 6:34-36, 7:46-57. A POSITA would have had the skills, including programming and database design skills, to carry out this straightforward implementation of appending profile information to a URL and adding the profile information into a database of user profiles.

1. Independent Claim 1

a) [1PRE]: "An automated method of collecting profiles of Internet-using entities, the method comprising:"

240. A POSITA would have understood that Merriman teaches this preamble. Merriman discloses "methods and apparatuses for targeting the delivery of advertisements over a network such as the Internet." Ex. 1035, Abstract, 1:8-11, 2:6-7, claims 36-39, 42-50. Merriman's method includes "gather[ing] information about recipients of the advertisement." Ex. 1035, 2:1-3, 2:8-14, 2:37-45. Merriman even teaches advertising server 19 automatically compiling information about users using browsers (such as the browser 16) to access websites over the Internet (the claimed "Internet-using entities") into user profiles, which is a process within its overall method for delivering targeted advertisements. Ex. 1035, Abstract, 2:40-45, 2:65-3:28, 4:20-27, 4:43-54, 7:46-56, 8:51-56, FIG. 3A. Thus, Merriman teaches a method of delivering targeted advertisements that includes an automated method of collecting profiles of users of Internet browsers (the claimed "automated method of collecting profiles of Internet-using entities"). Merriman's method, as modified

based on Jaye, comprises limitations [1A]-[1E]. *See* Sections XII.A.1.b-f, below. Thus, the combination of Merriman and Jaye teaches limitation [1PRE].

b) [1A]: "(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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

241. Merriman teaches the basic structure set forth in limitation [1A]. First, Merriman's advertising server 19 comprises one or more servers and uses a database 54. Ex. 1035, 4:20-24, FIG. 2. A POSITA would have understood that the advertising server 19 would have been programmed to perform the processes that Merriman states are "implemented on one computer platform." Ex. 1035, 4:21-24, 9:8-16. The advertising server 19 is also coupled to the Internet (the claimed "global computer network") and uses the HyperText Transfer Protocol (HTTP) to communicate over the Internet. Ex. 1035, Abstract, 3:6-18, 3:24-28, 4:12-19, 8:47-60. Thus, the advertising server 19 is the claimed "programmed computer system."

242. Second, a POSITA would have understood that Merriman's website 12 is a web server controlled by one of a plurality of unaffiliated third parties (the claimed "at least one server controlled by one of a plurality of unaffiliated third parties"). Ex. 1035, 3:30-38, 4:12-19. Although Merriman describes the website 12

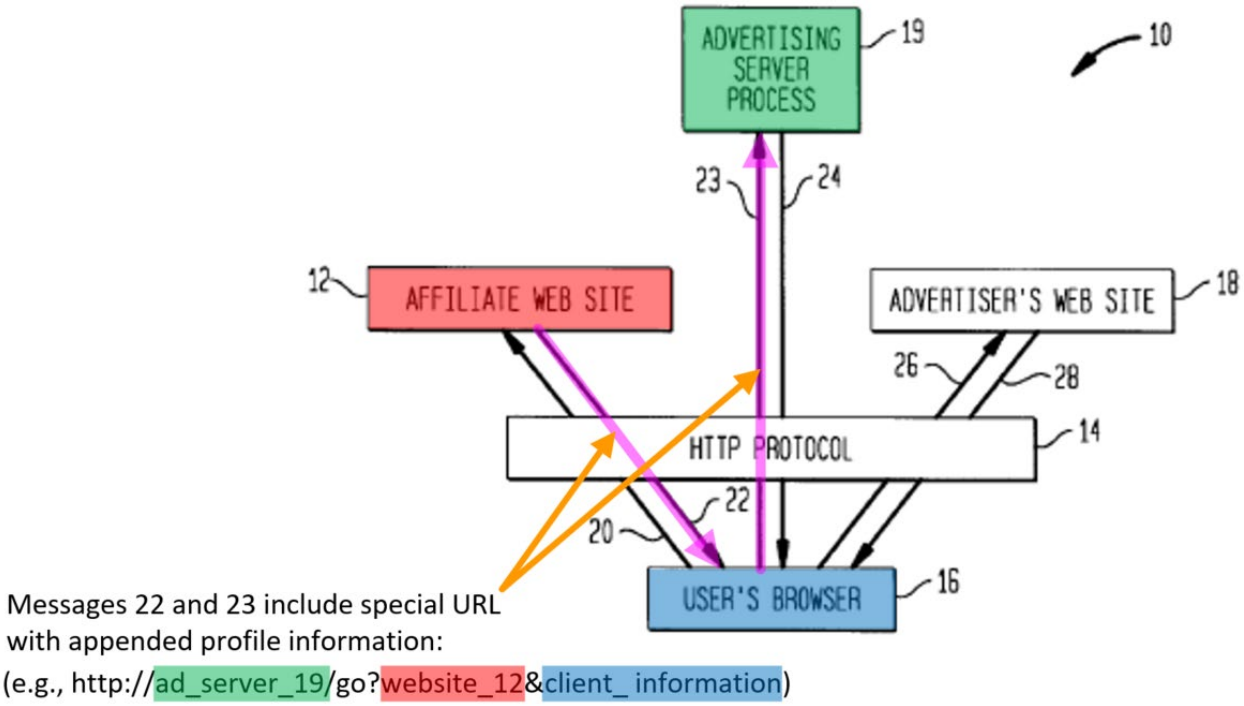
being an "affiliate website" and being controlled by "affiliates," a POSITA would have understood that this "affiliate" term is just used to reflect that there may be a contract between the party providing website 12 and the party providing advertisement server 19. Ex. 1035, 2:59-3:4, 4:12-19, 9:5-16. A POSITA would have further understood that Merriman's website 12 is controlled by an unaffiliated third party as that term is used in the '249 patent. *Id.* In other words, because the website 12 is not owned or controlled by the same party that owns or controls the advertising server 19, the website 12 is controlled by an unaffiliated third party as that term is used in the '249 patent. Ex. 1035, 3:2-4, 3:16-18, 9:5-16. A POSITA would have also understood that the website 12 would have been separately owned from the advertising server 19 in most cases and would have considered the website 12 to be not closely associated with or related to the advertising server 19 (in accordance with at least one court's construction (see Section XI.B above)). Thus, it would have at least been obvious to modify Merriman such that the website 12 is controlled by one of a plurality of third parties unaffiliated with advertising server 19 for the purpose of expanding the applicability of Merriman's system so that the advertising server 19 is not limited to just providing targeted advertisements for websites that are commonly owned. *Id.*

243. Third, the user that uses the user computer operating the user's browser 16 in Merriman is the claimed "entity that uses a user computer." Ex. 1035, 2:65-

3:1, 3:24-28. The user computer operating the user's browser 16 is coupled to the Internet and accesses the website 12 (the claimed "coupled to the global computer network and accessing a website). Ex. 1035, 2:65-3:1, 3:6-18, 3:24-28.

244. The combination of Merriman and Jaye maintains Merriman's system components, but modifies Merriman's operation in a manner teaching the rest of limitation [1A]. Specifically, as explained above, the combination modifies Merriman's URL to be like Jaye's special URL that has appended client information. That client information substring in Jaye's special URL teaches appending profile information to a URL. Ex. 1037, 6:36-46. Merriman already discloses the website 12 sending message 22 to the user's browser 16 to cause the browser 16 to send message 23 to the advertising server 19. Ex. 1035, 3:28-57. And Merriman even teaches that message 23 would include profile information like the user's IP address, a cookie identifying the user, a substring identifying the webpage that the user is visiting (which is the webpage in which the ad is to be placed), and MIME header information that indicates information about the user's computer. Ex. 1035, 3:41-52. In the proposed Merriman and Jaye combination, both messages 22 and 23 (**magenta arrows**) include profile information (the claimed "partial profile") appended to the URL (like how Jaye appends client information to its URL) by the website 12 (**red**) and the profile information would have been information about the

user of the browser 16 (**blue**). The following drawing reproduces the above illustration of the combination. See Section XII.A, above.



As shown, the special URL in the combination would have client information (**blue**) appended at the end of the URL that would have been added to a profile for the client/user and therefore is profile information (the claimed "partial profile"). Thus, the combination of Merriman and Jaye teaches electronically receiving, at the advertising server 19 (**green**) from the website 12 (**red**), profile information of the user (the claimed "electronically receiving at a programmed computer system…from at least one server…, a partial profile of an entity").

245. Further, the profile information (the claimed "partial profile") in the Merriman and Jaye combination is available to the party controlling the website 12

given that the website 12 is what appends the profile information (the claimed "available to one of the third parties"). A POSITA would have understood that the server providing website 12 electronically stores the profile information itself or has access to storage with the profile information, such that the profile information is electronically available (in accordance with at least one court's construction of available (see Section XI.D above)) to the party controlling website 12. A POSITA would have also understood that this profile information could have been updated at a time significantly earlier than the request made by the user to the website (e.g., the website might have run a data mining tool every week to update these profiles). And, the profile information in the combination would have contained at least one attribute related to the user of the user's browser 16 (the claimed "contains at least one profile attribute related to the entity"). For example, the profile information would have contained information identifying the user (similar to Jaye's local user ID or other client information collected by the website 12) or information identifying the website 12 that the user visited (similar to Jaye's local server ID). Ex. 1037, 6:36-46. With respect to the information identifying the website 12, that information is related to the user because the webpages that the user views is representative of the user's interests and therefore relevant for targeted advertising. Ex. 1035, 4:50-54.

246. Accordingly, a POSITA would have found that the combination of Merriman and Jaye teaches electronically receiving at the advertising server 19 coupled to the Internet, from the website 12, profile information of a user that uses the browser 16 coupled to the Internet and accessing the website 12, which profile information is available to the party controlling the website 12 and contains at least one attribute related to the user. This teaches the claimed "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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity" in limitation [1A]. Thus, the combination of Merriman and Jaye teaches limitation [1A].

c) [1B]: "(b) automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity;"

247. With respect to Figure 3A (below, annotated), Merriman describes a database structure for storing attributes about a user, such as a user identification ("USER ID" (**orange**)) and information identifying pages on which advertisements were seen by the user ("PAGES ADS SEEN ON" (also **orange**)). Ex. 1035, 4:43-54, FIG. 3A. A POSITA would have understood that the advertising server 19

(which is the claimed "computer system" as discussed above) automatically (with no human control (see Section XI.E above)) receives the attributes and electronically stores them in Merriman's database 54 on a user-by-user basis to form a user profile for each user. Ex. 1035, 3:41-52, 3:64-4:8, 4:20-24, 4:43-50. Thus, Merriman's database structure in Figure 3A teaches storing a user profile (**purple**) that meets the claimed "electronically stored profile."

FIG. 3A



Ex. 1035, FIG. 3A (annotated)

248. In the combination of Merriman and Jaye, the profile information appended to the URL by website 12 and received by advertising server 19 (which is the claimed "partial profile" as discussed above) would have included any of the various attributes known to be of interest to advertisers. Ex. 1035, 2:7-45, 4:50-54. Therefore, in the combination of Merriman and Jaye, Merriman's database structure in Figure 3A would have been modified accordingly to store the various attributes (e.g., one or more fields or columns would have been added). Ex. 1035, 2:7-45, 4:50-54. Such additional modification would have been obvious and straightforward because a POSITA would have been motivated to capture any of the various attributes in the profile information for use in targeted advertising and it merely involves routine database design skills. Ex. 1035, 2:7-45, 4:50-54; Ex. 1037, 8:40-

55, 13:32-36. Although obvious, such additional modification is not necessary to meet the claims because the claims do not specify a particular profile attribute. For simplicity, the USER ID and PAGES ADS SEEN ON attributes of Merriman are specifically discussed because related attributes are expressly disclosed as being appended by Jaye. In particular, Jaye discloses appending a local user ID, which relates to Merriman's USER ID identifying the user of browser 16, and a local server ID, which relates to Merriman's PAGES ADS SEEN ON identifying a page on website 12. Ex. 1037, 5:5-19, 5:49-6:6, 6:40-43.

249. Therefore, in one example of the Merriman and Jaye combination, a POSITA would have at least included the USER ID and PAGES ADS SEEN ON attributes in the profile information appended to the URL. And, the combination of Merriman and Jaye teaches that the advertising server 19 electronically stores the profile information by adding the attributes (e.g., USER ID and PAGES ADS SEEN ON) in the profile information to the user profile for the particular user (the claimed "automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile"). Ex. 1035, 3:41-52, 3:64-4:8, 4:20-24, 4:43-50.

250. Further, PAGES ADS SEEN ON is plural and there are plural websites 12, so Merriman teaches adding additional pages in the PAGES ADS SEEN ON column as the user visits them. Ex. 1035, 2:59-65, 3:24-28, 4:43-54. And, because

Merriman teaches that a user profile is for each user (Ex. 1035, 4:43-54, FIG. 3A), the Merriman and Jaye combination would have added the PAGES ADS SEEN ON attribute within the profile information to the user profile related to the same user (the claimed "which stored profile is believed to be related to the same entity") of the browser 16 that passed the profile information to the advertising server 19. A POSITA would have understood that Merriman's advertising server 19 determines that profile information is related to the same entity by matching a received USER ID with the USER ID in its database, thereby meeting AlmondNet's proposed construction for "believed to be related." See Section XI.J above.

251. Accordingly, the combination of Merriman and Jaye teaches automatically with the advertising server 19 electronically storing the received profile information by adding it to an electronically stored user profile that is related to the same user of browser 16. This teaches the claimed "automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity." Thus, the combination of Merriman and Jaye teaches limitation [1B].

d) [1C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

252. Merriman discloses that the website 12 sends message 22, including a URL, that causes the user's browser 16 to send message 23 to the advertising server 19 associated with the URL. Ex. 1035, 3:28-43. In particular, Merriman discloses "Those messages 22 preferably contain all of the information available at the particular web site 12 for the requested page to be displayed by the user's browser 16 except for one or more advertising objects such as banner advertisements. These objects preferably do not reside on the affiliate's web server. Instead, 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. The link by way of example may be a hypertext markup language (HTML) <img> tag, referring to, for example, an inline image such as a banner. The user's browser 16 then transmits a message 23 using the received IP address to access such an object indicated by the HTML tag from the advertisement server 19. Included in each message 23 typically to the advertising server 19 are: (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." Ex. 1035, 3:30-52.

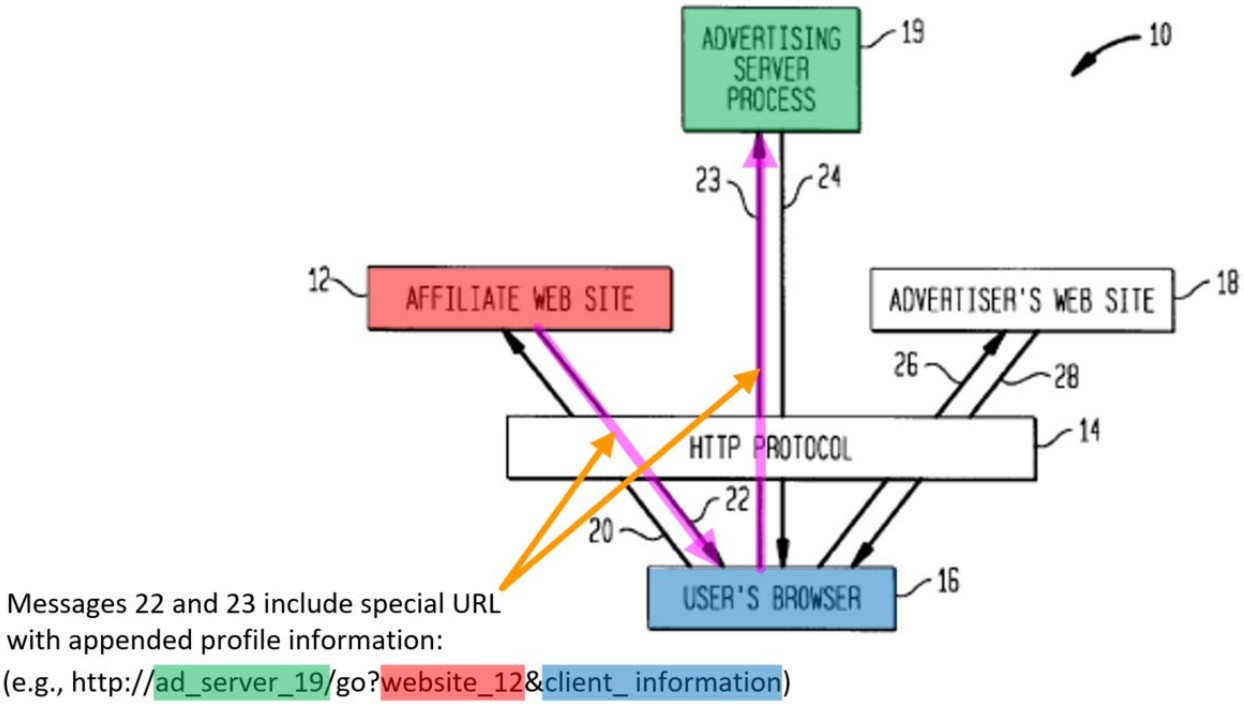
253. A POSITA would have understood that this is effectively a URL redirect, like the well-known methods of URL redirection in which a URL of another server is provided to redirect the user's computer to the other server. See Section VIII.D above. Additional details for URL redirect are also presented in other portions of Merriman's specification. Ex. 1035, 1:39-44 and 3:64-4:5. The sending of a URL in message 22 from one server (e.g., website 12) to automatically cause transmission of message 23 to another server (e.g., advertising server 19) is "automatic electronic URL redirection." Moreover, this sending taught by Merriman meets AlmondNet's proposed construction meaning "obtaining certain information for at least a portion of an accessed page/site from a different location." Ex. 1011, 45-49, 71. Further, it also meets the construction of the Court in the 1035 D. Del. Case, which construed a similar term in the related '582 patent to mean "obtaining a requested webpage or a portion of a requested webpage from a different location." Ex. 1012, 117-119 (pp. 92-94 of Transcript). And, this sending of message 22 also meets the construction of limitation [1C] as meaning "a partial profile is received as a result of a user computer accessing a website page, thus causing a web server to tell the user computer's browser to obtain certain information for a portion of the accessed page from a different location" (as AlmondNet proposed

in the *Oath Holdings* case, see Section XI.I above). A POSITA would have also understood that Merriman's URL redirect occurs without any intervening user action and therefore especially comports with the PTAB's construction of "as a result of automatic electronic URL redirection" as meaning "as a result of automatic electronic URL redirection that does not preclude intervening user action between the time of URL redirection and receipt of the partial profile." Ex. 1019, 112-113 (pp. 6-7 of Institution Decision); See Section XI.H, above.

254. Moreover, the URL of Merriman's message 22 is embedded in an image tag within a webpage of the website 12 (the claimed "portion of a page of the website") accessed by the user computer that operates the browser 16 (the claimed "accessed by the user computer"). Ex. 1035, 3:28-41. An image tag in HTML is used to display images on a web page. Ex. 1047, 153, 159-161, 173, 239. Upon encountering an image tag, the browser recognizes it as a request to display an image and proceeds to process the image attributes. *Id.* The browser reads the "src" attribute of the image tag to determine the source file of the image. *Id.* The "src" attribute contains the URL or relative path to the image file. *Id.* The browser then sends a request to retrieve the image file from the specified source. *Id.* Once the image file is retrieved, the browser starts loading the image. *Id.* Once the image is fully loaded, the browser displays it within the allocated space on the web page. *Id.*

255. The message 22 in Merriman also includes "information about the page on which the advertisement will be displayed" (e.g., information for PAGES ADS SEEN ON). Ex. 1035, 3:35-38. And, message 23 includes profile information, such as: (i) the user's IP address, (ii) a cookie, (iii) a substring key indicating the page, and (iv) MIME header information. Ex. 1035, 3:41-51. Therefore, Merriman teaches that the advertising server 19 receives profile information as a result of automatic electronic URL redirection from a portion of a webpage of the website 12 accessed by the user computer that operates the browser 16. Merriman thus teaches limitation [1C], except that it does not expressly disclose the profile information (received by the advertising server 19) coming from the website 12 under the plain and ordinary meaning of limitation [1A].

256. In the combination of Merriman and Jaye, the same messages 22 and 23 (**magenta arrows**) of Merriman are communicated, but with profile information appended to the URL, as illustrated in the drawing below (which is the same as the drawing provided above that uses Merriman's Figure 1 and shows a pseudo-URL like the one taught by Jaye).



257. Thus, the combination of Merriman and Jaye teaches that receiving the profile information (by the advertising server 19 (**green**) from the website 12 (**red**) in accordance with limitation [1A]) is achieved as a result of automatic electronic URL redirection from a portion of a webpage of the website 12 (**red**) accessed by the user computer that operates the browser 16 (**blue**). This teaches the claimed "wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer." Thus, the combination of Merriman and Jaye teaches limitation [1C].

e) [1D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"

258. Merriman teaches that the advertising server 19 (which is the claimed "computer system" as discussed above) maintains the database 54 that has the database structure shown in Figure 3A (below, annotated). Ex. 1035, 4:5-8, 4:20-24, 4:32-37, 4:43-54, FIGs. 2, 3A-3C. As shown in Figure 3A, Merriman's database structure includes a field for recording information identifying pages on which advertisements were seen ("PAGES ADS SEEN ON" (**orange**)) in a user profile (**purple**) (which is the claimed "stored profile" as discussed above). Ex. 1035 4:43-54, FIG. 3A.

FIG. 3A



Ex. 1035, FIG. 3A (annotated)

259. A POSITA would have understood that Merriman teaches that the advertising server 19 automatically (with no human control (see Section XI.E above)) generates the information identifying a page an advertisement was seen on. Ex. 1035, 3:35-52, 4:43-54, FIG. 3A. In the case where the website 12 sends the profile information to the advertising server 19 to initiate the advertisement delivery process, the page an advertisement was seen on is a page of the website 12 (which could be represented as website_12/pageA). By generating the information

identifying this page and recording it in a field for "PAGES ADS SEEN ON" within the database 54, Merriman generates an electronic record of the party controlling the website 12 that contributed the profile information. Accordingly, Merriman (and thus, Merriman in view of Jaye Jaye) teaches the advertising server 19 automatically generating an electronic record in the PAGES ADS SEEN ON field, which is a record of the party controlling the website 12 that contributed the profile information to the user profile. This teaches the claimed "automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes." The combination of Merriman and Jaye thus teaches limitation [1D].

260. Further, as discussed above (see Section XII.A), in the combination of Merriman and Jaye, profile information includes various attributes in addition to PAGES ADS SEEN ON and the database 54 of Merriman would have been modified to store the various attributes. For example, profile information would have included information identifying the website 12 or the party controlling the website 12, similar to Jaye's local server ID which identifies the server that sent the profile information. Ex. 1037, 6:40-46.

261. One example of the combination of Merriman and Jaye is illustrated in the drawing below by modifying Merriman's Figure 3A to include an additional field (**light green**) called "Party Providing Profile Info" and a row showing information

for a particular user (labeled "user16" to correspond to the user of the browser 16 in Merriman). As shown in this example, the combination would have a separate field for recording information indicating the party that provided the profile information (e.g., the website12 (**red**) in Merriman) in addition to Merriman's existing fields for recording other attributes of the profile information (**orange**), such as information identifying the user (e.g., "user16" to represent the user of Merriman's browser 16) and information identifying a page an ad was seen on (e.g., "website12/pageA" to represent a webpage on the website 12 of Merriman). An 'X' is placed in some fields to indicate that they would have data but that data is not important to this analysis.

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	Party Providing Profile Info
user16	X	X	X	X	X	X	X	website12/pageA	website12

Ex. 1035, FIG. 3A (modified)

262. Because Jaye teaches recording the local server ID, a POSITA would have found it obvious for the combination of Merriman and Jaye to record the local server ID. Ex. 1037, 8:23-28. A POSITA would have also been motivated to record the local server ID to keep a record of which party provided the profile information so that party would be rewarded. Ex. 1039, ¶¶ [0111] (describing payment for providing profiles), [0114] (describing compensation for providing information for a profile); Ex. 1045, Abstract, 4:60-5:12, 7:23-8:14. A POSITA would have

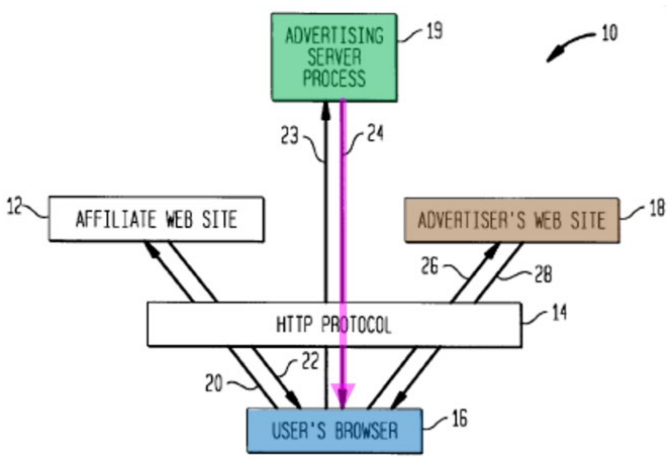
understood that rewarding the party providing the profile information is a way to incentivize parties to provide information that otherwise would not be shared. Ex. 1039, ¶¶ [0111] (describing payment for providing profiles), [0114] (describing compensation for providing information for a profile); Ex. 1045, Abstract, 4:60-5:12, 7:23-8:14. A POSITA would have also kept this record for determining the reliability of the information based on its source as was known. Ex. 1039, ¶¶ [0074]-[0075]; Ex. 1043, Abstract, 1:43-47, 1:51-63, 7:48-60, 8:37-45, 9:50-10:32. For example, a POSITA would have been motivated to provide advertisers with a record of the source of information to determine the reliability so that the advertisers may, e.g., determine a payment amount for the information, or determine whether to trust the information before using it to match an advertisement to the user. *Id.* Additionally, the type of website (e.g. baseball related or music related; or ending with a .com or .edu) could be useful in profiling the type and interest of the user. Recording the source of the profile information would have merely involved straightforward database usage and management processes that were well-within the skill level of a POSITA. Ex. 1043, 2:50-67, 7:36-8:46, 9:50-10:32.

263. In sum, the combination of Merriman and Jaye teaches the advertising server 19 automatically generating an electronic record indicating the party controlling the website 12 that contributed the profile information to the user profile. This teaches the claimed "automatically with the computer system generating an

electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes." Thus, the combination of Merriman and Jaye teaches limitation [1D].

f) [1E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."

264. With respect to Figure 1 (below, annotated), Merriman also shows an advertiser's website 18 (**brown**). Ex. 1035, 2:59-65, 3:18-23, 3:67-4:5, FIG. 1. As shown below, the advertiser 18 is a third party because it is separate from the website 12 and from the advertising server 19, and a POSITA would have understood that advertisements for goods or services of the advertiser 18 are third-party advertisements or third party announcements (in accordance with the PTAB's construction (see Section XI.A, above)). Merriman's reference to "third party advertisements" also teaches that the website 12, advertising server 19, and advertiser 18 are three separately controlled (unaffiliated) parties. Ex. 1035, 2:59-65. Further, Merriman teaches using data in the user profiles of its database 54 to deliver (over the Internet) targeted advertisements for third-party advertisers (which operate the website 18) to the user computer that operates the browser 16. Ex. 1035, Abstract, 1:8-11, 2:40-45, 4:50-54, 5:50-60, 5:64-67, 6:6-11, 6:56-59, 8:47-51.



Ex. 1035, FIG. 1 (annotated)

265. In particular, Merriman teaches that the advertising server 19 (**green**) sends the message 24 (**magenta**) containing a banner advertisement to the user's browser 16 (**blue**) over the Internet. Ex. 1035, 3:52-63. Then, if a user clicks on the banner advertisement additional messages (another message 23 and another message 24 and messages 26 and 28) are exchanged to connect the user's computer to the appropriate third-party advertiser 18. (i.e., Merriman teaches another URL redirection). Ex. 1035, 3:64-4:11. Therefore, Merriman teaches that the user profile, including added profile information, comprises data used in targeting advertisements for the advertisers 18 to the user computer (which operates the browser 16) over the Internet. This teaches the claimed "wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network." Thus, Merriman teaches limitation

[1E], except that it does not expressly disclose the profile information coming from the website 12 under the plain and ordinary meaning of limitation [1A].

266. The combination of Merriman and Jaye teaches that the profile information (appended to the URL) comes from the website 12, as discussed above. Accordingly, the combination of Merriman and Jaye teaches that the user profile (stored in Merriman's database 54), including the added profile information (received from the website 12), comprises data used in targeting advertisements of the advertisers 18 to the user computer (which operates the browser 16) over the Internet. This also teaches the claimed "wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network." Thus, the combination of Merriman and Jaye teaches limitation [1E]. Finally, because the combination teaches all limitations of claim 1, it is my opinion that claim 1 would have been obvious to a POSITA.

2. Dependent Claim 3: "The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer."

267. Claim 3 of the '249 Patent depends from claim 1 and further requires "wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received

partial profile and the stored profile being related to the same user computer." Ex. 1001, claim 3. A POSITA would have understood that this feature is easily implemented in a standard database. See Section VIII.B. As discussed above, claim 1, from which claim 3 depends, is taught by the combination of Merriman and Jaye.

268. As I discussed above with respect to limitation [1B], Merriman describes a database structure for storing a user profile, including attributes such as a user identification ("USER ID") and information identifying pages on which advertisements were seen ("PAGES ADS SEEN ON"). Ex. 1035, 4:43-54, FIG. 3A. Merriman describes that a database structure such as that shown in FIG. 3A is created "[f]or each user identified by the system," and a POSITA would have known that "an entity" may be a user, such as one of Merriman's users of the browser 16. Ex. 1035, 4:43-54. As explained above at Section XII.A.1.c, Merriman also teaches "with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which profile is believed to be related to the same entity." Ex. 1035, 4:44-51, 5:50-67. Therefore, it is my opinion that Merriman (and thus the combination of Merriman and Jaye) teaches "the computer system adding the received partial profile to a stored profile believed related to the same entity," as required by claim 3 and by limitation [1B].

269. As previously explained with respect to limitation [1A], Merriman (and thus the combination of Merriman and Jaye) teaches an advertising system 19 (the

claimed "computer system") receiving the profile information (the claimed "partial profile") via a message 23 sent from the browser 16. Ex. 1035, 3:28-57, FIG. 1. Also, as previously explained with respect to limitation [1B], Merriman's database structure maintains a profile (the claimed "stored profile") for each user that includes a "USER ID" and "IP address," among other profile information. Ex. 1035, 4:44-51, FIG. 3A. Therefore, when the advertising server 19 receives the USER ID from the user's computer via the message 23, it would have been obvious to a POSITA that the profile information included in the message 23 would be added to the database structure ("stored profile") that includes the same USER ID. *Id*.

270. A POSITA would have understood that Merriman does this on account of the received profile information and the user profile being related to the same user computer that operates the browser 16. Ex. 1035, 8:66-9:4. The USER ID in Merriman would identify the user computer that operates the user's browser 16, and not the actual person operating it. The actual person could not be determined unless further identification steps were taken, such as authentication using a fingerprint or password. As those authentication steps are not disclosed, a POSITA would have understood that the USER ID identifies the computer. In short, a POSITA would have understood that Merriman is assuming that the user computer is used by the same person.

271. Accordingly, as shown above, Merriman (and thus, the combination of Merriman and Jaye) teaches the additional limitations included in dependent claim 3, and renders claim 3 obvious to a POSITA.

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

272. Claim 4 of the '249 Patent depends from claim 3 and further requires "wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer." Ex. 1001, claim 4. As discussed above, claim 3, from which claim 4 depends, is taught by the combination of Merriman and Jaye.

273. As I explained above, Merriman describes that, when the browser 16 transmits a message 23 to the advertising server 19 (and therefore transmits the profile information), the message includes a "USER ID" and "IP address" among other profile information. Ex. 1035, 3:41-52. Merriman explains that the message 23 would have included "a cookie if the browser 16 is cookie enabled and stores cookie information . . . ." *Id*. A POSITA would have known that a cookie can be used to identify a user computer, such as the one operating Merriman's browser 16 (the claimed "user computer"). See Section VIII.C, above.

274. Merriman describes that "[i]f a cookie was detected, then the cookie contains the user's identification number that can be accessed in the database." Ex.

1035, 5:19-21. Further, as I described above at Section VIII.C, using cookies to identify users and access characteristics (i.e., a user profile) of the user at a data repository, such as Merriman's database structure, was known in the art. Ex. 1034, 265-267, 275; Ex. 1029, 6:54-60. Therefore, it would have been obvious to a POSITA that Merriman's advertising server 19 would use the user's identification number, included in the cookie, to access the database structure that includes the corresponding user's profile. Ex. 1035, 3:43-52, 5:11-29, FIG. 3A. In doing so, Merriman would have "determine[d] that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer," as claimed.

275. The combination of Merriman and Jaye preserves these features of Merriman. Thus, the combination of Merriman and Jaye teaches that the advertising server 19 determines that the received profile information and the stored user profile (in database 54) are related to the same user computer (which operates the browser 16) by automatically reading a cookie on the user computer and sent to the advertising server 19 in message 23. This teaches "the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer," as required by claim 4.

276. Accordingly, as shown above, Merriman (and thus, the combination of Merriman and Jaye) teaches the additional limitations included in dependent claim 4, and renders claim 4 obvious to a POSITA.

4. Dependent 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 stored profile, the profile attributes used in targeting the advertisements."

277. Claim 5 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements." Ex. 1001, claim 5. As discussed above, claim 1, from which claim 5 depends, is taught by the combination of Merriman and Jaye.

278. Merriman teaches generating and storing an electronic record of which of the unaffiliated third parties contributed, to the stored profile, particular attributes. *See* Section XII.A.1.e, above. As I explained above with respect to limitation [1A], Merriman's website 12 is a web server controlled by one of a plurality of unaffiliated third parties. Ex. 1035, 3:30-38, 4:12-19. Merriman does describe website 12 being an "affiliate website" and being controlled by "affiliates," but as I explained above Merriman simply uses "affiliates" to reflect that there may be a contract between the party providing the website 12 and the party providing the advertising server 19. Ex.

1035, 2:59-3:4, 4:12-19. Also, nothing in Merriman indicates that the website 12 is owned or controlled by the same party that owns or controls the advertising server 19. Ex. 1035, 3:2-4, 3:16-18. Indeed, a POSITA would have understood that Merriman's website 12 and the advertising server 19 are not commonly owned and that the website 12 is controlled by an unaffiliated third party.

279. Merriman's database structure (the claimed "stored profile") is described as including, among other information, "pages on which the various users' advertisements were seen" and "which pages the user was viewing when the user clicked through along with other information." Ex. 1035, 4:44-55, FIG. 3A-3C. A POSITA would have understood that the information such as which individual pages a user has viewed and which pages a user has clicked ads on are the claimed "profile attributes," because said information represents the user's interests and can be used in targeted Internet advertising, as required by the claim. Ex. 1035, 4:44-55, FIG. 3A-3C. The website 12 that the user viewed and/or clicked ads on would be the unaffiliated third party that contributed the information. By storing which individual pages a user has viewed and which pages a user has clicked on (which are examples of the claimed "profile attributes") to the database structure (the claimed "stored profile"), Merriman teaches "electronically maintaining an electronic record" of which website 12 contributed the information (e.g., which individual pages a user

has viewed, which pages a user has clicked ads on, etc.) to the database structure. Ex. 1035, 4:44-55, FIG. 3A-3C.

280. Jaye also teaches "automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements." As I described above with respect to limitation [1A], Jaye's local server ID is provided to the enterprise server 16 via a URL redirect. Jaye further explains that once the local servers (which would have been owned and controlled by third-parties like the claimed "plurality of unaffiliated third part[ies]") upload information about the users' page accesses, the enterprise server 16 combines user information so that it is possible to correlate accesses by a particular user of web pages on one local server (e.g., local server 15) with accesses by the same user of web pages on another local server (e.g., local server 17). Ex. 1037, 5:5-11. Jaye also maintains a record for the user (the claimed "electronic record") containing the user's global ID, local ID, and "the site identifier for the local server that assigned the local ID." Ex. 1037, 8:23-28. By storing records (the claimed "electronic records") that include 1) the local ID and 2) the site identifier for the local server of an unaffiliated third party that make it possible to correlate access by a user of web pages on one local server with another, Jaye's system effectively stores a record of which local server contributed particular profile attributes to the global ID, based on

the user accessing a web page on particular local servers. Ex. 1037, 5:5-11, 8:23-28. Jaye also teaches providing portions of the global user profile to an advertiser, and thus teaches a POSITA to store a record of what portions (i.e., which attributes) were provided to the advertiser. Ex. 1037, 14:22-25. This is a record of which profile attributes are "used in targeting the advertisements" as claimed. And, this record together with the local server ID is "an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements," as claimed. That is, Jaye's database includes information informing a POSITA of which website contributed, to the user's global profile, the profile attributes provided to advertisers for use in targeted advertising.

281. Based on the foregoing teachings of Merriman and Jaye, a POSITA would have understood that at least the information in Merriman's PAGES ADS SEEN ON field or in the Merriman and Jaye combination's new "Party Providing Profile Info" field are each an electronic record of the party controlling website 12 that contributed the profile information (**orange**). The following drawing shows one example of the Merriman and Jaye combination where a separate "Party Providing Profile Info" field is added to Merriman's database structure in Figure 3A, which was first presented above. See Section XII.A.1.e, above.

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	Party Providing Profile Info
user16	X	X	X	X	X	X	X	website12/pageA	website12

Ex. 1035, FIG. 3A (modified)

282. A POSITA would have understood that any of the information in this data structure would have been used for targeted advertising. Ex. 1035, Abstract, 1:8-11, 2:40-45, 4:50-54, 5:50-60, 5:64-67, 6:6-11, 6:56-63, 8:47-56. Thus, the information in Merriman's PAGES ADS SEEN ON field or in the Merriman and Jaye combination's new "Party Providing Profile Info" field is an electronic record of the party controlling the website 12 that contributed, to the user profile, attributes of the profile information used in targeting the advertisements. This teaches the claimed "electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements." Moreover, this record is also automatically and electronically maintained by the advertising server 19 (the claimed "automatically with the computer system electronically maintaining…"), just as it is automatically generated. See Section XII.A.1.e, above.

283. To the extent that claim 5 requires a separate record from the record in limitation [1D], it would have been obvious to add, in database 54, a record indicating that attributes provided in profile information from website 12 were used for targeted advertising. Ex. 1037, 14:22-25. This record would have been obvious to enable the advertising server 19 to provide reports detailing where profile information came from and to reward (e.g., financially) websites (like website 12) for providing profile information that is desirable for targeted advertising. *Id.*; Ex.

1039, ¶¶ [0111] (describing payment for providing profiles), [0114] (describing compensation for providing information for a profile); Ex. 1045, Abstract, 4:60-5:12, 7:23-8:14. Indeed, Merriman teaches generating online reports with statistics about advertisements, users viewing them, and the matching criteria. Ex. 1035, 4:32-42, 8:32-37. Specifically, Merriman teaches that its advertising server 19 performs both a reporting process and an advertisement process. Ex. 1035, 4:20-24, 4:32-42, 6:6-11, 6:56-7:2, 7:15-31, 8:33-38. Merriman's advertisement process is used to provide advertisements to users by selecting which advertisement to send and transmitting the advertisement to the user's browser. Ex. 1035, 4:30-42.

284. As I explained above with respect to limitation [1E], Merriman teaches that the advertisements are selected based on the profile information stored at the database structure. After transmitting the advertisement, Merriman's advertising server 19 logs which advertisement was sent to the user and logs that the advertisement was clicked through, which user selected the advertisement, and the page on which the advertisement was seen. Ex. 1035, 7:15-31. Merriman describes that the information logged by the advertising server 19 can be used during the reporting process to generate "online reports about the success rate of the advertisement and statistics on the users that are viewing and clicking through on various advertisements." Ex. 1035, 4:30-42, 6:67-7:2, 7:15-31. The reports

generated by the reporting process include information related to the user's advertisement viewing habits. Ex. 1035, 8:33-38.

285. A POSITA would have been motivated to report where the attributes used for matching users with advertisements came from to give advertisers further insights. For example, it was known that determining the reliability of information (e.g., attributes used for matching users with advertisements) based on its source may be useful for determining a value for the information. Ex. 1039, ¶¶ [0049], [0074], FIG. 2. Advertisers would have desired a report of the source of attributes used for matching users with advertisements to determine, e.g., how much to pay for the attributes and/or for the opportunity to provide an advertisement to the user. Determining the source of information to be stored in a user profile database was also a known method of ensuring the validity (i.e., the reliability) of the information. Ex. 1043, Abstract, 7:48-60, 8:31-45; Ex. 1041, pp. 4, 11, 12, 31, 40-42, 73; Ex. 1040, ¶¶ [0061], [0070], [0116], [0137]-[0140], [0146]. A POSITA would have been motivated to report the source of the attributes used for matching users with advertisements to the advertisers so that the advertisers would trust the accuracy of the attributes. Also, adding a separate record indicating that attributes provided in profile information from the website 12 were used for targeted advertising would have been straightforward, just as generating other records in database 54 is straightforward. Ex. 1035, 8:51-56; Ex. 1037, 13:23-41.

286. Accordingly, as shown above, the combination of Merriman and Jaye teaches the additional limitations included in dependent claim 5, and renders claim 5 obvious to a POSITA.

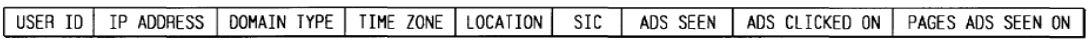
5. Dependent Claim 6: "The method of claim 1 further comprising automatically with the computer system electronically determining whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile."

287. Claim 6 of the '249 Patent depends from claim 1 and further requires "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 the stored profile." Ex. 1001, claim 6. As discussed above, claim 1, from which claim 6 depends, is taught by the combination of Merriman and Jaye. Additionally, as discussed in the Technical Background section (see Section VIII.B on databases), a POSITA would have known the use of database queries to determine whether received data contains any data that is not previously stored in the database when adding the received data to the database, and therefore would have used queries to determine "whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile," as set forth in the claim.

288. As I explained above with respect to limitations [1A] and [1B], Merriman teaches receiving profile information (the claimed "partial profile") and

storing the received profile information in a database structure and as part of a user profile (the claimed "stored profile"). Merriman's database structure in Figure 3A (reproduced below) includes a significant amount of profile information related to the user (the claimed "entity"), such as a user identification, IP address, location, and other information. Ex. 1035, 4:44-55, FIG. 3A.

FIG. 3A



Ex. 1035, FIG. 3A

289. A POSITA would have understood that Merriman's advertising server 19 also receives profile information for the same user from a plurality of websites like website 12. Ex. 1035, 2:8-36, 2:59-62, 8:63-9:4. In other words, a POSITA would have understood that although Merriman's Figure 1 shows only one website 12, other similar websites would be visited by the same user and therefore also provide information for the same user to be stored in the user's profile by the advertising server 19. In addition, for attributes of profile information from different websites to be stored in the same user profile, the advertising server 19 would have had to determine which attributes are not already in the user profile. For example, upon receiving new profile information indicating a new page an ad is seen on, the advertising server 19 would have determined that the new page is not in the user's profile. This is one example of how Merriman meets the claimed "determining

whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile."

290. Also, for attributes of profile information from different websites 12 to be stored on a user-by-user basis, the advertising server 19 would have to check whether attributes in received profile information for a user were already stored in that user's profile. Without performing this check, information would be overwritten or undesirably duplicated. As I described above at Section VIII.B, it was known to update data records (i.e., user profiles) without adding duplicate information. Ex. 1043, 8:4-15. A POSITA would have been motivated to avoid adding duplicate information to Merriman's database structures in order to limit the amount of storage space occupied by each user's profile. Accordingly, a POSITA would have been motivated to perform the check described above (to the extent it was not already part of the extant database technology used to implement Merriman's database 54) to ensure duplicate data is not being added when the received profile information is stored in Merriman's database structures. For example, if the user profile (**purple**) was as shown in the below drawing (which modifies Merriman's Figure 3A to include additional fields for BIRTHDATE and GENDER and a row for storing a profile for the user of Merriman's browser 16 (i.e., user16) as previously explained) when new profile information indicating the user's birthdate and gender was received, a POSITA would have understood (or at least

found it obvious) that the advertising server 19 would have determined that the user profile (**purple**) already contains the user's birthdate but does not contain the gender:

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	GENDER
user16	X	X	X	X	X	X	X	X	M/DD/YYYY	

Ex. 1035, FIG. 3A (modified)

In addition, each of the above steps would have been performed using extant database technology (See Section VIII.B).

291. At least from this example, it should be understood that the combination of Merriman and Jaye teaches that the advertising server 19 would have automatically and electronically determined whether the received profile information contains any profile attributes about the user of Merriman's browser 16 that were not previously contained in the user's profile. This meets the claimed "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 the stored profile."

292. Accordingly, as shown above, Merriman (and thus, the combination of Merriman and Jaye) teaches the additional limitations included in dependent claim 6, and renders claim 6 obvious to a POSITA.

6. Dependent 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."

293. Claim 10 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection." Ex. 1001, claim 10. As discussed above, claim 1, from which claim 10 depends, is taught by the combination of Merriman and Jaye.

294. As I explained above with respect to limitation [1C], Merriman in combination with Jaye teaches the claimed "URL redirection." As further explained above, the combination of Merriman and Jaye teaches that the user's browser 16 receives a message 22 from the website 12, and subsequently the advertising server 19 receives a message 23 "as a result of the URL redirection." Merriman describes that the message 23 sent to the advertising server 19 includes a cookie, from the cookie-enabled browser 16 (the claimed "cookie previously stored on the entity's computer"), that would include cookie information, such as the user's identification number. Ex. 1035, 3:41-52, 5:19-21. It would have been obvious to a POSITA that in order to access the user's identification number (or any other information included in the cookie), the advertising server 19 necessarily reads the cookie. *Id*.

295. Jaye also teaches the limitations of claim 10. Jaye describes that its local servers assign persistent state information to the client 12 in the form of a local

ID, and that these IDs are "made persistent using cookies." Ex. 1037, 5:49-58. Jaye's local servers "set" the cookie for the client 12, which a POSITA would have understood includes storing the cookie on the client 12 (the claimed "cookie previously stored on the entity's computer"). For example, it was well known at the time of the alleged invention that cookies could be stored on a user's browser/computer (such as Jaye's client 12) in order to identify the browser to a website (such as a website provided by Jaye's local servers) when the user accesses a website. *See* Section VIII.C, above. A POSITA would have also understood that when Jaye's local servers communicate with the enterprise server to exchange information about the users' page usage (e.g., via a URL redirect, as I described above with respect to limitation [1C]), Jaye's enterprise server 16 (similar to Merriman's advertising server 19) would necessarily read the cookie in order to identify the user. Ex. 1037, 3:23-40, 5:5-48, 8:1-14.

296. Thus, the combination of Merriman and Jaye further teaches the advertising server 19 automatically and electronically reading a cookie previously stored on the user's computer, as a result of the URL redirection. This meets the claimed "automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection."

297. Accordingly, as shown above, the combination of Merriman and Jaye teaches the additional limitations included in dependent claim 10, and renders claim 10 obvious to a POSITA.

7. Independent Claim 11

a) [11PRE]: "A computer system coupled to a global computer network and programmed to perform an automated method of collecting profiles of Internet-using entities, the computer system having access to a storage device, the method performed by the programmed computer system comprising:"

298. This preamble is similar to the preamble of claim 1, but also includes parts of limitation [1A]. A POSITA would have understood that Merriman teaches this preamble for similar reasons that it teaches the preamble of claim 1 (limitation [1PRE]) and limitation [1A]. See Sections XII.A.1.a-b, above. Specifically, Merriman teaches the advertising server 19 coupled to the Internet and programmed to perform an automated method of collecting profiles of users using browsers, such as the browser 16, to access websites over the Internet. Ex. 1035, Abstract, 1:8-11, 2:1-14, 2:37-45, 2:65-3:28, 4:20-27, 4:43-54, 7:46-56, 8:51-56, claims 36-39, 42-50, FIGs. 1 and 3A. Merriman's advertising server 19 has access to the database 54. Ex. 1035, 4:20-24, FIG. 2. Merriman's method, as modified based on Jaye, would have been performed by Merriman's advertising server 19 and comprises the steps in limitations [11A]-[11E]. *See* Sections XII.A.7.b-f, below. Thus, the combination of Merriman and Jaye teaches limitation [11PRE].

b) [11A]: "(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

299. Limitation [11A] is nearly identical to limitation [1A] and is met for the same reasons as those discussed above. See Section XII.A.1.b, above.

c) [11B]: "(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;"

300. Limitation [11B] is nearly identical to limitation [1B] and is met for the same reasons as those discussed above. See Section XII.A.1.c, above.

d) [11C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

301. Limitation [11C] is nearly identical to limitation [1C] and is met for the same reasons as those discussed above. See Section XII.A.1.d, above.

e) **[11D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"**

302. Limitation [11D] is nearly identical to limitation [1D] and is met for the same reasons as those discussed above. See Section XII.A.1.e, above.

f) **[11E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."**

303. Limitation [11E] is nearly identical to limitation [1E] and is met for the same reasons as those discussed above. See Section XII.A.1.f, above.

8. Independent Claim 21

a) **[21PRE]: "A tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform an automated method of collecting profiles of Internet-using entities, wherein the computer system is coupled to a global computer network and has access to a storage device, the method performed according to the instructions comprising:"**

304. This preamble is similar to the preamble of claim 1, but also includes parts of limitation [1A]. A POSITA would have understood that Merriman teaches this preamble for similar reasons that it teaches the preamble of claim 1 (limitation [1PRE]) and limitation [1A]. See Sections XII.A.1.a-b, above. Specifically, Merriman teaches the advertising server 19 programmed to perform an automated method of collecting profiles of users using browsers, such as the browser 16, to access websites over the Internet. Ex. 1035, Abstract, 1:8-11, 2:1-14, 2:37-45, 2:65-

3:28, 4:20-27, 4:43-54, 7:46-56, 8:51-56, claims 36-39, 42-50, FIGs. 1 and 3A. Further, Merriman teaches that the advertising server 19's processes are implemented on a computer platform. Ex. 1035, 9:8-16. A computer platform is a combination of processing, memory and storage hardware, operating system, development tools, connectivity options etc. that work together to support the execution of software on a device or architecture. All of these components provide essential resources and capabilities for developers and users to interact with the computer system effectively. This teaches a POSITA that Merriman includes "[a] tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform" its method. Merriman's advertising server 19 is also coupled to the Internet and has access to the database 54. Ex. 1035, Abstract, 3:6-18, 3:24-28, 4:12-24, 8:47-60, FIG. 2.

305. Merriman's method, as modified based on Jaye, would have been performed by Merriman's advertising server 19 and comprises the steps in limitations [21A]-[21E]. *See* Sections XII.A.8.b-f, below. Thus, the combination of Merriman and Jaye teaches limitation [21PRE].

b) [21A]: "(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

306. Limitation [21A] is nearly identical to limitation [1A] and is met for the same reasons as those discussed above. See Section XII.A.1.b, above.

c) [21B]: "(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;"

307. Limitation [21B] is nearly identical to limitation [1B] and is met for the same reasons as those discussed above. See Section XII.A.1.c, above.

d) [21C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

308. Limitation [21C] is nearly identical to limitation [1C] and is met for the same reasons as those discussed above. See Section XII.A.1.d, above.

e) [21D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"

309. Limitation [21D] is nearly identical to limitation [1D] and is met for the same reasons as those discussed above. See Section XII.A.1.e, above.

f) [21E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."

310. Limitation [21E] is nearly identical to limitation [1E] and is met for the same reasons as those discussed above. See Section XII.A.1.f, above.

9. Dependent Claims 13-16, 20, and 23-25

311. Each of dependent claims 13-16, 20, and 23-25 corresponds to one of claims 3-6 and 10. As such, I have not repeated all of the analysis from above for claims 13-16, 20, and 23-25. Instead, I have prepared the following table to show the claim language side-by-side and to address the minor differences. Specifically, the following table shows how dependent claims 13-16, 20, and 23-25 are taught by the prior art for the same reasons that claims 3-6 and 10 are taught by the prior art.

Claims 3-6 and 10	Claims 13-16, 20, and 23-25	Comparison
[3] The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile	[13] The computer system of claim 11 wherein part (b) comprises the computer system adding the received partial profile	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 13 is

believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	taught for the same reasons as claim 3. *See* Section XII.A.2, above.
[4] The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	[14] The computer system of claim 13 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 14 is taught for the same reasons as claim 4. *See* Section XII.A.3, above.
[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 stored profile, the profile attributes used in targeting the advertisements.	[15] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 15 is taught for the same reasons as claim 5. *See* Section XII.A.4, above.

[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 the stored profile.	[16] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises 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 the stored profile.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 16 is taught for the same reasons as claim 6. *See* Section XII.A.5, above.
[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.	[20] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 20 is taught for the same reasons as claim 10. *See* Section XII.A.6, above.
[3] The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the	[23] The data storage medium of claim 21 wherein part (b) comprises the computer system adding the received partial profile to a stored profile	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 23 is taught for the same

same entity on account of the received partial profile and the stored profile being related to the same user computer.	believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	reasons as claim 3. *See* Section XII.A.2, above.
[4] The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	[24] The data storage medium of claim 23 wherein instructions cause the computer system to determine that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 24 is taught for the same reasons as claim 4. *See* Section XII.A.3, above.
[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 stored profile, the profile attributes used in targeting the advertisements.	[25] The data storage medium of claim 21 wherein the automatic method performed according to the instructions further comprises automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 25 is taught for the same reasons as claim 5. *See* Section XII.A.4, above.

B. Merriman In View Of Minor

312. A POSITA would have also found it obvious to combine Merriman with Minor. Minor teaches another technique for transferring profile information from one website server to another. Ex. 1038, Abstract, 2:44-57. Specifically, Minor teaches a transparent redirect (**magenta arrows**) including a URL and encrypted demographic information from website 32A (**red**) via end-user computer 30 (**blue**) to remote website 34A (**green**). Ex. 1038, 4:2-28, 5:61-6:5, 7:22-44, 7:59-8:6, FIGs. 2-6.

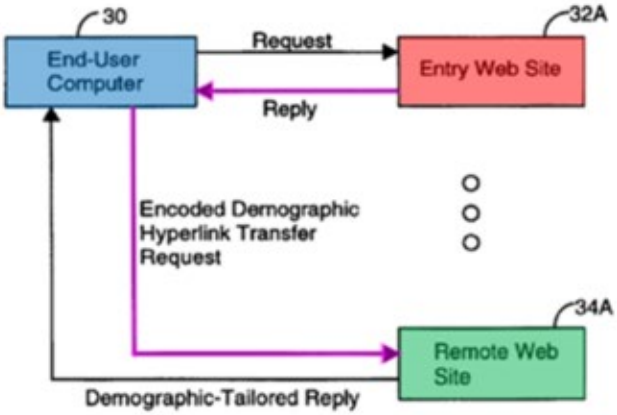


Figure 2

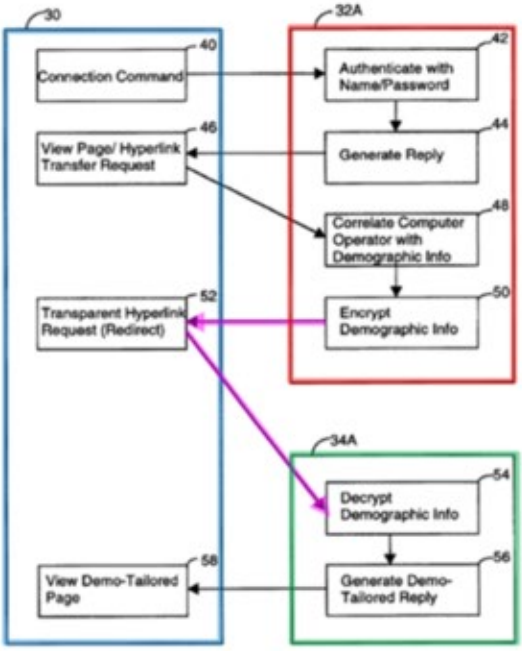


Figure 3

Ex. 1038, FIGs. 2 (left) and 3 (right) (both annotated)

313. It would have been obvious to combine Merriman's system and Minor's teachings of passing demographic information through a transparent

redirect. Ex. 1035, 3:24-4:54; Ex. 1038, 4:19-28, 5:61-6:5. For example, it would have been obvious to implement or modify Merriman's system such that website 12 sends message 22 for providing a webpage including a portion having a transparent redirect (as taught by Minor) that causes the browser 16 to send message 23, including encrypted demographic information, to advertising server 19, which in turn adds the demographic information to the user's profile. Ex. 1035, 4:43-50; Ex. 1038, 4:50-53. The following drawing illustrates an example of the combination of Merriman and Minor using Merriman's Figure 1 (below right) and Minor's Figure 2 (below left).

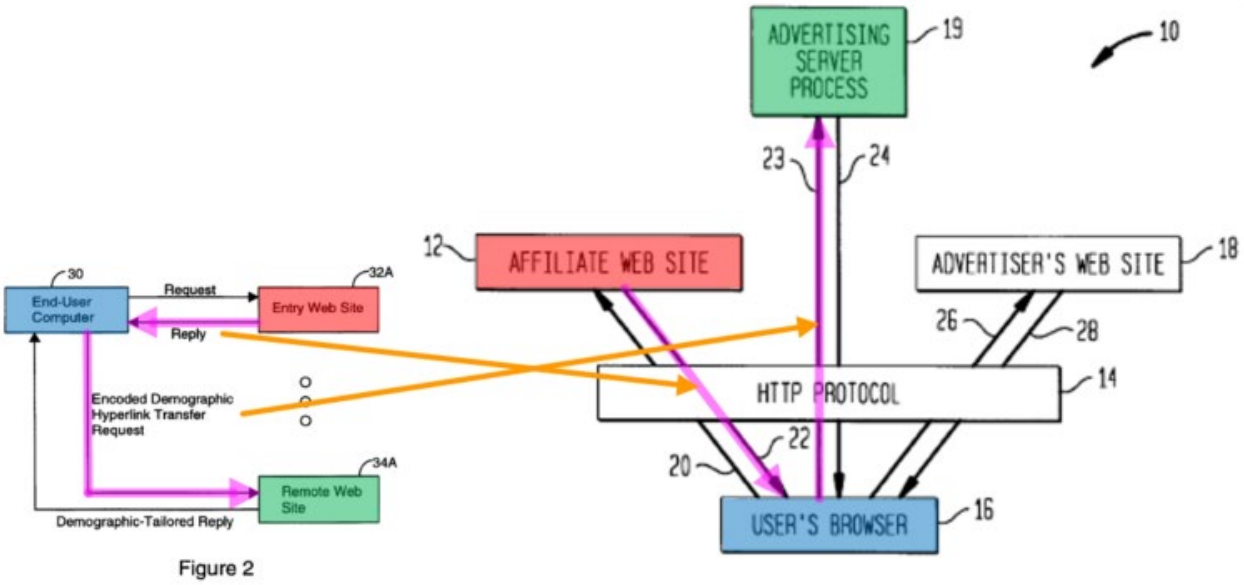
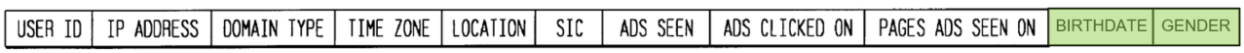


Figure 2

314. As this illustration shows and as a POSITA would have understood, the Request message from the end-user computer 30 to the entry website 32A in Minor corresponds to the message 20 in Merriman, the Reply message from the entry website 32A to the end-user computer 30 in Minor corresponds to the message 22 in

Merriman, the encoded demographic hyperlink transfer request in Minor corresponds to the message 23 in Merriman, and the demographic-tailored reply in Minor corresponds to the message 24 in Merriman. These similarities would have led a POSITA to the proposed combination of Merriman and Minor. As shown above, the combination of Merriman and Minor teaches a method and system in which advertising server 19 (**green**) receives demographic information (**orange**) from website 12 (**red**) as a result of automatic electronic URL redirection (**magenta arrows**) from a portion of a webpage accessed by user's browser 16 (**blue**). Merriman's data structure would also have been modified to store the demographic information. Ex. 1035, 4:43-54, FIG. 3A; Ex. 1038, 4:50-53, 6:10-17. For example, Merriman's data structure would have been modified to include BIRTHDATE and GENDER fields to capture such demographic information. This is shown in the following drawing which modifies Merriman's Figure 3A to add BIRTHDATE and GENDER fields (**light green**) to the data structure. A POSITA would have understood that this feature is easily implemented in a standard database. See Section VIII.B.

FIG. 3A



Ex. 1035, FIG. 3A (modified)

315. The combination of Merriman and Minor is obvious for similar reasons that the combination of Merriman and Jaye is obvious (e.g., to pass profile information in real-time for immediate use in targeted advertising). *See* Section XII.A, above. Minor also teaches that its technique is advantageous because it is simple, efficient (relative to the slower process of establishing a separate link between servers), and keeps demographic information private. Ex. 1038, 2:21-41, 2:58-3:8. These express advantages would have led a POSITA to the combination of Merriman and Minor.

1. Independent Claim 1

a) [1PRE]: "An automated method of collecting profiles of Internet-using entities, the method comprising:"

316. The combination of Merriman and Minor teaches limitation [1PRE] for the same reasons the combination of Merriman and Jaye does. *See* Section XII.A.1.a, above. Merriman's method, as modified based on Minor, comprises limitations [1A]-[1E]. *See* Sections XII.B.1.b-f, below. Thus, the combination of Merriman and Minor teaches limitation [1PRE].

b) [1A]: "(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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

317. As discussed above, Merriman teaches the basic structure set forth in limitation [1A]. See Section XII.A.1.b, above.

318. The combination of Merriman and Minor maintains Merriman's system components, but modifies Merriman's operation in a manner teaching the rest of limitation [1A]. Merriman's website 12 already sends message 22 to cause browser 16 to send message 23 to advertising server 19. Ex. 1035, 3:28-57. In the combination of Merriman and Minor, messages 22 and 23 include demographic information (the claimed "partial profile") about the user of browser 16 and the URL for advertising server 19. The following drawing (which was first shown above) illustrates an example of the combination of Merriman and Minor using Merriman's Figure 1 (below right) and Minor's Figure 2 (below left).

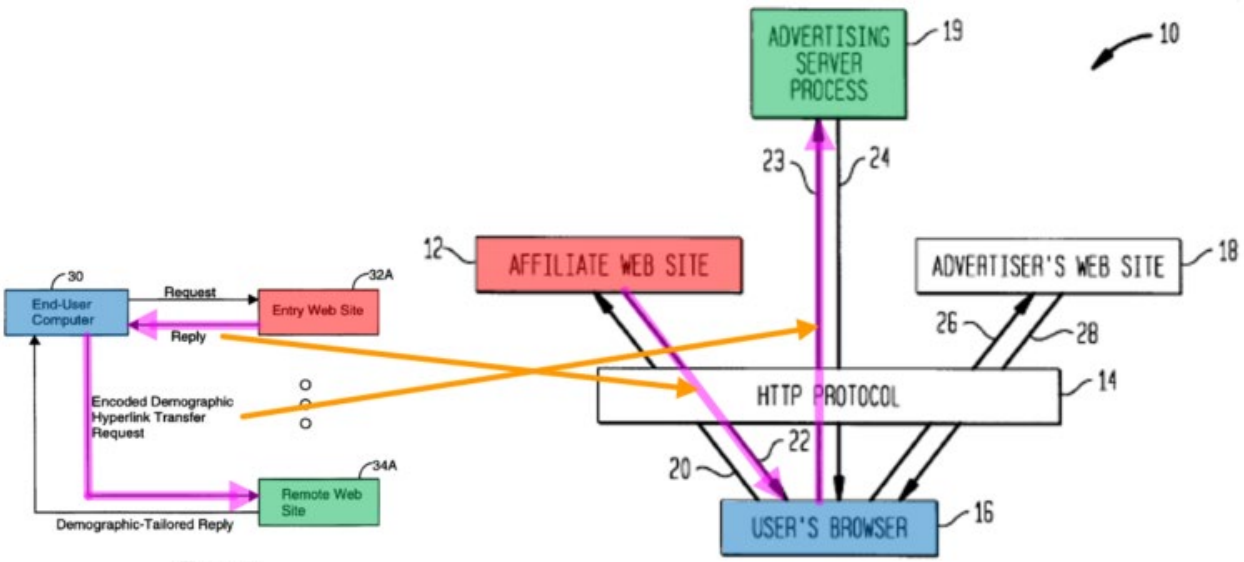


Figure 2

319. Thus, the combination of Merriman and Minor teaches electronically receiving, at advertising server 19 (**green**) from website 12 (**red**), demographic information of the user (the claimed "electronically receiving at a programmed computer system…from at least one server…, a partial profile of an entity").

320. Further, the demographic information in Merriman and Minor contains at least one attribute related to the user of browser 16 (the claimed "contains at least one profile attribute related to the entity"), and is stored by website 12 (like Minor's website 32A) and therefore available (e.g., electronically available) to the party controlling website 12 (the claimed "available to one of the third parties"). Ex. 1038, 3:45-55, 6:35-37.

321. Accordingly, the combination of Merriman and Minor teaches electronically receiving at advertising server 19 coupled to the Internet, from website 12, demographic information of a user that uses browser 16 coupled to the Internet

and accessing website 12, which demographic information is available to the party controlling website 12 and contains at least one attribute related to the user. This teaches the claimed "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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity." Thus, the combination of Merriman and Minor teaches limitation [1A].

c) [1B]: "(b) automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity;"

322. Merriman discloses advertising server 19 (the claimed "computer system") maintaining a database structure for storing a user profile (the claimed "electronically stored profile"). Ex. 1035, 3:41-52, 3:64-4:8, 4:20-24, 4:43-54, FIG. 3A. In the combination of Merriman and Minor, a POSITA would have configured the advertising server 19 to automatically (with no human control (see Section XI.E above)) add the received demographic information (e.g., birthdate and gender attributes) to the corresponding user profile for a user ("user16") in Merriman's database structure, which would have been modified to store such demographic

information. Ex. 1035, 4:43-54, FIG. 3A. This is shown in the following drawing which modifies Merriman's Figure 3A to add BIRTHDATE and GENDER fields and a row with data to show the user profile (**purple**) for the user of browser 16. A POSITA would have understood that this feature is easily implemented in a standard database. See Section VIII.B.

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	GENDER
user16	X	X	X	X	X	X	X	X	M/D/YYYY	male

Ex. 1035, FIG. 3A (modified)

323. Thus, the combination of Merriman and Minor teaches advertising server 19 automatically and electronically storing the received demographic information (**orange**) by adding it to the user profile (**purple**) for the user of browser 16. This teaches the claimed "automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity." Thus, the combination of Merriman and Minor teaches limitation [1B].

d) [1C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

324. Merriman teaches that message 22 includes a URL embedded in an image tag within a webpage of website 12 accessed by the user computer operating

browser 16 (the claimed "from a portion of a page of the website accessed by the user computer") and the URL causes transmission of message 23 to advertising server 19 (the claimed "automatic electronic URL redirection"). *See* Section XII.A.1.d, above. Minor similarly teaches automatic electronic URL redirection, but Minor further includes demographic information in its transparent redirect. Ex. 1038, 4:2-28, 5:61-6:5, 7:22-44, 7:59-8:6, FIGs. 2-6.

325. In the combination of Merriman and Minor (as shown in the example illustration reproduced again below), the same messages 22 and 23 of Merriman are communicated, but with demographic information in addition to the URL.

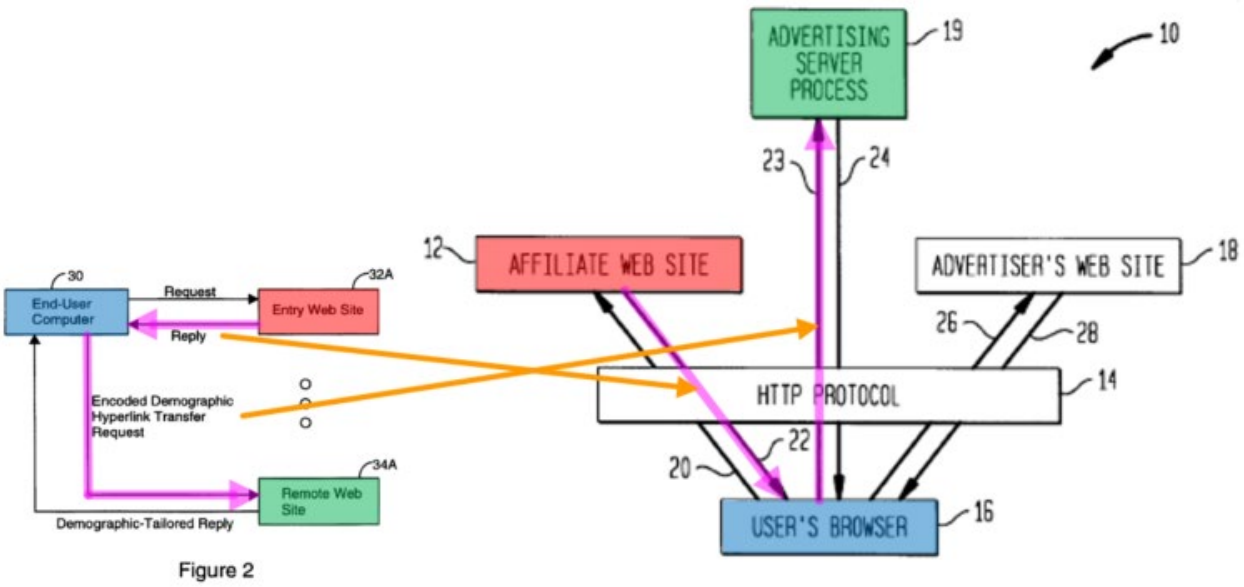


Figure 2

326. Thus, the combination of Merriman and Minor teaches that receiving the profile information (by advertising server 19 from website 12 in accordance with limitation [1A]) is achieved as a result of automatic electronic URL redirection from a portion of a webpage of website 12 accessed by the user computer operating

browser 16. This teaches the claimed "wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer." Thus, the combination of Merriman and Minor teaches limitation [1C].

e) [1D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"

327. Merriman teaches limitation [1D] because a POSITA would have understood that the advertising server 19 (the claimed "computer system") automatically (with no human control (see Section XI.E above)) generates information for the PAGES ADS SEEN ON field (the claimed "electronic record"), which indicates the party controlling website 12 that contributed the profile information (e.g., the particular webpage the user visited) to the user profile. *See* Section XII.A.1.e, above. The combination of Merriman and Minor maintains these features and thus teaches limitation [1D] for the same reasons.

328. Further, it would have been obvious to modify Merriman's data structure to include an additional field for storing the source (**light blue**) of the demographic information (**orange**). This is shown in the following drawing which modifies Merriman's Figure 3A to add BIRTHDATE, GENDER, and SOURCE fields and a row with data for the user profile of the user of browser 16 ("user16").

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	GENDER	SOURCE
user16	x	x	x	x	x	x	x	x	M/D/YYYY	male	website12

Ex. 1035, FIG. 3A (annotated)

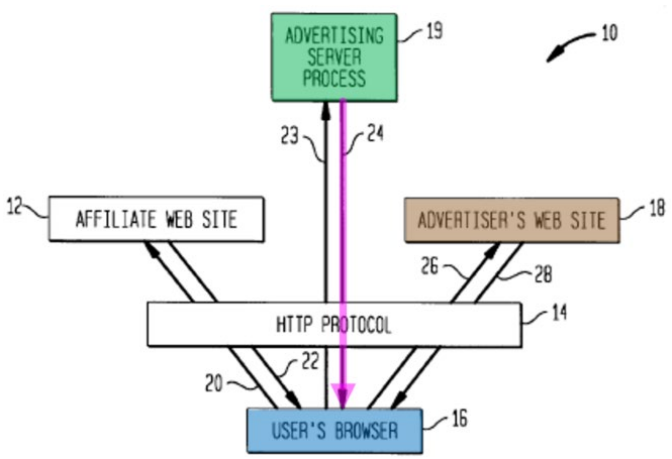
329. In the combination of Merriman and Minor, Merriman's website 12 provides the demographic information to advertising server 19, so a record (e.g., "website12") indicating website 12 as the source would have been automatically generated in Merriman's data structure. A POSITA would have been motivated to store the source of the demographic information to reward the source for providing the demographic information thereby incentivizing sources to provide sensitive demographic information, which is desirable to advertisers. Ex. 1039, ¶¶ [0111] (describing payment for providing profiles), [0114] (describing compensation for providing information for a profile); Ex. 1045, Abstract, 4:60-5:12, 7:23-8:14. This source record would have also allowed advertising server to determine the reliability of the demographic information, which would have been a factor in using the demographic information for targeted advertising. Ex. 1039, ¶¶ [0074]-[0075]; Ex. 1043, Abstract, 1:43-47, 1:51-63, 7:48-60, 8:37-45, 9:50-10:32. For example, a POSITA would have been motivated to provide advertisers with a record of the source of information to determine the reliability so that the advertisers may, e.g., determine a payment amount for the information, or determine whether to trust the information before using it to match an advertisement to the user. *Id.* Recording the

source of the demographic information would have merely involved straightforward database usage and management processes that were well-within the skill level of a POSITA. Ex. 1043, 2:50-67, 7:36-8:46, 9:50-10:32.

330. Accordingly, the combination of Merriman and Minor teaches advertising server 19 automatically generating an electronic record indicating the source of the demographic information (which in the example above is the party controlling website 12 that contributed the demographic information) added to the user profile. This teaches the claimed "automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes." Thus, the combination of Merriman and Minor teaches limitation [1D].

f) [1E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."

331. As explained above in Section XII.A.1.f, Merriman teaches limitation [1E] because advertising server 19 (**green**) uses data in the user profile to deliver, in message 24 (**magenta**), targeted advertisements for third-party advertisers 18 (**brown**) to the user computer operating browser 16 (**blue**) over the Internet. Ex. 1035, 2:59-3:63, FIG. 1.



Ex. 1035, FIG. 1 (annotated)

332. The combination of Merriman and Minor maintains these features and thus teaches limitation [1E] for the same reasons. Specifically, the combination of Merriman and Minor teaches that the user profile (stored in database 54), including the added demographic information (received from website 12), comprises data used in targeting advertisements for advertisers 18 to the user computer operating browser 16 over the Internet. This teaches the claimed "wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network." Finally, because the combination of Merriman and Minor teaches all limitations of claim 1, it is my opinion that claim 1 would have been obvious to a POSITA.

2. Dependent Claim 3: "The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer."

333. Claim 3 of the '249 Patent depends from claim 1 and further requires "wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer." Ex. 1001, claim 3. A POSITA would have understood that this feature is easily implemented in a standard database. See Section VIII.B. As discussed above, claim 1, from which claim 3 depends, is taught by the combination of Merriman and Minor.

334. As I discussed above at Section XII.A.2, the combination of Merriman and Jaye teaches the limitations of claim 3. The combination of Merriman and Minor teaches claim 3 for the same reasons the combination of Merriman and Jaye teaches claim 3. *See* Section XII.A.2, above. Advertising server 19 adds the received demographic information to the user profile stored in database 54 on account of the received demographic information and the user profile being related to the same user computer operating browser 16. *See* Section XII.B.1.c, above; Ex. 1035, 8:66-9:4.

335. Accordingly, the combination of Merriman and Minor teaches the additional limitations included in dependent claim 3, and renders claim 3 obvious to a POSITA.

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

336. Claim 4 of the '249 Patent depends from claim 3 and further requires "wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer." Ex. 1001, claim 4. As discussed above, claim 3, from which claim 4 depends, is taught by the combination of Merriman and Minor.

337. As I discussed above at Section XII.A.3, the combination of Merriman and Jaye teaches the limitations of claim 4. The combination of Merriman and Minor teaches claim 4 for the same reasons the combination of Merriman and Jaye teaches claim 4. *See* Section XII.A.3, above. The combination of Merriman and Minor preserves Merriman's message 23 including a cookie that contains the user identification. Ex. 1035, 3:43-52, 5:11-29. Thus, the combination of Merriman and Minor teaches the advertising server 19 determining that the received demographic information and stored user profile are related to the same user computer (operating browser 16) by automatically reading a cookie on the user computer (the claimed "the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer").

338. Accordingly, the combination of Merriman and Minor teaches the additional limitations included in dependent claim 4, and renders claim 4 obvious to a POSITA.

4. Dependent 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 stored profile, the profile attributes used in targeting the advertisements."

339. Claim 5 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements." Ex. 1001, claim 5. As discussed above, claim 1, from which claim 5 depends, is taught by the combination of Merriman and Minor.

340. As I discussed above at Section XII.A.4, the combination of Merriman and Jaye teaches the limitations of claim 5. The combination of Merriman and Minor teaches claim 5 for the same reasons the combination of Merriman and Jaye teaches claim 5. *See* Section XII.A.4, above. That is, the information in Merriman's PAGES ADS SEEN ON field is an electronic record of the party controlling website 12 that contributed, to the user profile, attributes of the demographic information used in targeting the advertisements.

341. Further, the combination of Merriman and Minor would have also included a separate record, in database 54, for indicating which website (like website 12) contributed, to the user profile, the demographic information used in targeting the advertisements. This record would have been obvious to enable advertising server 19 to provide reports detailing where useful or desirable demographic information came from and to reward (e.g., financially) websites (like website 12) for providing demographic information that is useful or desirable for targeted advertising. Indeed, Merriman teaches generating online reports with statistics about advertisements, users viewing them, and the matching criteria. Ex. 1035, 4:32-42, 8:32-37. A POSITA would have been motivated to report where the attributes used for matching users with advertisements came from to give advertisers further insights. Also, adding such record would have been straightforward, just as generating other records in database 54 is straightforward.

342. Accordingly, the combination of Merriman and Minor teaches the additional limitations included in dependent claim 5, and renders claim 5 obvious to a POSITA.

5. Dependent 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 the stored profile."

343. Claim 6 of the '249 Patent depends from claim 1 and further requires "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 the stored profile." Ex. 1001, claim 6. As discussed above, claim 1, from which claim 6 depends, is taught by the combination of Merriman and Minor. Additionally, as discussed in the Technical Background section (see Section VIII.B on databases), a POSITA would have known the use of database queries to determine whether received data contains any data that is not previously stored in the database when adding the received data to the database, and therefore would have used queries to determine "whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile," as set forth in the claim.

344. As I discussed above at Section XII.A.5, the combination of Merriman and Jaye teaches the limitations of claim 6. The combination of Merriman and Minor teaches claim 6 for the same reasons the combination of Merriman and Jaye teaches claim 6. *See* Section XII.A.5, above. For attributes of demographic information from different websites 12 to be stored on a user-by-user basis, advertising server 19

would have to check whether attributes in received demographic information for a user were already stored in that user's profile. Without performing this check, information would be overwritten or undesirably duplicated. As I described above at Section VIII.B, it was known to update data records (i.e., user profiles) without adding duplicate information. Ex. 1043, 8:4-15. A POSITA would have been motivated to avoid adding duplicate information to Merriman's database structures in order to limit the amount of storage space occupied by each user's profile. Accordingly, a POSITA would have been motivated to perform the check described above (to the extent it was not already part of the extant database technology used to implement Merriman's database 54) to ensure duplicate data is not being added when the received profile information is stored in Merriman's database structures. For example, if the user profile (**purple**) was as shown in the below drawing (which modifies Merriman's Figure 3A to include additional fields for BIRTHDATE and GENDER and a row for storing a profile for the user of Merriman's browser 16 (i.e., user16) as previously explained) when new demographic information indicating the user's birthdate and gender was received, a POSITA would have understood (or at least found it obvious) that Merriman's advertising server 19 would have determined that the user profile (**purple**) already contains the user's birthdate but does not contain the gender.

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	GENDER
user16	X	X	X	X	X	X	X	X	M/DD/YYYY	

Ex. 1035, FIG. 3A (modified)

In addition, each of the above steps would have been performed using extant database technology (See Section VIII.B).

345. Thus, the combination of Merriman and Minor teaches advertising server automatically and electronically determining whether the received demographic information contains any profile attributes about the user of browser 16 that were not previously contained in the user's profile. This teaches the claimed "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 the stored profile."

346. Accordingly, the combination of Merriman and Minor teaches the additional limitations included in dependent claim 6, and renders claim 6 obvious to a POSITA.

6. Dependent 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."

347. Claim 10 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system electronically reading a cookie previously

stored on the entity's computer, as a result of the URL redirection." Ex. 1001, claim 10. As discussed above, claim 1, from which claim 10 depends, is taught by the combination of Merriman and Minor.

348. As I discussed above at Section XII.A.6, the combination of Merriman and Jaye teaches the limitations of claim 10. The combination of Merriman and Minor teaches claim 10 for the same reasons the combination of Merriman and Jaye teaches claim 10. *See* Section XII.A.6, above. In the combination of Merriman and Minor, the advertising server 19 still automatically and electronically reads Merriman's cookie previously stored by browser 16 on the user's computer, as a result of the URL redirection. This teaches the claimed "automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection."

349. Accordingly, the combination of Merriman and Minor teaches the additional limitations included in dependent claim 10, and renders claim 10 obvious to a POSITA.

7. Independent Claim 11

a) [11PRE]: "A computer system coupled to a global computer network and programmed to perform an automated method of collecting profiles of Internet-using entities, the computer system having access to a storage device, the method performed by the programmed computer system comprising:"

350. This preamble is similar to the preamble of claim 1, but also includes parts of limitation [1A]. A POSITA would have understood that Merriman teaches this preamble for similar reasons that it teaches the preamble of claim 1 (limitation [1PRE]) and limitation [1A]. See Sections XII.B.1.a-b, above. Specifically, Merriman teaches the advertising server 19 coupled to the Internet and programmed to perform an automated method of collecting profiles of users using browsers, such as the browser 16, to access websites over the Internet. Ex. 1035, Abstract, 1:8-11, 2:1-14, 2:37-45, 2:65-3:28, 4:20-27, 4:43-54, 7:46-56, 8:51-56, claims 36-39, 42-50, FIGs. 1 and 3A. Minor further evidences that Merriman's advertising server 19 (similar to Minor's website servers 32A, 34A) is programmed. Ex. 1038, 6:29-58, 7:50-54, 10:4-65, FIG. 4. Merriman's advertising server 19 also has access to the database 54. Ex. 1035, 4:20-24, FIG. 2. Merriman's method, as modified based on Minor, would have been performed by Merriman's advertising server 19 and comprises the steps in limitations [11A]-[11E]. *See* Sections XII.B.7.b-f, below. Thus, the combination of Merriman and Minor teaches limitation [11PRE].

b) [11A]: "(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

351. Limitation [11A] is nearly identical to limitation [1A] and is met for the same reasons as those discussed above. See Section XII.B.1.b, above.

c) [11B]: "(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;"

352. Limitation [11B] is nearly identical to limitation [1B] and is met for the same reasons as those discussed above. See Section XII.B.1.c, above.

d) [11C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

353. Limitation [11C] is nearly identical to limitation [1C] and is met for the same reasons as those discussed above. See Section XII.B.1.d, above.

e) **[11D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"**

354. Limitation [11D] is nearly identical to limitation [1D] and is met for the same reasons as those discussed above. See Section XII.B.1.e, above.

f) **[11E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."**

355. Limitation [11E] is nearly identical to limitation [1E] and is met for the same reasons as those discussed above. See Section XII.B.1.f, above.

8. Independent Claim 21

a) **[21PRE]: "A tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform an automated method of collecting profiles of Internet-using entities, wherein the computer system is coupled to a global computer network and has access to a storage device, the method performed according to the instructions comprising:"**

356. This preamble is similar to the preamble of claim 1, but also includes parts of limitation [1A]. A POSITA would have understood that Merriman teaches this preamble for similar reasons that it teaches the preamble of claim 1 (limitation [1PRE]) and limitation [1A]. See Sections XII.B.1.a-b, above. Specifically, Merriman teaches the advertising server 19 programmed to perform an automated method of collecting profiles of users using browsers, such as the browser 16, to access websites over the Internet. Ex. 1035, Abstract, 1:8-11, 2:1-14, 2:37-45, 2:65-

3:28, 4:20-27, 4:43-54, 7:46-56, 8:51-56, claims 36-39, 42-50, FIGs. 1 and 3A. Further, Merriman teaches that the advertising server 19's processes are implemented on a computer platform. Ex. 1035, 9:8-16. A computer platform is a combination of processing, memory and storage hardware, operating system, development tools, connectivity options etc. that work together to support the execution of software on a device or architecture. All of these components provide essential resources and capabilities for developers and users to interact with the computer system effectively. This teaches a POSITA that Merriman includes "[a] tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform" its method. Minor further evidences that Merriman's advertising server 19 (similar to Minor's website servers 32A, 34A) includes a storage medium storing computer instructions and processor(s) for executing those instructions. Ex. 1038, 6:29-58, 7:50-54, 10:4-65, FIG. 4. Merriman's advertising server 19 is also coupled to the Internet and has access to the database 54. Ex. 1035, Abstract, 3:6-18, 3:24-28, 4:12-24, 8:47-60, FIG. 2.

357. Merriman's method, as modified based on Minor to include encrypted demographic information in the URL redirection messages 22 and 23, would have been performed by Merriman's advertising server 19 and comprises the steps in limitations [21A]-[21E]. *See* Sections XII.B.8.b-f, below. Thus, the combination of Merriman and Minor teaches limitation [21PRE].

b) [21A]: "(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

358. Limitation [21A] is nearly identical to limitation [1A] and is met for the same reasons as those discussed above. See Section XII.B.1.b, above.

c) [21B]: "(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;"

359. Limitation [21B] is nearly identical to limitation [1B] and is met for the same reasons as those discussed above. See Section XII.B.1.c, above.

d) [21C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

360. Limitation [21C] is nearly identical to limitation [1C] and is met for the same reasons as those discussed above. See Section XII.B.1.d, above.

e) [21D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"

361. Limitation [21D] is nearly identical to limitation [1D] and is met for the same reasons as those discussed above. See Section XII.B.1.e, above.

f) [21E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."

362. Limitation [21E] is nearly identical to limitation [1E] and is met for the same reasons as those discussed above. See Section XII.B.1.f, above.

9. Dependent Claims 13-16, 20, and 23-25

363. Each of dependent claims 13-16, 20, and 23-25 corresponds to one of claims 3-6 and 10. As such, I have not repeated all of the analysis from above for claims 13-16, 20, and 23-25. Instead, I have prepared the following table to show the claim language side-by-side and to address the minor differences. Specifically, the following table shows how dependent claims 13-16, 20, and 23-25 are taught by the prior art for the same reasons that claims 3-6 and 10 are taught by the prior art.

Claims 3-6 and 10	Claims 13-16, 20, and 23-25	Comparison
[3] The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile	[13] The computer system of claim 11 wherein part (b) comprises the computer system adding the received partial profile	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 13 is

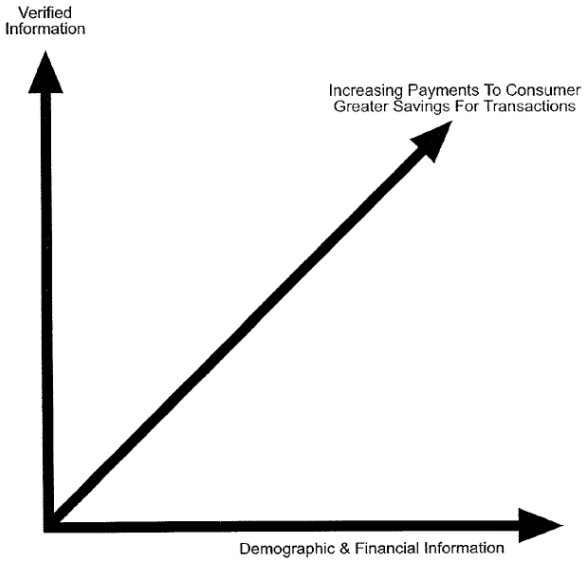
believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	taught for the same reasons as claim 3. *See* Section XII.B.2, above.
[4] The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	[14] The computer system of claim 13 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 14 is taught for the same reasons as claim 4. *See* Section XII.B.3, above.
[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 stored profile, the profile attributes used in targeting the advertisements.	[15] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 15 is taught for the same reasons as claim 5. *See* Section XII.B.4, above.

[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 the stored profile.	[16] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises 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 the stored profile.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 16 is taught for the same reasons as claim 6. *See* Section XII.B.5, above.
[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.	[20] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 20 is taught for the same reasons as claim 10. *See* Section XII.B.6, above.
[3] The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the	[23] The data storage medium of claim 21 wherein part (b) comprises the computer system adding the received partial profile to a stored profile	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 23 is taught for the same

same entity on account of the received partial profile and the stored profile being related to the same user computer.	believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	reasons as claim 3. *See* Section XII.B.2, above.
[4] The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	[24] The data storage medium of claim 23 wherein instructions cause the computer system to determine that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 24 is taught for the same reasons as claim 4. *See* Section XII.B.3, above.
[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 stored profile, the profile attributes used in targeting the advertisements.	[25] The data storage medium of claim 21 wherein the automatic method performed according to the instructions further comprises automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 25 is taught for the same reasons as claim 5. *See* Section XII.B.4, above.

C. Merriman In View Of Jaye And Coleman Or Merriman In View Of Minor And Coleman

364. Coleman teaches verifying profile information with outside sources and updating a profile to reflect whether verification was successful. Ex. 1039, ¶¶ [0056], [0072]-[0075]. With respect to Figure 2 (reproduced below), Coleman explains that the value of profile information (e.g., to sellers/advertisers) increases as the verifiability of the information increases. Ex. 1039, ¶¶ [0049], [0073].



Ex. 1039, FIG. 2

365. A POSITA would have found it obvious to combine Merriman with Jaye and Coleman or Merriman with Minor and Coleman, such that attributes of the profile information (**orange**) in the combination of Merriman and Jaye or in the combination of Merriman and Minor are verified and assigned verification scores (**light blue**). This is illustrated in the following drawing, which modifies Merriman's Figure 3 to include additional fields for BIRTHDATE, BIRTHDATE

SCORE, GENDER, and GENDER SCORE and to include a row showing example information for a user of Merriman's browser 16 (labeled user16).

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	BIRTHDATE SCORE	GENDER	GENDER SCORE
user16	X	X	X	X	X	X	X	X	M/D/YYYY	8	male	7

Ex. 1035, FIG. 3A (modified)

366. As shown in the drawing above, a POSITA would have found it obvious to determine a verification score for certain attributes that would have been verified as taught by Coleman. For example, a POSITA would have found it obvious to, as part of verifying information, determine a verification score to use as a variable in determining a deal (i.e., an advertisement) to provide to potential purchasers, as taught by Coleman. Ex. 1039, ¶¶ [0049], [0051], [0060], [0076]. Thus, attributes would have been selected for determining targeted advertisements based on the verification scores. *Id.*; Ex. 1035, Abstract, 1:8-11, 2:40-45, 4:50-54, 5:50-60, 5:64-67, 6:6-11, 6:56-59, 8:47-51.

367. Similarly, it would have been obvious to combine each of the above grounds (Merriman and Jaye or Merriman and Minor) with Coleman, such that attributes of the profile information (**orange**) in each ground are assigned source scores (**light blue**) indicating the trustworthiness of the source of a corresponding attribute. This is illustrated in the following drawing, which modifies Merriman's Figure 3 to include additional fields for BIRTHDATE, BIRTHDATE SOURCE

(SRC) SCORE, GENDER, and GENDER SOURCE (SRC) SCORE and to include a row showing example information in a user profile (**purple**) for a user of Merriman's browser 16 (labeled user16).

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	BIRTHDATE SRC SCORE	GENDER	GENDER SRC SCORE
user16	X	X	X	X	X	X	X	X	M/D/YYYY	5	male	3

Ex. 1035, FIG. 3A (modified)

368. As shown in the drawing above, a POSITA would have found it obvious to determine a source score for certain attributes to reflect the trustworthiness of the data. Also, attributes would have been selected for determining targeted advertisements based on the source scores.

369. A POSITA would have also found it obvious to use the verification scores (**light blue**) to determine prices (**light green**) for using or obtaining corresponding attributes of the profile information (**orange**). This is illustrated in the following drawing, which modifies Merriman's Figure 3 to include additional fields for BIRTHDATE, BIRTHDATE SCORE, BIRTHDATE PRICE, GENDER, GENDER SCORE, and GENDER PRICE and to include a row showing example information in a user profile (**purple**) for a user of Merriman's browser 16 (labeled user16).

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	BIRTHDATE SCORE	BIRTHDATE PRICE	GENDER	GENDER SCORE	GENDER PRICE
user16	X	X	X	X	X	X	X	X	M/D/YYYY	8	$.05	male	7	$.02

Ex. 1035, FIG. 3A (modified)

370. A POSITA would have been motivated to make these modifications to improve the effectiveness of targeted advertisements. Merriman is directed to providing targeted advertisements. The goal of targeted advertisements is for the advertisements to reach the desired audience. To do this successfully, decisions to select advertisements should be based on accurate information about the audience (website visitors). And to improve accuracy of the information, a POSITA would have verified the information and recorded verification results (e.g., scores) for use in selecting accurate information, as Coleman teaches. Ex. 1039, ¶¶ [0056], [0072]-[0075]. Similarly, to improve accuracy of the information, a POSITA would have selected information based on which sources of the information are deemed trustworthy. In some cases, the verification scores would be used to determine which sources are trustworthy.

371. A POSITA would have also wanted to incentivize websites to provide profile information for use in targeted advertising. Providing incentives in return for profile information was already well-known, as were various means for implementing an incentive/reward process for sources of profile information. Ex. 1045, 4:60-5:12, 7:48-55, 9:48-62. Having more profile information would allow more narrowly-tailored advertisements. It also increases the likelihood of acquiring accurate information. To incentivize sharing of profile information, a POSITA

would have offered compensation for profile information. *Id.* In view of Coleman's teachings that the value of information increases if it's verified, a POSITA would have set a price for profile information based on the verification results. Ex. 1039, ¶¶ [0049], [0073], FIG. 2.

372. It is also my opinion that other rationales also support my finding that the combination of Merriman (with Jaye or Minor) and Coleman would have been obvious. First, the combination of Merriman (with Jaye or Minor) and Coleman merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are Merriman's system having the URL redirection (or a modified URL redirection according to Jaye or Minor) and Coleman's processes and data structures for verifying profile information, determining values of profile information, and storing verification results. Ex. 1035, 2:59-3:63, FIG. 1; Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2. These known elements would have been combined according to known methods, such as Coleman's methods of verifying and determining values of profile information. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2. Finally, the combination yields predictable results, such as storing verification scores and prices in association with attributes of profile information.

373. The combination of Merriman (with Jaye or Minor) and Coleman also involves applying a known technique to a known device ready for improvement to

yield predictable results. See Section IV (referring to obviousness rationale (D)). The known techniques are Coleman's techniques for verifying profile information using outside sources and determining a value of profile information, in part, based on verification results. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2. The known device ready for improvement is Merriman's system including advertising server 19 that already stores user profiles and is capable of storing verification stores and prices. Ex. 1035, 4:43-54, FIG. 3A. The predictable result of this combination with Coleman is storing verification scores and prices in association with attributes of profile information in, e.g., database 54 of Merriman.

374. Finally, a POSITA would have had a reasonable expectation of success in combining Merriman with Jaye and Coleman or Merriman with Minor and Coleman because these combinations merely involve routine database management skills that a POSITA would have had. Ex. 1035, 8:51-56; Ex. 1037, 13:19-41 (describing scoring and that the "user profile can be incremented in real time and new interest categories can be easily added").

1. Dependent 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 stored profile."

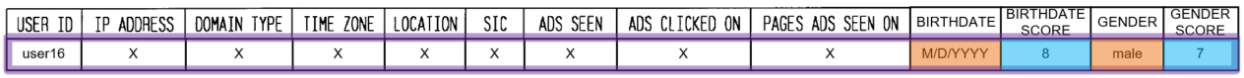
375. Claim 7 of the '249 Patent depends from claim 1 and further requires "maintaining with the computer system a credibility rating associated with at least one of the profile attributes of the stored profile." Ex. 1001, claim 7. As discussed

above, claim 1, from which claim 7 depends, is taught by the combination of Merriman and Jaye or the combination of Merriman and Minor. Merriman with Jaye and Coleman or Merriman with Minor and Coleman teach the additional limitations of claim 7.

376. Coleman, similar to Merriman, teaches a method for providing targeted advertisements based on potential purchaser profiles (the claimed "stored profile"). Ex. 1039, Abstract, [0011], [0049], [0055]-[0058], [0066]-[0068], FIG. 4. Coleman describes that the potential purchaser profiles may include different types of personal profile information, such as demographic, financial, or other information about potential purchasers (the claimed "at least one of the profile attributes"). Ex. 1039, [0049], [0056], [0061]-[0062], [0070]. Coleman also tracks the quality or verifiability of the profile information. Ex. 1039, [0049], [0074], FIG. 2. For example, Coleman describes attempting to verify the profile information and updating the profile to reflect which information (the claimed "at least one of the profile attributes") were successfully verified and which were not. *Id*. Coleman explains that by tracking the quality or verifiability of the information and maintaining a record in the profile, Coleman's system can provide an indication of whether the information may be considered reliable (the claimed "maintaining with the computer system a credibility rating"). *Id*.

377. A POSITA would have found it obvious to combine Merriman (with Jaye or Minor) and Coleman to implement a credibility rating associated with the profile information of Merriman. For example, a POSITA would have modified Merriman's databases such that the profiles in Merriman's databases included a record of the verifiability or quality of the profile information stored in the database, just as Coleman's potential purchaser profile does for its potential purchaser information. Ex. 1035, 4:5-8, 4:44-51, 5:50-60, 5:64-67, FIGs. 3A-3C; Ex. 1039, [0049], [0056], [0061]-[0062], [0070], [0074], FIG. 2. In at least one obvious combination of Merriman with Jaye and Coleman or Merriman with Minor and Coleman, Merriman's advertising server 19 would have maintained a verification score (**light blue**) (the claimed "credibility rating") associated with at least one attribute of the received profile information (**orange**) (which is appended to the URL as taught by Jaye) stored in a user profile (**purple**) in Merriman's database 54 using a data structure like Merriman's Figure 3A. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2; Ex. 1035, 4:43-54. This is illustrated in the following drawing (also shown above), which modifies Merriman's Figure 3 to include additional fields for BIRTHDATE, BIRTHDATE SCORE, GENDER, and GENDER SCORE and to include a row showing example information for a user of Merriman's browser 16 (labeled user16).

FIG. 3A



USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	BIRTHDATE SCORE	GENDER	GENDER SCORE
user16	x	x	x	x	x	x	x	x	M/D/YYYY	8	male	7

Ex. 1035, FIG. 3A (modified)

378. In the combination of Merriman (with Jaye or Minor) and Coleman, the profile information in Merriman's databases would still be used to provide targeted advertisements to Merriman's users. As such, a POSITA would have desired to utilize Coleman's record of the verifiability or quality of the profile information in selecting the advertisement most suited to the user's interests, based on the verified and/or highest quality profile information. Ex. 1039, ¶¶ [0049], [0073]-[0074]. Coleman's teachings of providing a prediction of how many potential purchasers would buy an offered good or service based on the verifiability or quality of the profile information (Ex. 1039, ¶ [0049]) provides motivation for combining Merriman (with Jaye or Minor) with Coleman to select advertisements. *See* Section IV (referring to obviousness rationale G).

379. It is also my opinion that other rationales also support my finding that the combination of Merriman (with Jaye or Minor) and Coleman would have been obvious. The known elements from Merriman (with Jaye or Minor) include Merriman's databases storing profile information of users accessing webpages, and the known elements from Coleman include Coleman's record of the verifiability or quality of profile information. Ex. 1035, 2:59-3:63, FIGs. 1, 3A; Ex. 1039, ¶¶

[0049], [0056], [0072]-[0075], FIG. 2. The known methods include storing profile information related to a user in Merriman's databases. Ex. 1035, 4:5-8, 4:44-51, 5:50-60, 5:64-67, FIGs. 3A-3C; Ex. 1039, [0049], [0056], [0061]-[0062], [0070], [0074], FIG. 2. This combination of Merriman (with Jaye or Minor) and Coleman would have the predictable result of adding, to Merriman's database 54, a record of the verifiability or quality of profile information stored in the database (which would have been useful for selecting targeted ads using Merriman's method).

380. The combination of Merriman (with Jaye or Minor) and Coleman also amounts to applying a known technique taught by Coleman to a known device described by Merriman that is ready for improvement to yield predictable results. *See* Section IV (referring to obviousness rationale D). Specifically, the combination applies storing or maintaining a record of the verifiability or quality of user profile information taught by Coleman for Coleman's host computer system to Merriman's similar advertising server 19 that is ready for improvement by Coleman's technique. Merriman's advertising server 19 is particularly ready for improvement because it, like Coleman, uses profile information to provide targeted advertisements but does not explicitly include a measure of credibility of the information used to select the targeted advertisements. Ex. 1035, 4:5-8, 4:44-51, 5:50-60, 5:64-67, 6:6-11, FIG. 3A; Ex. 1039, [0011], [0049], [0056], [0061]-[0062], [0070], [0074], FIG. 2. Merriman's advertising server 19 already has databases that store profile information

(Ex. 1035, 4:43-54, FIG. 3A) and the predictable result is a modification of Merriman's databases to further include a record of the verifiability and quality of the stored profile information.

381. Lastly, a POSITA would have had an expectation of success in combining Merriman (with Jaye or Minor) and Coleman given a POSITA's skills (e.g., storing electronic information in a computer system) and familiarity with maintaining information in computer databases, and given that Merriman already teaches a database of user profile information. Ex. 1035, 8:51-56; Ex. 1037, 13:19-41 (describing scoring and that the "user profile can be incremented in real time and new interest categories can be easily added"). In addition, a POSITA would have expected Merriman's advertising server 19 implementing Coleman's records of the verifiability and quality of profile information to operate as in Merriman, but simply with the added parameter of the verifiability and quality of the information being considered when selecting targeted advertisements.

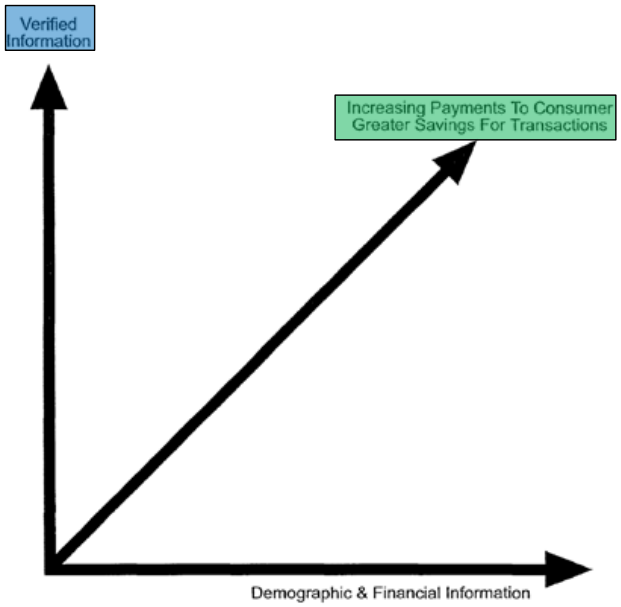
382. Accordingly, as shown above, the combination of Merriman with Jaye and Coleman or the combination of Merriman with Minor and Coleman teaches the additional limitations included in dependent claim 7, and renders claim 7 obvious to a POSITA.

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

383. Claim 8 of the '249 Patent depends from claim 7 and further requires "wherein the credibility rating is reflected in a price for the at least one profile attribute." Ex. 1001, claim 8. As discussed above, claim 7, from which claim 8 depends, is taught by the combination of Merriman with Jaye and Coleman or the combination of Merriman with Minor and Coleman. Merriman with Jaye and Coleman or Merriman with Minor and Coleman also teach the additional limitations of claim 8.

384. Coleman describes certain types of personal profile information (the claimed "at least one profile attribute") may have different levels of value to a seller. Ex. 1039, [0049], [0073], FIG. 2. Specifically, as shown in Figure 2, below, Coleman describes that as the quality or verifiability of the information (**blue**) increases, the value to a seller (e.g., an advertiser) (**green**) also increases. Ex. 1039, [0049], [0073], FIG. 2.

Fig. 2



Ex. 1039, FIG. 2 (annotated)

385. A POSITA would have understood that the value of the information to a seller, such as an advertiser, either is or would be incorporated into the price the advertiser might pay for the information. For example, as Coleman describes, as the value of the information increases the seller may provide a deal (e.g., in the form of an ad) to a potential purchaser (e.g., one of Merriman's users) based on an assumption that the potential purchaser will buy the advertised good or service. Ex. 1039, ¶ [0049]. Coleman further describes that the advertisers (sellers) will supply a payment for profile information. Ex. 1039, ¶ [0111], FIG. 11. Accordingly, it would have been obvious to the POSITA that the seller would purchase the profile

information in order to determine whether to provide the deal. Therefore, the verifiability or quality of the information (the claimed "credibility rating") would be reflected in the amount the seller pays for the information (the claimed "reflected in a price for the at least one profile attribute").

386. In at least one obvious combination of Merriman with Jaye and Coleman or Merriman with Minor and Coleman, Merriman's advertising server 19 would have maintained a verification score (**light blue**) (the claimed "credibility rating") and price (**light green**) associated with at least one attribute of the received profile information (**orange**) (which is appended to the URL as taught by Jaye) stored in a user profile (**purple**) in Merriman's database 54 using a data structure like Merriman's Figure 3A. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2; Ex. 1035, 4:43-54. This is illustrated in the following drawing (also shown above), which modifies Merriman's Figure 3 to include additional fields for BIRTHDATE, BIRTHDATE SCORE, BIRTHDATE PRICE, GENDER, GENDER SCORE, and GENDER PRICE, and to include a row showing example information for a user of Merriman's browser 16 (labeled user16).

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	BIRTHDATE SCORE	BIRTHDATE PRICE	GENDER	GENDER SCORE	GENDER PRICE
user16	X	X	X	X	X	X	X	X	M/D/YYYY	8	$.05	male	7	$.02

Ex. 1035, FIG. 3A (modified)

387. As shown above, in the proposed combinations, the verification scores are reflected in a price for the attributes. In particular, as the verifiability increases (i.e., greater verification score), the value and therefore the price of associated attributes increases. Ex. 1039, ¶¶ [0049], [0073].

388. Accordingly, as shown above, the combination of Merriman with Jaye and Coleman or the combination of Merriman with Minor and Coleman teaches the additional limitations included in dependent claim 8, and renders claim 8 obvious to a POSITA.

3. Dependent Claim 9: "The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the stored profile based on the source thereof."

389. Claim 9 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system selecting profile attributes from the stored profile based on the source thereof." Ex. 1001, claim 9. As discussed above, claim 1, from which claim 9 depends, is taught by the combination of Merriman and Jaye or the combination of Merriman and Minor. Merriman with Jaye and Coleman or Merriman with Minor and Coleman teach the additional limitations of claim 9.

390. As I explained above with respect to limitation [1E], the combination of Merriman and Jaye or the combination of Merriman and Minor teaches using the information stored in Merriman's user-specific databases ("stored profile" and "added partial profile" that consist of "profile attributes") in targeting third-party

advertisements to Merriman's users. Merriman describes that its databases also include targeting profile criteria for advertisements, and other data regarding the advertisements. Ex. 1035, 5:64-67, 7:32-43, FIG. 3A. Merriman selects advertisements to send to the user from the advertising server 19 based on these targeting criteria. Ex. 1035, 6:6-11, 7:32-43. As I explained above with respect to limitation [1E], Merriman teaches using the information stored in the databases ("profile attributes") to provide the advertisements, and thus it would have been obvious to a POSITA that Merriman's system may select the advertisement based on selected profile attributes (the claimed "selecting profile attributes").

391. Because Merriman's advertising server 19 stores targeting criteria for the advertisements, it would have been obvious to a POSITA that the profile attributes used to select the advertisement are selected based on the targeting criteria. For example, as explained by Merriman, the targeting criteria may be maximizing the likelihood of a user clicking on the advertisement. Ex. 1035, 6:6-11, 7:32-43. Merriman teaches that the likelihood of a user clicking on the advertisement may be maximized based on "empirically gathered information" that is "correlated to the compiled information on a user" ("profile attributes") and gives a specific example of "the specific page through which the user is accessing the advertising server process 19." Ex. 1035, 7:32-43. As I explained above with respect to limitations [1A] and [1D], information such as the page an ad the user is visiting (i.e., the page

an ad is viewed on) is a "profile attribute." A POSITA would have understood that because the page through which the user is accessing the advertising server 19 is also the source of at least some of the partial profile attributes (*see* Sections XII.A.1.b-e, above), Merriman's selection is based "on the source thereof."

392. In any event, it is my opinion that the combination of Merriman with Jaye and Coleman and the combination of Merriman with Minor and Coleman teach the limitations of claim 9. As I described above with respect to claim 8, Coleman discloses that the value of personal profile information (the claimed "profile attributes") increases based on the quality or verifiability of the information. Ex. 1039, [0049], [0073], FIG. 2. It would have been obvious to a POSITA that verifying information would include verifying the source of the information, in order to verify its accuracy. Ex. 1039, ¶ [0073].

393. Coleman also teaches that a seller (e.g., an advertiser supplying advertisements in Merriman) can offer deals for goods or services (e.g., ads) to groups of potential purchasers (e.g., users) based on the value of certain types of personal profile information. Ex. 1039, ¶¶ [0049], [0050], [0061], [0073], [0076], FIG. 2. Therefore, it would have been obvious to a POSITA to aggregate pieces of Coleman's personal profile information (the claimed "selecting profile attributes") based on their verifiability or quality (the claimed "based on the source thereof") to provide the information to a seller so the seller can offer a deal.

394. In at least one obvious combination of Merriman with Jaye and Coleman or Merriman with Minor and Coleman, Merriman's advertising server 19 would have maintained a source score (**light blue**) associated with at least one attribute of the received profile information (**orange**) (which is appended to the URL as taught by Jaye or included in a transparent redirect as taught by Minor) stored in a user profile (**purple**) in Merriman's database 54 using a data structure like Merriman's Figure 3A. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2; Ex. 1035, 4:43-54. This is illustrated in the following drawing (also shown above), which modifies Merriman's Figure 3 to include additional fields for BIRTHDATE, BIRTHDATE SOURCE (SRC) SCORE, GENDER, and GENDER SOURCE (SRC) SCORE, and to include a row showing example information for a user of Merriman's browser 16 (labeled user16).

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	BIRTHDATE SRC SCORE	GENDER	GENDER SRC SCORE
user16	x	x	x	x	x	x	x	x	M/D/YYYY	5	male	3

Ex. 1035, FIG. 3A (modified)

395. As shown above, in this example of the proposed combinations, the source score would have been a numerical value that increases as the trustworthiness of the source increases. Therefore, taking the above example, the fact that the information in the BIRTHDATE field is associated with a BIRTHDATE SOURCE SCORE of 5 while the information in the GENDER field is associated with a

GENDER SOURCE SCORE of 3 means that the source of the BIRTHDATE information was more trustworthy/reliable than the source of the GENDER information.

396. Further, Merriman's advertising server 19 would have automatically selected certain attributes from the user profile based on the source scores so that accurate/reliable information is used to provide improved targeted advertisements.

397. Accordingly, as shown above, the combination of Merriman with Jaye and Coleman or the combination of Merriman with Minor and Coleman teaches the additional limitations included in dependent claim 9, and renders claim 9 obvious to a POSITA.

4. Dependent Claims 17-19

398. Dependent claims 17-19 correspond to claims 7-9. As such, I have not repeated all of the analysis from above for claims 17-19. Instead, I have prepared the following table to show the claim language side-by-side and to address the minor differences. Specifically, the following table shows how dependent claims 17-19 are taught by the prior art for the same reasons that claims 7-9 are taught by the prior art.

Claims 7-9	Claims 17-19	Comparison
[7] The method of claim 1 further maintaining with the computer system a	[17] The computer system of claim 11 wherein the automatic method	Aside from their dependencies and statutory class, the

credibility rating associated with at least one of the profile attributes of the stored profile.	performed by the programmed computer system further comprises maintaining with the computer system a credibility rating associated with at least one of the profile attributes of the stored profile.	claims are identical. Thus, claim 17 is taught for the same reasons as claim 7. *See* Section XII.C.1, above.
[8] The method of claim 7 wherein the credibility rating is reflected in a price for the at least one profile attribute.	[18] The computer system of claim 17 wherein the credibility rating is reflected in a price for the at least one profile attribute.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 18 is taught for the same reasons as claim 8. *See* Section XII.C.2, above.
[9] The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.	[19] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 19 is taught for the same reasons as claim 9. *See* Section XII.C.3, above.

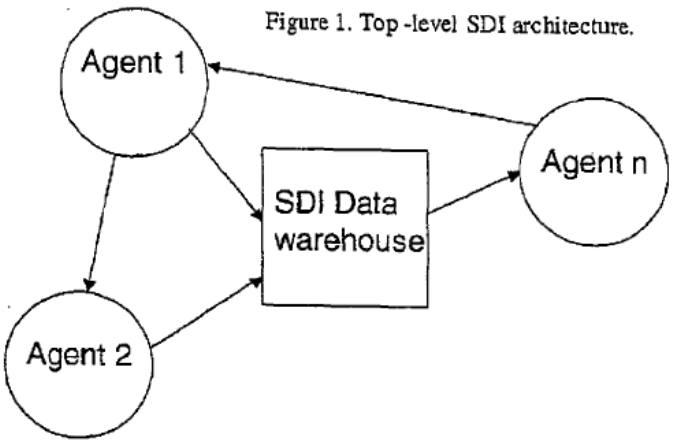
D. Merriman In View Of Jaye And Herz Or Merriman In View Of Minor And Herz

399. The grounds in this section add Herz to the grounds discussed in Sections XII.A and XII.B. These grounds are included in case the Patent Owner argues that dependent claims 5, 15, and 25 (which are all similar) require an electronic record that is separate from the "electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes" recited in limitations [1D], [11D], and [21D] of their respective independent claims and in case Patent Owner argues that claims 5, 15, and 25 would not have been obvious based on Merriman in view of Jaye or Merriman in view of Minor.

400. Herz teaches a secure data interchange (SDI) system that enables information to be exchanged between multiple parties. Ex. 1041, pp. 1-4, 66, 71-73; Ex. 1040, Abstract, ¶ [0043]. Herz's system controls access to information (in particular, profile information), release of the information, and matching of the information back to parties that contributed the information. Ex. 1041, pp. 1-9, 24, 66, 71-73; Ex. 1040, Abstract, ¶¶ [0043], [0053], [0056]. Herz's system provides economic incentives for users to provide profile information to the system by paying users for use of their profile information (e.g., by advertisers). Ex. 1041, pp. 1-4, 10, 39-49, 53, 71-73, 96-98, 112-115, 124-131; Ex. 1040, ¶¶ [0040], [0043]-[0044]. As such, Herz's system effectively provides a marketplace for profile information.

Ex. 1041, pp. 1-4, 9-10, 14, 31-36, 39-49, 53, 84-85, 95-114, 124-131; Ex. 1040, Abstract, ¶¶ [0003], [0052], [0056], [0082]-[0084], [0103]-[0104], [0126], [0876].

401. As shown in Figure 1 (below) of Herz, the system architecture includes agent computers (e.g., a PC of a consumer or a server computer executing an online business of a company/vendor) in two-way communication with an SDI data warehouse. Ex. 1041, FIG. 1, pp. 3-13; Ex. 1040, ¶¶ [0045], [0055].



Ex. 1040, FIG. 1

402. Herz's SDI data warehouse receives and stores profile information, records who owns/contributed the profile information, and issues payments to the owner when others use the profile information in queries (e.g., for targeted advertising). Ex. 1041, pp. 1-11, 14, 21-24, 26-27, 31-36, 39-49, 53, 60, 66-68, 70-73, 76-79, 84-86, 88-91, 95-117, 119-122, 124-134, 137; Ex. 1040, ¶¶ [0016]-[0017], [0025]-[0026], [0043], [0085], [0098], [0115]-[0118], [0162], [0224], [0228]-[0229], [0232]-[0234], [0238]-[0239], [0269], [0392], [0600], [0778],

[0883], [0891]. A POSITA would have understood that the SDI data warehouse is owned or controlled by a third party that is different from the parties who contributed the information to it. Ex. 1041, pp. 3-11 (describing Secure Data Interchange system with a central SDI server for allowing various parties to exchange data), 26-28, 59 ("Because this analysis, data collection, compilation and modeling procedure occurs securely under the control of the third party operator or intermediary operating the distributed trusted server network (e.g. SDI)…"), 67 ("the SDI acts as a trusted third party to both the user and the vendor"), 69, 114, FIGs. 1, 3, 6; Ex. 1040, ¶¶ [0003]-[0006], [0043]-[0059], [0103]-[0108], [0137]-[0138], [0549]-[0550], [0583], [0768]. A POSITA would have also understood that Herz's SDI data warehouse maintains an electronic record of which owner contributed profile information used in targeting advertisements in order to issue payments back to the owner when the profile information is used. Ex. 1041, pp. 1-11, 14, 21-24, 26-27, 31-36, 39-49, 53, 60, 66-68, 70-73, 76-79, 84-86, 88-91, 95-117, 119-122, 124-134, 137; Ex. 1041, ¶¶ [0016]-[0017], [0025]-[0026], [0043], [0085], [0087]-[0088], [0098], [0114]-[0118], [0162], [0224], [0228]-[0229], [0232]-[0234], [0238]-[0239], [0269], [0392], [0600], [0778], [0883], [0891]. Specifically, Herz discloses a data record including an owner ID indicating the agent (e.g., a vendor) who provided the data and a record ID for identifying the data that was provided by the agent. Ex. 1041, pp. 26-27, 31-33, 35-36, 42-43, 52-53; Ex. 1040, ¶¶ [0114]-[0118].

403. It would have been obvious to combine each of the grounds in Sections XII.A (Merriman in view of Jaye) and XII.B (Merriman in view of Minor) with Herz, such that Merriman's advertising server 19 would have automatically and electronically maintained an additional electronic record (separate from Merriman's page ad seen on field that meets the electronic record in limitations [1D], [11D], and [21D]), as taught by Herz, of which website contributed, to their respective user profiles (which were addressed in sections XII.A.1.c and XII.B.1.c with respect to limitation [1B]), profile attributes used in targeting the advertisements sent over the Internet (see sections XII.A.1.f and XII.B.1.f which address the advertisements mentioned in limitation [1E]). This teaches the claimed "automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements" in claims 5, 15, and 25.

404. In my opinion, a POSITA would have been motivated to incorporate a separate record (similar to Herz's record) into Merriman's database 54 to enable Merriman's advertising server 19 to pay websites (similar to Merriman's website 12) for providing profile information that is used for targeted advertising. Ex. 1041, pp. 1-4, 66, 71-73, 95-117, 125-131, 133-134; Ex. 1040, ¶¶ [0040], [0043], [0847], [0876]. Paying websites for profile information would have incentivized websites to share profile information. The profile information would have been desirable to

the advertising server 19 because it would allow it to place targeted advertisements. Meanwhile, sellers would have been more likely to use the advertising server 19 if it had the ability to place targeted advertisements. The party/entity running the advertising server 19 would have understood this and would have wanted to incentivize websites to share profile information to increase its own revenues. In addition, sellers would have been more willing to pay more for placing targeted advertisements, so advertising server 19 would have been motivated to collect as much user profile information as practical to increase profit margins.

405. It is also my opinion that other rationales support my finding that the combination of Merriman (with Jaye or Minor) and Herz would have been obvious. For example, the combination of Merriman (with Jaye or Minor) and Herz involves use of a known technique to improve similar devices in the same way. See Section IV (referring to obviousness rationale (C)). The known techniques are Herz's techniques for storing who contributed profile information used by others (e.g., advertisers) to pay those who contributed the profile information for its use. Ex. 1041, pp. 1-4, 10, 39-49, 53, 71-73, 96-98, 112-115, 124-131; Ex. 1040, ¶¶ [0040], [0043]-[0044]. These techniques would have been used to improve Merriman's database 54, which is similar to the SDI warehouse, in the same way Herz's techniques improve its SDI warehouse by incentivizing vendors (e.g., websites) to

share profile information thereby increasing the amount of valuable information in the warehouse.

406. Lastly, a POSITA would have had a reasonable expectation of success in combining Merriman with Jaye and Herz or Merriman with Minor and Herz because these combinations merely involve routine database management skills that a POSITA would have had. Ex. 1035, 8:51-56; Ex. 1037, 13:19-41 (describing that the "user profile can be incremented in real time and new interest categories can be easily added"); Ex. 1041, pp. 29, 34, 40, 62-63, 113-114, 120-123; Ex. 1040, ¶¶ [0109]-[0110] (explaining that its system is expandable to create new data types).

E. Merriman In View Of Jaye And Gardner Or Merriman In View Of Minor And Gardner

407. The grounds in this section add Gardner to the grounds discussed in Sections XII.A and XII.B. These grounds are included in case the Patent Owner argues that dependent claims 6 and 16 (which are similar) would not have been obvious based on Merriman in view of Jaye or Merriman in view of Minor, and in case Patent Owner argues that dependent claims 9 and 19 (which are similar) would not have been obvious in view of Coleman.

408. Gardner teaches a method for maintaining user data in a profile, including determining whether to update a profile with newly received user data (see step 615 (**light green**) in Figure 6 below) and updating the profile as appropriate (see step 620). Ex. 1043, 7:36-8:16, FIG. 6. Gardner also teaches maintaining

reliability ratings for the user data, determining if a more reliable source exists (see step 635 (**light blue**) in Figure 6 below), and replacing current user data with more reliable data as appropriate (see step 640). Ex. 1043, Abstract, 7:48-60, 8:31-46, FIG. 6.

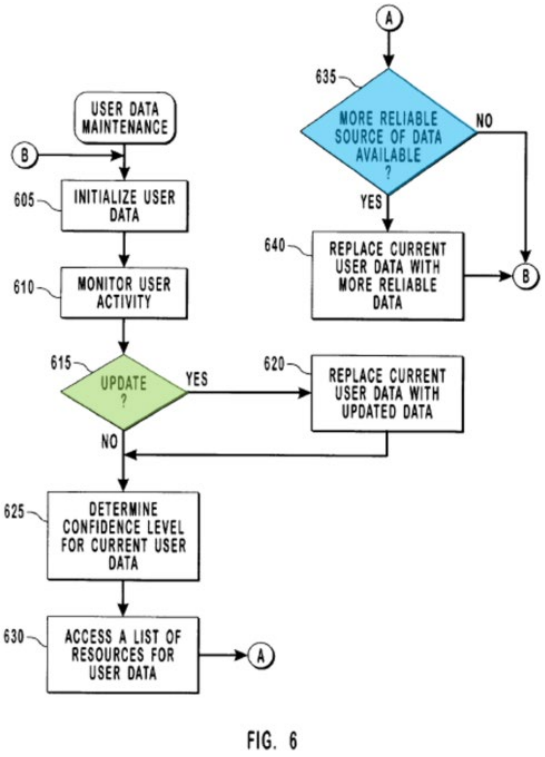
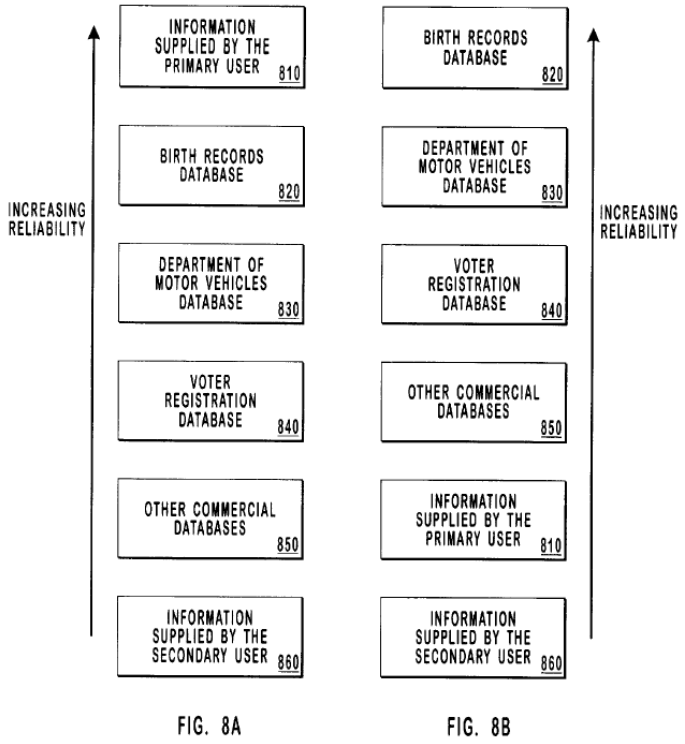


FIG. 6

Ex. 1043, FIG. 6 (annotated)

409. Gardner also gives examples of the hierarchies of sources in terms of their reliability with respect to Figures 8A and 8B (below). Ex. 1043, 9:50-10:32, FIGs. 8A, 8B.



Ex. 1043, FIGs. 8A and 8B

1. **Dependent 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 the stored profile."**

410. Claim 6 of the '249 Patent depends from claim 1 and further requires "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 the stored profile." Ex. 1001, claim 6. As discussed above, claim 1, from which claim 6 depends, is taught by the combination of Merriman and Jaye or the combination of Merriman and Minor. Merriman with Jaye and Gardner or Merriman with Minor and Gardner also teach the additional limitations of claim

6. Additionally, as discussed in the Technical Background section (see Section VIII.B on databases), a POSITA would have known the use of database queries to determine whether received data contains any data that is not previously stored in the database when adding the received data to the database, and therefore would have used queries to determine "whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile," as set forth in the claim.

411. Gardner teaches monitoring a user's online activity to receive user data (similar to the claimed "partial profile") and determining (see step 615) whether to update stored user data (similar to the claimed "stored profile") based on the received user data, which includes determining a value of the received user data is for a previously undefined information field. Ex. 1043, 7:66-8:16, FIG. 6. By determining whether a value of the received user data is for a previously undefined information field, Gardner's method at step 615 (**light green**) in Figure 6 (shown below) is determining whether received user data (similar to the claimed "received partial profile") contains any profile attributes about the user that were not previously contained in the stored user data.

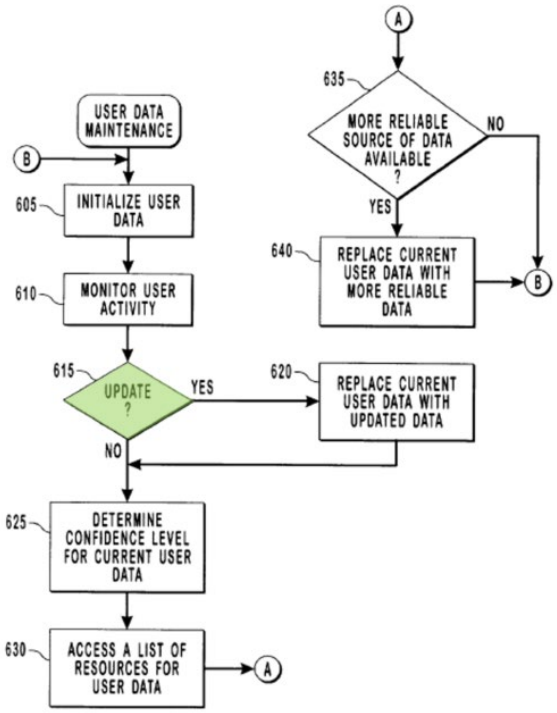


FIG. 6

Ex. 1043, FIG. 6 (annotated)

412. In my opinion, a POSITA would have found it obvious to combine Gardner Merriman in view of Jaye or Merriman in view of Minor, such that Merriman's advertising server 19 automatically and electronically determines whether received profile information (which is the claimed "partial profile" as discussed in sections XII.A.1.b and XII.B.1.b above) contains any attributes about the user of browser 16 that were not previously contained in the user's profile in Merriman's database 54 (which is the claimed "stored profile" as discussed in sections XII.A.1.c and XII.B.1.c above). For example, if the user profile (**purple**) was as shown in the below drawing (which modifies Merriman's Figure 3A to include additional fields for BIRTHDATE and GENDER and a row for storing a

profile for the user of Merriman's browser 16 (i.e., user16) as previously explained) when new profile information indicating the user's birthdate and gender was received, a POSITA would have found it obvious in view of Gardner (particularly, Gardner's step 615) to design (or program) the advertising server 19 to determine that the user profile (**purple**) already contains the user's birthdate but does not contain the gender:

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	GENDER
user16	X	X	X	X	X	X	X	X	M/DD/YYYY	

Ex. 1035, FIG. 3A (modified)

Thus, Merriman with Jaye and Gardner or Merriman with Minor and Gardner teach claim 6.

413. A POSITA would have been motivated to make these combinations with Gardner for similar reasons that I explained above for why features of claim 6 would have been obvious. See Sections XII.A.5 and XII.B.5. A POSITA would have wanted to build a comprehensive user profile with lots of information about a user that would have been valuable for determining targeted advertisements and would have wanted to avoid overwriting or duplicating existing information in a stored user profile while doing so, which is the beneficial result of Gardner's step 615. Ex. 1043, 8:4-15. Further, a POSITA would have been motivated to avoid duplicates in order to conserve memory capacity, which would have been an

important consideration given the expected large size of Merriman's database 54. Duplicates would have also been undesirable in embodiments where sources are rewarded for contributing information because it might lead to unnecessarily rewarding multiple sources (e.g., paying multiple sources) for the same information. Similarly, overwriting the information would have been undesirable in such embodiments because it might lead to the loss of the original source of the information, which might discourage sources from contributing profile information in the long run. Thus, a POSITA would have recognized that it is desirable to build a user profile by only storing new pieces of profile information and rewarding sources for new pieces.

414. It is also my opinion that other rationales support my finding that the combination of Merriman (with Jaye or Minor) and Gardner would have been obvious. For example, the combination of Merriman (with Jaye or Minor) and Gardner involves use of a known technique to improve similar devices in the same way. See Section IV (referring to obviousness rationale (C)). The known techniques are Gardner's techniques for checking whether a value in received user data is for a previously undefined information field prior to updating a stored user profile and then updating the user profile if the field is undefined. Ex. 1043, 8:4-15, FIG. 6. These techniques would have been used to improve Merriman's database 54, which is similar to the database on Gardner's server 5, in the same way Gardner's

determination at step 615 improves Gardner's method by undesirably updating its database with duplicate information or undesirably overwriting existing data.

415. Lastly, a POSITA would have had an expectation of success in combining Merriman (with Jaye or Minor) and Gardner given a POSITA's skills (e.g., database management skills such as adding newly received information to a database), given extant database technology (see Section VIII.B), and given that Merriman already teaches a database of user profile information. Ex. 1035, 8:51-56; Ex. 1037, 13:19-41 (describing that the "user profile can be incremented in real time and new interest categories can be easily added"). In addition, a POSITA would have expected Merriman's advertising server 19 implementing Gardner's determination in step 615 to successfully add newly received attributes to a user profile in Merriman's database 54 without duplicating them or overwriting existing attributes. Ex. 1043, 2:50-58.

2. Dependent Claim 9: "The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the stored profile based on the source thereof."

416. Claim 9 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system selecting profile attributes from the stored profile based on the source thereof." Ex. 1001, claim 9. As discussed above, claim 1, from which claim 9 depends, is taught by the combination of Merriman and Jaye

or the combination of Merriman and Minor. Merriman with Jaye and Gardner or Merriman with Minor and Gardner also teach the additional limitations of claim 9.

417. Gardner teaches maintaining, for each field of user data, a reliability rating indicating a relative reliability of the source of that user data. Ex. 1043, 7:48-60. This rating is then used to determine if a more reliable source exists at step 635 (**light blue**) in Gardner's method, as shown in Figure 6 below. Ex. 1043, 8:31-46, 9:50-10:32, FIGs. 6, 8A-8B.

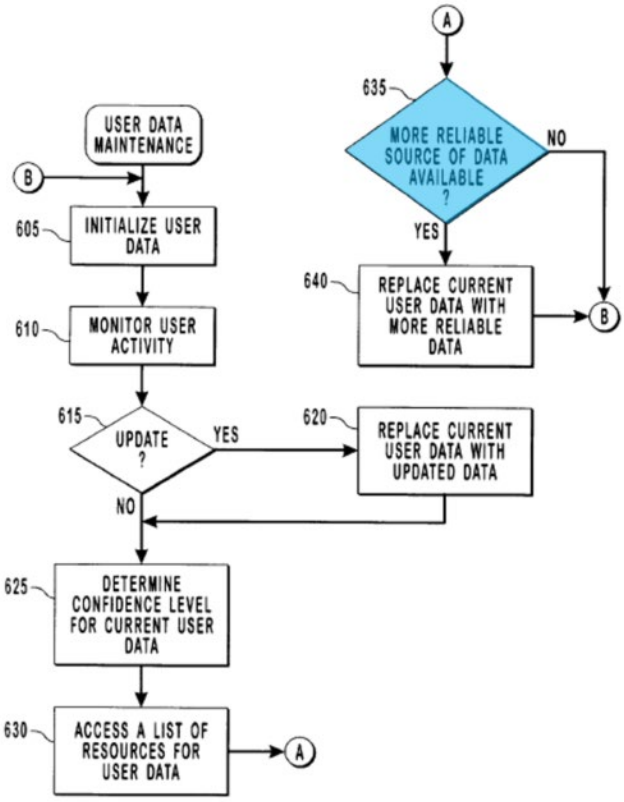


FIG. 6

Ex. 1043, FIG. 6 (annotated)

418. In my opinion, a POSITA would have found it obvious to combine Gardner with Merriman in view of Jaye or Merriman in view of Minor, such that Merriman's advertising server 19 maintains a **source score** (similar to Gardner's reliability ratings for sources) associated with attributes of the received profile information stored in a user profile (see the data structure in Figure 3A of Merriman). For example, in at least one obvious combination of Merriman with Jaye and Gardner or Merriman with Minor and Gardner, Merriman's advertising server 19 would have maintained a source score (**light blue**) associated with at least one attribute of the received profile information (**orange**) (which is appended to the URL as taught by Jaye or included in a transparent redirect as taught by Minor) stored in a user profile (**purple**) in Merriman's database 54 using a data structure like Merriman's Figure 3A. Ex. 1043, 7:48-60, 8:31-46, FIGs. 6, 8A, 8B; Ex. 1035, 4:43-54. This is illustrated in the following drawing, which modifies Merriman's Figure 3 to include additional fields for BIRTHDATE, BIRTHDATE SOURCE (SRC) SCORE, GENDER, and GENDER SOURCE (SRC) SCORE, and to include a row showing example information for a user of Merriman's browser 16 (labeled user16).

FIG. 3A

USER ID	IP ADDRESS	DOMAIN TYPE	TIME ZONE	LOCATION	SIC	ADS SEEN	ADS CLICKED ON	PAGES ADS SEEN ON	BIRTHDATE	BIRTHDATE SRC SCORE	GENDER	GENDER SRC SCORE
user16	X	X	X	X	X	X	X	X	M/D/YYYY	5	male	3

Ex. 1035, FIG. 3A (modified)

419. As shown above, in this example of the proposed combinations, the source score would have been a numerical value that increases as the trustworthiness/reliability of the source increases. Therefore, taking the above example, the fact that the information in the BIRTHDATE field is associated with a BIRTHDATE SOURCE SCORE of 5 while the information in the GENDER field is associated with a GENDER SOURCE SCORE of 3 means that the source of the BIRTHDATE information was more trustworthy/reliable than the source of the GENDER information.

420. Further, Merriman's advertising server 19 would have automatically selected certain attributes from the user profile based on the source scores so that accurate/reliable information is used to provide improved targeted advertisements. The attributes would have also been selected as part of the process for maintaining the user profile because Gardner teaches updating the user profile as data from more reliable sources becomes available. Ex. 1043, 8:37-46.

421. A POSITA would have been motivated to make these combinations with Gardner for similar reasons that I explained above for why features of claim 9 would have been obvious in view of Coleman. See Section XII.C. In particular, a POSITA would have been motivated to make these combinations to improve the accuracy of profile information, which would have increased the value of the

information (e.g., to advertisers) and therefore would have allowed advertising server 19 to charge advertisers more for placing ads.

422. It is also my opinion that other rationales support my finding that the combination of Merriman (with Jaye or Minor) and Gardner would have been obvious. For example, the combination of Merriman (with Jaye or Minor) and Gardner involves use of a known technique to improve similar devices in the same way. See Section IV (referring to obviousness rationale (C)). The known techniques are Gardner's techniques for maintaining reliability ratings and updating user data when data from more reliable sources becomes available. Ex. 1043, 7:48-60, 8:31-46, FIGs. 6, 8A, 8B. These techniques would have been used to improve Merriman's database 54, which is similar to the database on Gardner's server 5, in the same way Gardner's use of reliability ratings improves the accuracy of Gardner's user data.

423. Lastly, a POSITA would have had an expectation of success in combining Merriman (with Jaye or Minor) and Gardner given a POSITA's skills (e.g., database management skills such as adding parameters like reliability ratings in association with particular data). Ex. 1043, 2:50-58. In addition, a POSITA would have expected Merriman's advertising server 19 (implementing Gardner's reliability ratings) to successfully store reliability ratings in association with profile information in Merriman's database 54.

424. Accordingly, as shown above, the combination of Merriman with Jaye and Gardner or the combination of Merriman with Minor and Gardner teaches the additional limitations included in dependent claim 9, and renders claim 9 obvious to a POSITA.

3. Dependent Claims 16 and 19

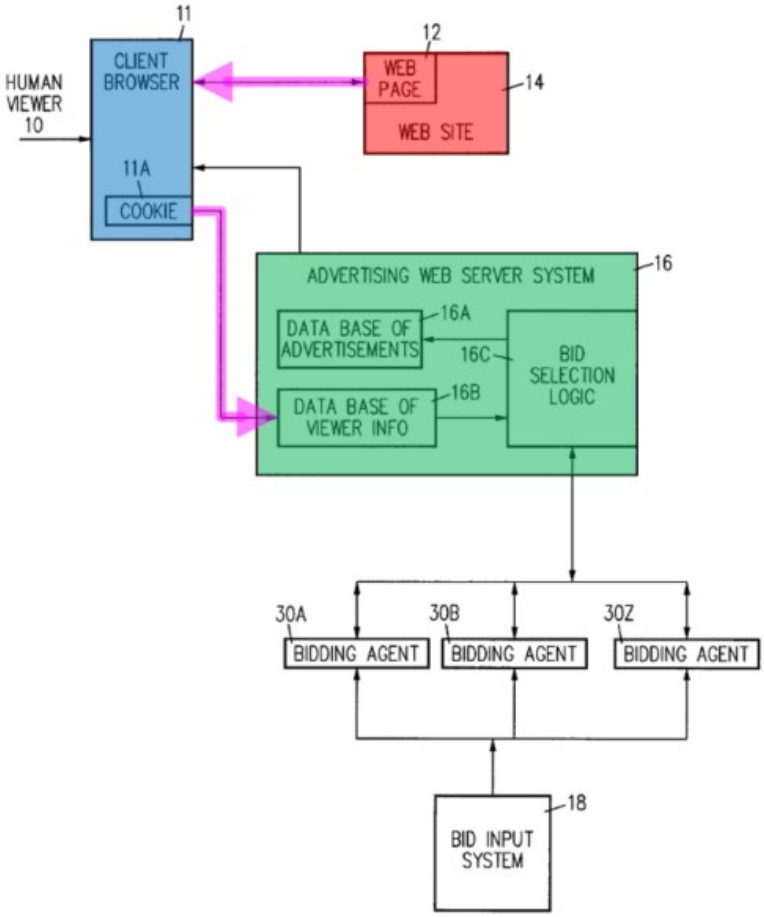
425. Dependent claims 16 and 19 correspond to claims 6 and 9. As such, I have not repeated all of the analysis from above for claims 16 and 19. Instead, I have prepared the following table to show the claim language side-by-side and to address the minor differences. Specifically, the following table shows how dependent claims 16 and 19 are taught by the combinations with Gardner for the same reasons that claims 6 and 9 are taught by the combinations with Gardner.

Claims 6 and 9	Claims 16 and 19	Comparison
[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 the stored profile.	[16] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically determining whether the received partial profile contains any profile attributes about the entity that were not	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 16 is taught for the same reasons as claim 6. *See* Section XII.E.1, above.

	previously contained in the stored profile.	
[9] The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.	[19] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 19 is taught for the same reasons as claim 9. *See* Section XII.E.2, above.

F. ROTH IN VIEW OF JAYE

426. Roth describes a method and system for compiling information about website visitors/users/viewers and providing targeted advertisements over the Internet to those visitors/users/viewers. Ex. 1036, Abstract, 1:4-7, 1:66-2:19. Roth teaches that the website 14 (**red**) sends a message (**magenta**) that provides a webpage that includes a portion with a URL for redirecting the client browser 11 (**blue**) to send another message (**magenta**), which includes a cookie 11A, to the advertising system 16 (**green**). Ex. 1036, 3:33-4:57, FIGs. 1-3.

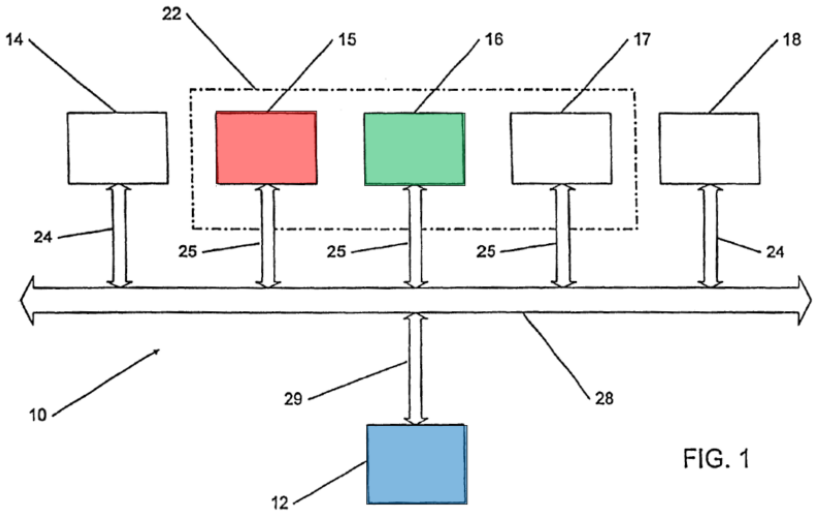


Ex. 1036, FIG. 1 (annotated)

I also note that similar to the description in the ’249 patent, the cookie 11A is stored on the client/user browser 11 (**blue**) and used to provide profile information about the user to the system 16 (**green**). Ex. 1036, 3:38-42, 4:45-57, 10:6-54, FIG. 2A. Roth therefore describes URL redirection at least as much as the ’249 patent does. That is, Roth teaches the client browser 11 sending a cookie 11A (that was presumably set in the client browser by the advertising system 16 as was known in the art (see discussion in Section VIII.C describing differences between cookies set by websites and cookies set by third party servers like advertising system 16)) to the

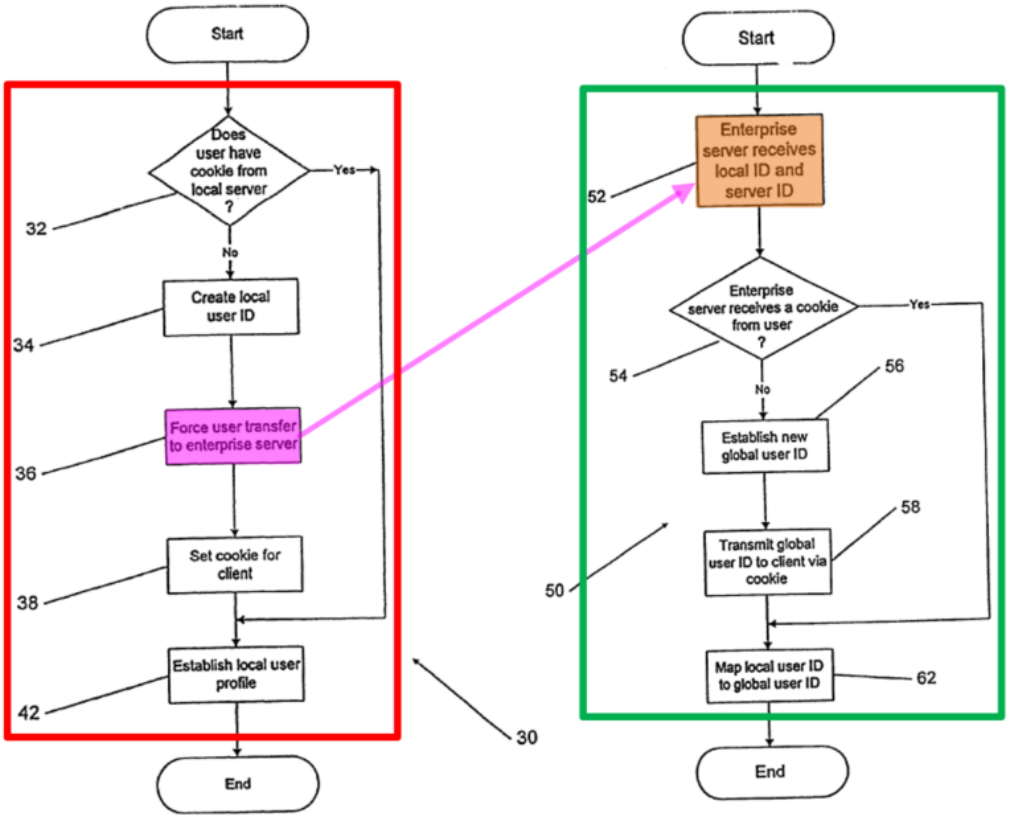
advertising system 16 so that the advertising system 16 is able to leverage its cookie 11A to combine profile information derived from the client browser 11 across multiple websites 14. Likewise, the '249 patent simply describes the visitor's computer sending back a cookie to the system 4 that was installed on the visitor's computer by the system 4 (not by the website (or user) 3). Ex. 1001, 4:1-7, 11:64-12:6.

427. It is my opinion that a POSITA would have found it obvious to combine Roth with Jaye such that the combination meets the plain and ordinary meaning of the claims (see for example limitation [1A] which requires that the partial profile come from the "at least one server" which refers to a website server that hosts the website that a person visits). As shown in Figure 1 of Jaye (below, annotated), Jaye's client 12 (**blue**) is similar to Roth's browser 11, Jaye's local server 15 (**red**) is similar to Roth's website 14, and Jaye's enterprise server 16 (**green**) is similar to Roth's advertising system 16. Ex. 1037, FIG. 1. As previously discussed, Jaye also teaches that its components perform similar operations to Roth's components. Specifically, Jaye's client 12 (**blue**) gets a webpage from the local server 15 (**red**) and communicates over the Internet 10 with the enterprise server 16 (**green**) that maintains a global user profile. Ex. 1037, 4:5-6:19, 7:21-26, 8:40-43, 13:19-41, 14:22-25, FIG. 1.



Ex. 1037, FIG. 1 (annotated)

428. Also as previously discussed, and importantly, Jaye teaches that the local server 15 (**red**) forces a transfer to automatically redirect the client 12 to the enterprise server 16 (**green**). This is shown in the following drawing placing Jaye's Figure 2 (left) side-by-side with Jaye's Figure 3 (right). Jaye's Figure 2 (left) shows the operation of a local server e.g., local server 15 (**red**), while Jaye's Figure 3 (right) shows the operation of the enterprise server 16 (**green**). The **magenta arrow** shows that the local server forces a transfer that is received by the enterprise server 16.



Ex. 1037, FIGs. 2 (left) and 3 (right) (both annotated)

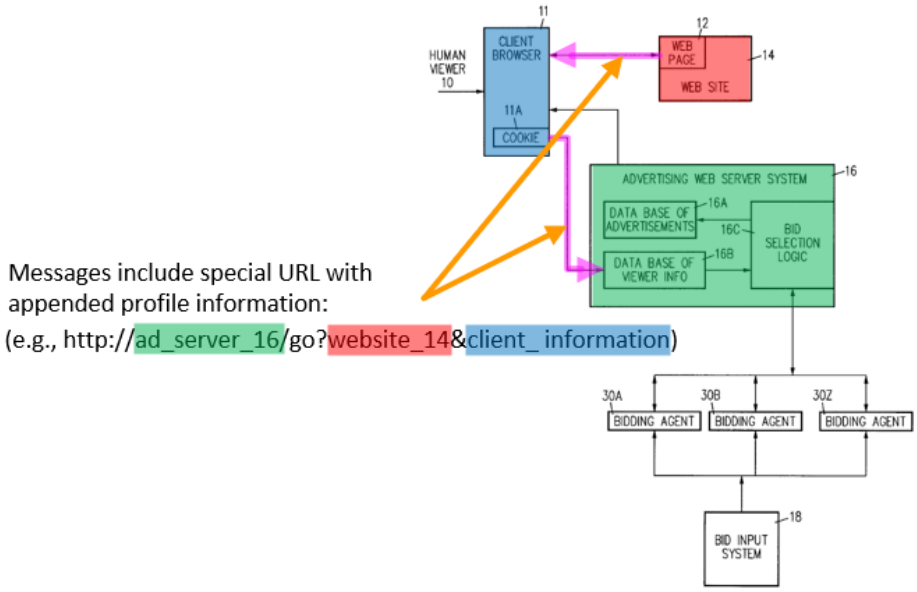
Ex. 1037, 6:32-67, 7:46-57, FIGs. 2-3. The forced transfer in Jaye is an automatic redirection. With respect to the forced transfer, Jaye explains that "a variety of conventional techniques exist for forcing a transfer to another server." Ex. 1037, 6:34-36.

429. In particular, Jaye describes a technique of inserting, into an image tag of a webpage, a special URL that redirects the client 12 to the enterprise server 16. Ex. 1037, 6:36-40. Jaye further describes appending additional profile information, such as a local server ID and client information (e.g., a local user ID), to the special URL. Ex. 1037, 6:40-46. Jaye even gives a pseudo-URL as an example:

http://enterprise_server_id/go?local_server_id&client_information. *Id.* In this example, the URL would redirect the client to the enterprise server 16 because it provides the enterprise_server_id. This example also teaches a POSITA that the special URL can be used to provide the enterprise server 16 with two pieces of information: the local_server_id which provides the ID of the local server such as the local server 15, and the client_information which teaches providing various information about the client. Jaye further teaches that, after the enterprise server 16 receives this profile information, it is added to a global user profile stored at enterprise server 16. Ex. 1037, 7:58-8:28.

430. A POSITA would have found it obvious to combine Roth's system for providing targeted advertisements based on "view-op" characteristics (which are characteristics, including user/viewer profile information, of the opportunity for placing an advertisement for the user to view) and Jaye's teachings to automatically force a transfer of profile information (e.g., by appending profile information to a URL) to an enterprise server that maintains a global user profile for use by an advertiser. Ex. 1036, 1:30-54, 1:66-2:19, 4:26-6:11, 7:11-25, 22:29-59; Ex. 1037, 6:32-67, 7:46-57, 8:40-52. For example, it would have been obvious to implement or modify Roth's system such that the website 14 sends a message that provides Roth's webpage 12 including a portion having a special URL (with appended profile information as taught by Jaye) that causes the user's browser 11 to send another

message (including the special URL with appended profile information) to the advertising system 16, which in turn adds the profile information to a global user profile. Ex. 1036, 3:33-5:19; Ex. 1037, 8:10-55. The following illustrates an example combination of Roth and Jaye using Roth's Figure 1 and an example special URL similar to the pseudo-URL in Jaye (i.e., the special URL at the bottom left of the drawing is similar to Jay's special URL – http://enterprise_server_id/go?local_server_id&client_information).



431. As shown above, the combination maintains the messages (**magenta arrows**) that together form an automatic electronic URL redirection. In addition, the pseudo-URL includes ad_server_16 to indicate a server of the advertising system 16 (**green**) so that the client's/user's browser 11 (**blue**) would be redirected to the advertising system 16. The pseudo-URL also includes website_14 appended to the URL to indicate the ID of the website 14 (**red**) that triggered the redirect. Finally,

the pseudo-URL includes client_information appended to the URL to indicate that various client information about the user/client (who operates the user's browser 11 (**blue**)) would be transmitted to the advertising system 16. Thus, the combination of Roth and Jaye teaches a method and system in which the advertising system 16 receives profile information from the website 14 as a result of automatic electronic URL redirection from a portion of the webpage 12 accessed by the user's browser 11.

432. It is also my opinion that a POSITA would have found it obvious for the appended profile information in the combination of Roth and Jaye to include various attributes. Ex. 1037, 6:40-46, 13:19-31; Ex. 1036, 1:30-54, 2:10-19, 8:9-15, 9:1-2, 9:36-37. For example, a POSITA would have found it obvious for the attributes to include information identifying the user, similar to how Jaye teaches a local user ID and client information being appended to the URL. Ex. 1037, 6:40-46. As another example, the attributes would have included information identifying the website 14, similar to how Jaye teaches a local server ID that identifies the server that caused the forced transfer (i.e., redirect). Ex. 1037, 6:40-46. Finally, a POSITA would have found it obvious for the attributes to include information identifying the webpage 12 of the website 14 and/or other "view-op" characteristics that would have been of interest to advertisers (including well-known user profile information like demographic and geographic information which both Roth and Jaye describe being

captured by websites). Ex. 1037, 6:40-46, 13:19-31; Ex. 1036, 1:30-54, 2:10-19, 8:9-15, 9:1-2, 9:36-37, 11:43-46, 14:6-11, 18:54-62.

433. In addition, it is also my opinion that a POSITA would have found it obvious to modify Roth's database(s) to store the various attributes appended to the URL. Ex. 1036, 3:57-59, 4:45-57, 9:27-37, 10:6-54, 11:47-51, 12:12-22, 12:35-38, 18:36-60. Roth illustrates a current user/viewer data (CUD) table 410, within database 16B of the advertising system 16, for storing information about the user operating the browser 11 in Figure 4 (below).

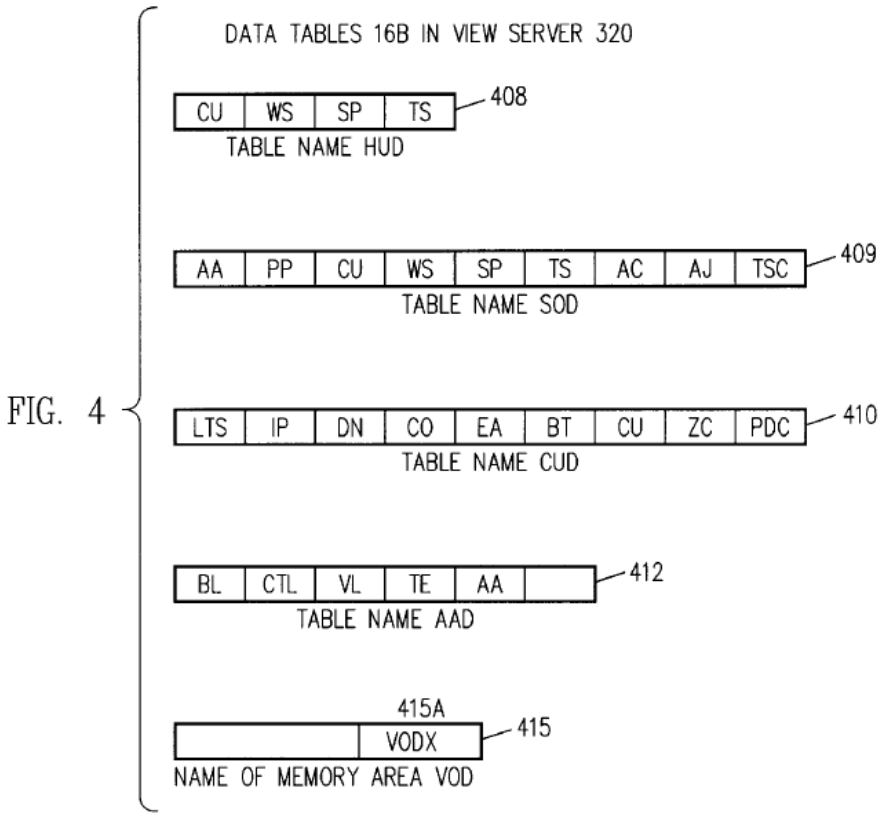
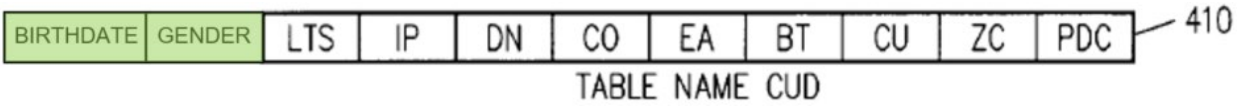


FIG. 4

Ex. 1036, FIG. 4

Modifying this table to store the attributes appended to the URL would have been a natural extension of including the various attributes with the URL. Ex. 1037, 13:19-41. The point of including the information with the URL is for the advertising server to receive and store the information, so a POSITA would have taken the additional steps to modify the database 16B at the advertising system 16 to accomplish this. Ex. 1037, 13:35-36. For example, if well-known demographic information like birthdate and gender information were appended to the URL (which would have been obvious), then a POSITA would have also modified Roth's CUD table 410 to include fields to capture this demographic information. Ex. 1036, 18:36-60; Ex. 1037, 13:19-41. This is shown in the following drawing which modifies Roth's CUD table 410, which has been excerpted by cropping Roth's Figure 4, to add BIRTHDATE and GENDER fields (**light green**) to the CUD table.



Ex. 1036, FIG. 4 (cropped and modified)

434. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSITA to modify Roth and combine Roth with Jaye in the ways that I have described. See Section IV (referring to obviousness rationale (G)). A POSITA would have been motivated to combine Roth and Jaye in this way to provide profile information captured by the website 14 to advertising system 16

in real-time. Indeed, Roth describes a real-time bidding process in which advertisers bid on advertising slots (referred to as "view-ops") in real-time based on characteristics of the advertising slot ("view-op" characteristics), which demonstrates that there was motivation in the industry to provide profile information in real-time. Ex. 1036, Abstract, 2:7-10, 2:20-3:2, 4:1-15, 5:20-32, 5:46-54. Roth also teaches that, if additional profile information is provided and it meets an advertiser's criteria, the advertiser might pay a higher price. Ex. 1036, 2:20-47, 4:1-15. Roth even describes that one of its objectives is to enable website owners to "obtain the highest possible revenue for displaying advertisements on their sites," thereby teaching a motivation specifically for website 14 to append profile information it collects to the URL it sends to redirect browser 11. Ex. 1036, 2:66-3:2. Such economic incentives would have motivated a POSITA to use Jaye's technique of appending information to a URL for redirection in Roth's system to arrive at Roth-Jaye in which profile information is passed from website 14 to system 16 by appending it to a URL used for redirection.

435. Roth also explains that a downfall of some prior art systems was that targeting criteria (including information about a particular viewer) had to be specified in advance, which provides additional motivation for the transfer of profile information as part of the real-time redirect in the proposed combination of Roth and Jaye. Ex. 1036, 1:39-63. Thus, in view of Roth, a POSITA would have understood

that it would have been desirable for the advertising system 16 to receive up-to-date profile information for providing improved targeted advertisements. Ex. 1036, Abstract, 5:20-45; Ex. 1037, 2:55-62, 13:19-41. By passing profile information with the request for inserting an advertisement, the profile information can be immediately used to select an advertisement to fulfill the request. Ex. 1036, Abstract, 2:7-10, 5:20-32, 7:26-33; Ex. 1034, p. 281 (describing delivery of targeted content to customers "quickly and easily"). Roth evidences that advertisers were interested in current information about users and the context in which advertisements were to be placed. Ex. 1036, 11:43-46, 14:6-11. A POSITA would have been motivated to combine Roth with Jaye to provide advertisers with current information that the advertisers were interested in because of the economic incentives (e.g., increased revenue from more advertisers willing to pay for ads based on up-to-date information and increased profits because advertisers willing to pay more per ad) associated with providing the current information. A POSITA would have been aware of these demands and economic incentives for providing current information about users and the content in which advertisements were to be placed. For example, in addition to knowing advertisers were interested in such information, a POSITA would also have known that advertisers were even willing to pay more if their advertisements were delivered based on this information. Ex. 1036, 4:63-5:37, 8:44-48; Ex. 1032, 4:8-9; Ex. 1034, 119 (describing "Accumulating sufficiently rich

profiles of these clients to generate higher revenues"); Ex. 1044, ¶¶ [0079]-[0080]. The demand and economic incentives for this information would have motivated a POSITA to produce the combination of Roth and Jaye that I described above.

436. Further, as explained above, the combination of Roth and Jaye is not limited to any particular type of profile information because it would have been obvious for the redirection to involve transferring various types of profile information. Ex. 1036, 5:38-45, 11:43-46, 18:36-65; Ex. 1037, 13:19-41. A POSITA would have had different motivations for transferring different types of profile information. For example, as noted above, a POSITA would have understood from teachings in the prior art that advertisers were interested in current information about users and the context in which advertisements were to be placed. Ex. 1036, 11:43-46, 14:6-11. These teachings would have provided a suggestion/motivation (see Section IV, referring to obviousness rationale (G)) for a POSITA to have designed the profile information to identify the website 14 (which is similar to Jaye's local server ID) to inform the advertising system 16 of the website that the user is currently visiting, which would provide context for a targeted advertisement. Ex. 1036, Abstract, 1:55-63 (explaining that advertisers are interested in "information about the web site that has been accessed by the viewer") 5:38-43. For example, if the user was currently visiting a sports-related website, it would have been advantageous to provide this information to advertising system 16 for it to provide

an advertisement for sports-related products. *Id.*; Ex. 1037, 8:44-49; Ex. 1035, 3:35-52 (although not relied on for this combination, Merriman still shows motivation in the prior art for providing this information). Thus, the prior art teaches a POSITA that the website 14 preferably sends profile information via the redirect messages to the advertising system 16.

437. Additionally, or alternatively, a POSITA would have designed the profile information to identify the user/visitor (which is similar to Jaye's local user ID) to inform the advertising system 16 of who the user is for the advertising system 16 to provide advertisement(s) targeted to the user. Ex. 1037, 8:62-65, 13:19-31. For example, based on the above-described teachings that advertisers were interested in current information about users (Ex. 1036, 11:43-46, 14:6-11), a POSITA would have understood that it would have been advantageous for the advertising system 16 to receive information indicating the user is an 18-25 year old male (or a user ID associated with this information) and thus would have been motivated by these teachings to combine Roth with Jaye. Ex. 1034, p. 149. By receiving this information, the advertising system 16 would have been able to provide advertisements for products typically purchased by 18-25 year old males. Ex. 1034, p. 149. Thus, there are multiple teachings, suggestions, and motivations for the proposed combination of Roth and Jaye.

438. It is also my opinion that other rationales also support my finding that the combination of Roth and Jaye would have been obvious. First, the combination of Roth and Jaye merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are Roth's system having the URL redirection and Jaye's URL redirection with appended profile information. Ex. 1036, 3:33-4:57, FIGs. 1, 2A; Ex. 1037, 6:32-7:57. These known elements would have been combined according to known methods, such as Jaye's method of appending profile information to URLs. Ex. 1037, 6:32-56. Finally, the combination yields predictable results, specifically it yields a URL redirection that passes profile information from Roth's website 14 to Roth's advertising system 16.

439. The combination of Roth and Jaye also involves simply substituting one known element for another to obtain predictable results. See Section IV (referring to obviousness rationale (B)). In particular, the combination would substitute Roth's URL with Jaye's special URL having profile information appended thereto. Ex. 1036, 3:51-57; Ex. 1037, 6:36-56.

440. Further, the combination of Roth and Jaye merely uses a known technique to improve similar devices in the same way. See Section IV (referring to obviousness rationale (C)). The known technique is Jaye's technique of appending profile information to a URL. Ex. 1037, 6:32-7:57. This technique is used by Jaye's

local server 15, which provides a webpage and is similar to Roth's web server providing website 14 including webpage 12. Ex. 1037, 4:53-5:19; Ex. 1036, 3:33-42. Jaye's technique would have improved Roth's similar web server providing website 14 by enabling it to send profile information in the redirect messages (to the extent it does not already) in the same way Jaye's technique improves its own local server 15.

441. The combination of Roth and Jaye also involves applying a known technique to a known device ready for improvement to yield predictable results. See Section IV (referring to obviousness rationale (D)). Again, the known technique is Jaye's technique of appending profile information to a URL. Ex. 1037, 6:32-7:57. The known device ready for improvement is Roth's system including the website 14 that already embeds a URL and is capable of appending profile information and the advertising system 16 that already stores user profiles and is ready to receive profile information from the URL. Ex. 1036, 3:33-4:57, 9:17-41, FIGs. 1, 2A, 4. The predictable result of the combination is Roth's website 14 appending profile information to the URL embedded in webpage 12 and Roth's advertising system 16 receiving the profile information in a redirect message and storing the profile information in a user profile in its database 16B (e.g., as additional fields in the CUD table 410 shown in Roth's Figure 4).

442. Finally, a POSITA would have had a reasonable expectation of success in achieving the above described combination of Roth and Jaye. This is because the combination merely involves a routine method of appending information to a URL, so that information is received and added to the appropriate user profile by the advertising system 16. Ex. 1037, 6:34-36, 7:46-57. A POSITA would have had the skills, including programming and database design skills, to carry out this straightforward implementation of appending profile information to a URL and adding the profile information into a database of user profiles. Ex. 1036, 5:64-6:10, 6:46-7:9, 7:36-43.

1. Independent Claim 1

a) [1PRE]: "An automated method of collecting profiles of Internet-using entities, the method comprising:"

443. A POSITA would have understood that Roth teaches this preamble. Roth discloses methods and systems for providing targeted advertisements over the Internet to websites. Ex. 1036, Abstract, 1:4-7, 1:66-2:7, claims 1-17. Roth's method includes updating database 16B, including CUD table 410, with profile information about the users accessing websites over the Internet (the claimed "Internet-using entities"). Ex. 1036, Abstract, 1:30-38, 4:26-57, 9:36-37, claims 16-17. Thus, Roth teaches a method of providing targeted advertisements that includes an automated method of collecting profiles of Internet users (the claimed "automated method of collecting profiles of Internet-using entities"). Roth's method, as

modified based on Jaye, comprises limitations [1A]-[1E]. *See* Sections XII.F.1.b-f, below. Thus, the combination of Roth and Jaye teaches limitation [1PRE].

b) [1A]: "(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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

444. Roth teaches the basic structure set forth in limitation [1A]. First, Roth's advertising system 16 is coupled to the Internet (the claimed "global computer network") and comprises one or more servers (e.g., servers 310 and 320 in FIG. 3) implemented by programs. Ex. 1036, 3:42-57, 6:20-25, 6:53-7:12, 7:34-45, 17:40-18:7, FIGs. 1, 3. Thus, the advertising system 16 is the claimed "programmed computer system."

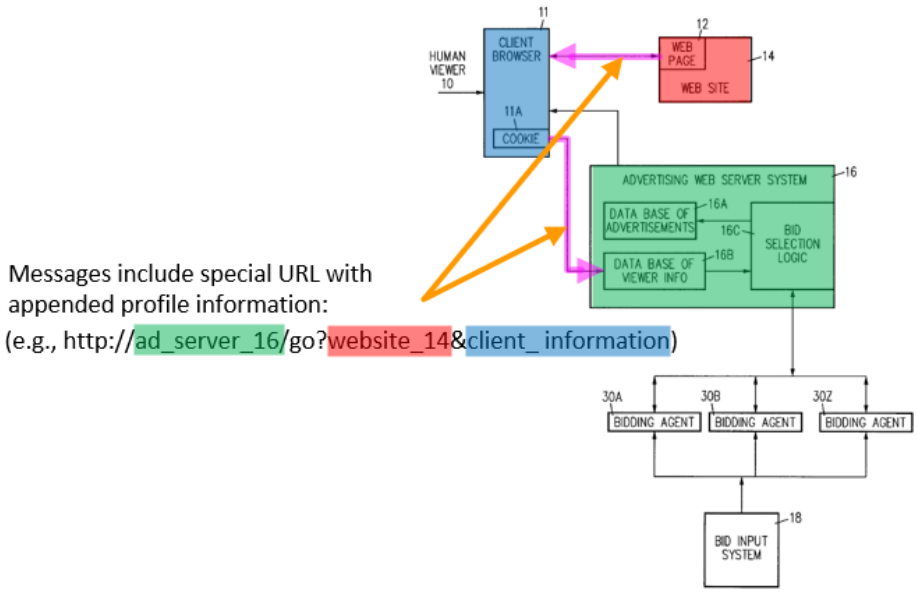
445. Second, a POSITA would have understood that Roth's website 14 is a web server controlled by one of thousands of unaffiliated third parties (the claimed "at least one server controlled by one of a plurality of unaffiliated third parties"). Ex. 1036, 3:47-50, 5:64-6:11, 9:8-12. A POSITA would have further understood that Roth's website 14 is controlled by an unaffiliated third party as that term is used in the '249 patent. *Id.* In other words, because the website 14 is not owned or controlled by the same party that owns or controls the advertising system 16, the

website 14 is controlled by an unaffiliated third party as that term is used in the '249 patent. *Id.* A POSITA would have also understood that the website 14 would have been separately owned from the advertising system 16 in most cases and would have considered the website 14 to be not closely associated with or related to the advertising system 16 (in accordance with at least one court's construction (see Section XI.B above)). Thus, it would have at least been obvious to modify Roth such that the website 14 is controlled by one of a plurality of third parties unaffiliated with advertising system 16 for the purpose of expanding the applicability of Roth's system so that the advertising system 16 is not limited to just providing targeted advertisements for websites that are commonly owned. *Id.*

446. Third, Roth's user/viewer 10 that uses a user computer operating the user's browser 11 is the claimed "entity that uses a user computer." Ex. 1036, 3:33-36. The user computer operating the user's browser 11 is coupled to the Internet and accesses the website 14 (the claimed "coupled to the global computer network and accessing a website"). Ex. 1036, 3:33-50, 18:33-35.

447. The combination of Roth and Jaye maintains Roth's system components, but modifies Roth's operation in a manner teaching the rest of limitation [1A]. Roth already discloses the website 14 sending a message to the user's browser 11 to cause the browser 11 to send another message to the advertising system 16. Ex. 1036, 3:33-4:57. In the Roth and Jaye combination, both of these

redirect messages (**magenta arrows**) include profile information (the claimed "partial profile") appended to the URL by the website 14 (**red**) and the profile information would have been information about the user of the browser 11 (**blue**). The following drawing reproduces the above illustration of the combination. See Section XII.F, above.



Thus, the combination of Roth and Jaye teaches electronically receiving, at the advertising system 16 (**green**) from the website 14 (**red**), profile information of the user (the claimed "electronically receiving at a programmed computer system…from at least one server…, a partial profile of an entity").

448. Further, the profile information (the claimed "partial profile") in the Roth and Jaye combination is available to the party controlling the website 14 given that the website 14 is what appends the profile information (the claimed "available to one of the third parties"). A POSITA would have understood that the server

providing website 14 electronically stores the profile information itself or has access to storage with the profile information, such that the profile information is electronically available (in accordance with at least one court's construction of available (see Section XI.D above)) to the party controlling website 14. And, the profile information in the combination would have contained at least one attribute related to the user of the browser 11 (the claimed "contains at least one profile attribute related to the entity"). For example, the profile information would have contained information identifying the user (similar to Jaye's local user ID or other client information collected by the website 14) or information identifying the website 14 that the user visited (similar to Jaye's local server ID). Ex. 1037, 6:36-46. With respect to the information identifying the website 14, that information is related to the user because the webpages that the user views is representative of the user's interests and therefore relevant for targeted advertising. Ex. 1036, 1:55-63, 2:20-28.

449. Accordingly, a POSITA would have found that the combination of Roth and Jaye teaches electronically receiving at the advertising system 16 coupled to the Internet, from the website 14, profile information of a user that uses the browser 11 coupled to the Internet and accessing the website 14, which profile information is available to the party controlling the website 14 and contains at least one attribute related to the user. This teaches the claimed "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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity" in limitation [1A]. Thus, the combination of Roth and Jaye teaches limitation [1A].

c) [1B]: "(b) automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity;"

450. With respect to Figure 4 (below, annotated), Roth discloses CUD table 410 and historic viewer/user data (HUD) table 408 that are linked by the current user ID (CU) field (**orange**) (e.g., an I/Code which was a standard identifier assigned to individuals and was associated with demographic information), and together store a user profile (the claimed "electronically stored profile"). Ex. 1036, 4:45-49, 9:27-37, 9:47-58, 10:6-20, 12:11-22. A POSITA would have understood that the advertising system 16 (which is the claimed "computer system" as discussed above) automatically (with no human control (see Section XI.E. above)) receives profile information including various attributes (e.g., website ID (WS), site page ID (SP), and timestamp (TS) (**orange**)) and electronically stores them in database 16B on a user-by-user basis to form a user profile for each user. Ex. 1036, 4:26-57, 8:20-28,

8:65-9:4, 9:36-37, 12:11-22. Thus, Roth's CUD table 410 and/or HUD table 408 in Figure 4 teaches storing a user profile (**purple**) that meets the claimed "electronically stored profile."

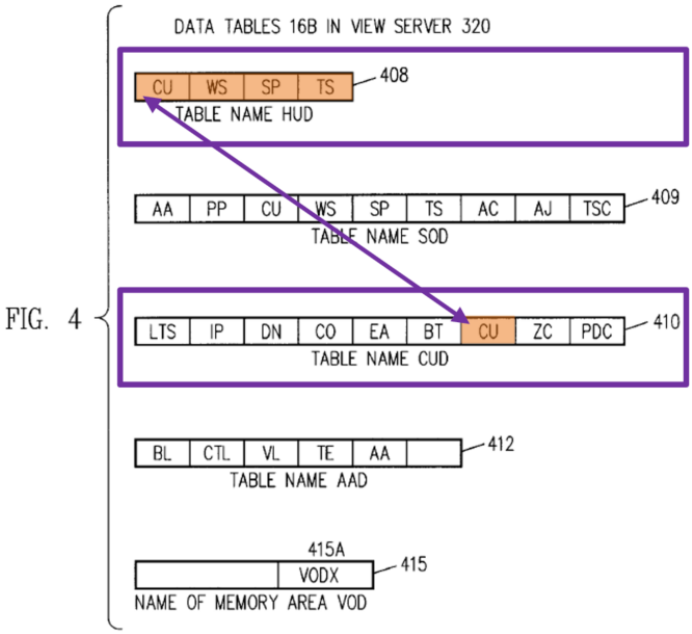


FIG. 4

Ex. 1036, FIG. 4 (annotated)

451. In the combination of Roth and Jaye, the profile information appended to the URL by website 14 and received by advertising system 16 (which is the claimed "partial profile" as discussed above) would have included any of the various attributes known to be of interest to advertisers. Ex. 1036, 8:9-15 (I/CODE associated with demographic information), 10:49 (sending I/CODE and associated data to bidding agents/advertisers), 11:43-46, 14:6-11, 18:54-62. Therefore, in the combination of Roth and Jaye, Roth's database 16B in Figure 4 would have been modified accordingly to store the various attributes (e.g., one or more fields or

columns would have been added). Ex. 1036, 7:36-43, 8:11-15 (explaining that database 16B has additional fields that are not shown for storing demographic information). Such additional modification would have been obvious and straightforward because a POSITA would have been motivated to capture any of the various attributes in the profile information for use in targeted advertising and it merely involves routine database design skills. Ex. 1036, 7:34-54, 18:36-60. Although obvious, such additional modification is not necessary to meet the claims because the claims do not specify a particular profile attribute. For simplicity, the CU and WS (**orange**) attributes of Roth are specifically discussed because related attributes are expressly disclosed as being appended by Jaye. In particular, Jaye discloses appending a local user ID, which relates to Roth's CU attribute identifying the user of browser 11, and a local server ID, which relates to Roth's WS attribute identifying the website 14. Ex. 1037, 5:5-19, 5:49-6:6, 6:40-43; Ex. 1036, 9:51, 9:53-54, 9:65, 10:17.

452. Therefore, in one example of the Roth and Jaye combination, a POSITA would have at least included the CU and WS attributes in the profile information appended to the URL. And, the combination of Roth and Jaye teaches that the advertising system 16 electronically stores the profile information by adding the attributes (e.g., CU and WS) in the profile information to the user profile for the particular user (the claimed "automatically with the computer system electronically

storing the received partial profile by adding the received partial profile to an electronically stored profile").

453. Further, Roth teaches updating, upon receipt of each view-op, HUD 408 and CUD 410 related to the specific users/viewers that triggered the view-op (the claimed "which stored profile is believed to be related to the same entity"). Ex. 1036, 4:26-57, 12:11-66, 13:35-37, 17:28-29. A POSITA would have understood that Roth's advertising system 16 determines that profile information is related to the same entity by matching a received CU with the CU in its database 16B, thereby meeting AlmondNet's proposed construction for "believed to be related." See Section XI.J above.

454. Accordingly, the combination of Roth and Jaye teaches automatically with the advertising system 16 electronically storing the received profile information by adding it to an electronically stored user profile that is related to the same user of browser 11. This teaches the claimed "automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity." Thus, the combination of Roth and Jaye teaches limitation [1B].

d) [1C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

455. Roth discloses that the website 14 transmits the webpage 12, including an HTML reference (i.e., a URL) to the advertising system 16. Ex. 1036, 3:34-57, 4:50-61, 5:20-24, 5:64-6:11, 6:41-52. Roth specifically discloses an HTML reference and directs the reader to other books for further details about how this HTML reference works. A POSITA would have understood that the HTML reference includes a URL that redirects the user's browser 11 to the advertising server 16. Ex. 1035, 1:39-44 and 3:64-4:5 (Merriman represents prior art teachings a POSITA would have been familiar with). When websites have a portion of the content/advertisement that has to be served by an ad server, there is an HTML reference or link to the ad server that provides the location (specifically a URL) of the ad server. In view of the well-known URL redirection methods as discussed above in Section VIII.D, a POSITA would have understood that the user's browser will redirect to the advertisement server using this URL to retrieve the advertisement or other information. Accordingly, the sending of a URL in the webpage 12 from one server (e.g., website 14) to automatically cause transmission of a message to another server (e.g., advertising system 16) is "automatic electronic URL redirection." Moreover, this sending taught by Roth meets AlmondNet's proposed construction meaning "obtaining certain information for at least a portion of an

accessed page/site from a different location." Ex. 1011, 45-49, 71. Further, it also meets the construction of the Court in the 1035 D. Del. Case, which construed a similar term in the related '582 patent to mean "obtaining a requested webpage or a portion of a requested webpage from a different location." Ex. 1012, 117-119 (pp. 92-94 of Transcript). And, this sending taught by Roth also meets the construction of limitation [1C] as meaning "a partial profile is received as a result of a user computer accessing a website page, thus causing a web server to tell the user computer's browser to obtain certain information for a portion of the accessed page from a different location" (as AlmondNet proposed in the *Oath Holdings* case, see Section XI.I above). A POSITA would have also understood that Roth's URL redirect occurs without any intervening user action and therefore especially comports with the PTAB's construction of "as a result of automatic electronic URL redirection" as meaning as meaning "as a result of automatic electronic URL redirection that does not preclude intervening user action between the time of URL redirection and receipt of the partial profile." Ex. 1019, 112-113 (pp. 6-7 of Institution Decision); See Section XI.H, above.

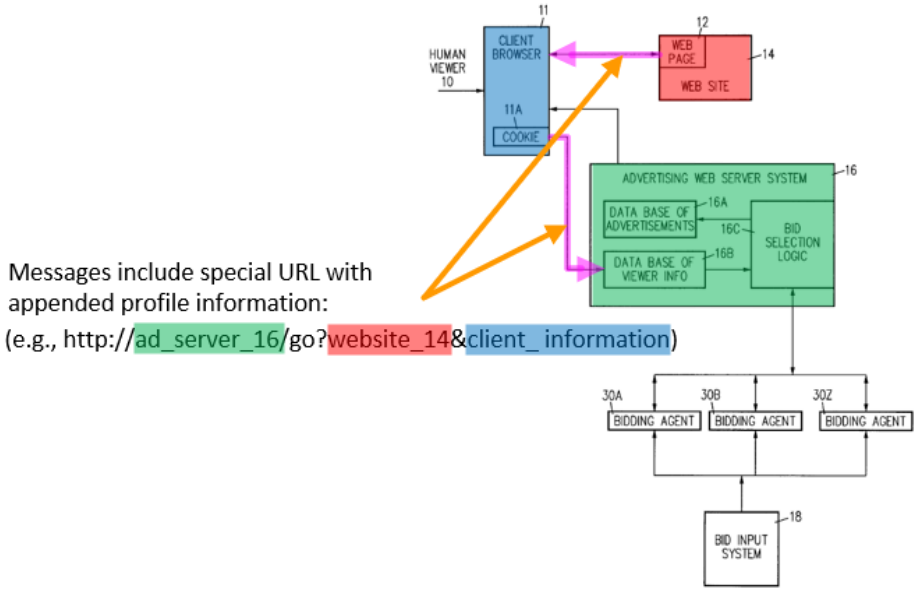
456. Moreover, the URL is embedded in an HTML tag (e.g., an image tag) within the webpage 12 of the website 14 (the claimed "portion of a page of the website") accessed by the user computer that operates the browser 11 (the claimed "accessed by the user computer"). Ex. 1036, 3:34-57, 4:50-61, 5:20-24, 5:64-6:11.

An image tag in HTML is used to display images on a web page. Ex. 1047, 153, 159-161, 173, 239. Upon encountering an image tag, the browser recognizes it as a request to display an image and proceeds to process the image attributes. *Id.* The browser reads the "src" attribute of the image tag to determine the source file of the image. *Id.* The "src" attribute contains the URL or relative path to the image file. *Id.* The browser then sends a request to retrieve the image file from the specified source. *Id.* Once the image file is retrieved, the browser starts loading the image. *Id.* Once the image is fully loaded, the browser displays it within the allocated space on the web page. *Id.*

457. Roth also discloses the advertising system 16 receiving data from the cookie 11A when the redirect causes the browser 11 to communicate with the advertising system 16. Ex. 1036, 4:26-57, 10:39-40, 18:66-19:1. Therefore, Roth teaches the advertising system 16 receiving profile information as a result of automatic electronic URL redirection from a portion of the webpage 12 of the website 14 accessed by the user computer operating the browser 11. Roth thus teaches limitation [1C], except that it does not expressly disclose the profile information (received by the advertising system 16) coming from the website 14 under the plain and ordinary meaning of limitation [1A].

458. In the combination of Roth and Jaye, the same URL redirect (**magenta arrows**) from Roth is performed, but with profile information appended to the URL,

as illustrated in the drawing below (which is the same as the drawing provided above that uses Roth's Figure 1 and shows a pseudo-URL like the one taught by Jaye).



459. Thus, the combination of Roth and Jaye teaches that receiving the profile information (by the advertising system 16 (**green**) from the website 14 (**red**) in accordance with limitation [1A]) is achieved as a result of automatic electronic URL redirection from a portion of the webpage 12 of the website 14 (**red**) accessed by the user computer that operates the browser 11 (**blue**). This teaches the claimed "wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer." Thus, the combination of Roth and Jaye teaches limitation [1C].

e) [1D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"

460. Roth teaches that the advertising system (which is the claimed "computer system" as discussed above) updates the database 16B that has the database structure shown in Figure 4 (below, annotated). Ex. 1036, 9:17-11:20, FIG. 4. As shown in Figure 4 (below, annotated), Roth's database 16B includes a field (WS (**orange**)) for recording information identifying the website (e.g., the website 14) that the viewer/user accessed and that caused the CUD and HUD tables (which either alone or together form the claimed "stored profile" (**purple**) as discussed above) to be updated with viewer characteristics and historic viewer data. Ex. 1036, 4:26-57, 9:49-51, 12:11-66.

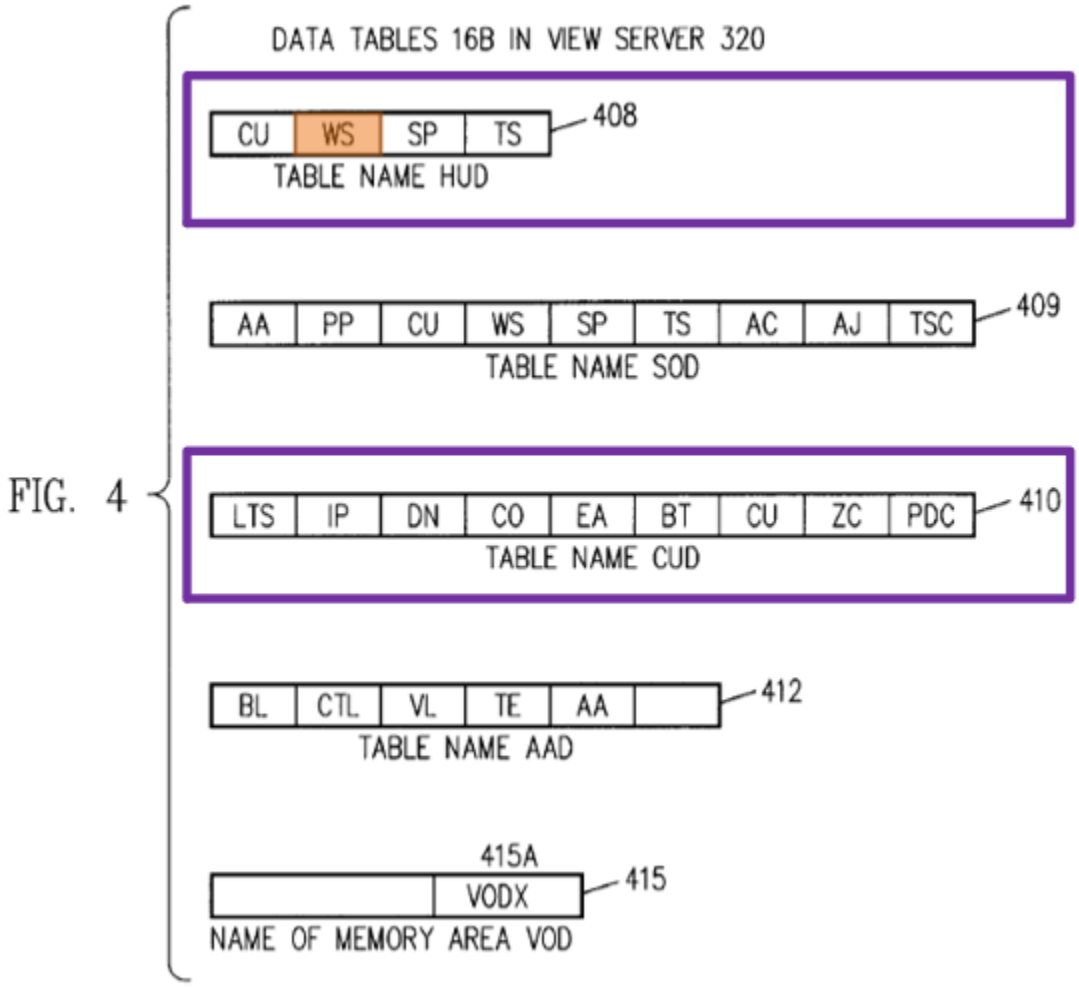


FIG. 4

Ex. 1036, FIG. 4 (annotated)

461. A POSITA would have understood that Roth teaches that the advertising system 16 automatically (with no human control (see Section XI.E above)) generates the information in the WS field for identifying the website (e.g., the website 14) that the user visited. Ex. 1036, 7:34-43, 12:41-13:2, 18:44-62. By generating the information identifying the website 14 and recording it in a field for "WS" within the database 16B, Roth generates an electronic record of the party controlling the website 14 that contributed the profile information. Accordingly, the

combination of Roth and Jaye teaches the advertising system 16 automatically generating an electronic record in the WS field, which is a record of the party controlling the website 14 that contributed the profile information to the user profile. This teaches the claimed "automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes." The combination of Roth and Jaye preserves this feature and thus also teaches limitation [1D].

462. Further, as discussed above (see Section XII.F), in the combination of Roth and Jaye, profile information includes various attributes in addition to WS and the database 16B of Roth would have been modified to store the various attributes. For example, profile information would have included demographic information (e.g., birthdate, gender, etc.) and WS indicating website 14 that contributed that profile information would have been stored in association with the contributed profile information. Ex. 1037, 6:40-46.

463. A POSITA would have been motivated to record WS in association with the contributed profile information to keep a record of which party provided the profile information so that party would be rewarded. Ex. 1039, ¶¶ [0111] (describing payment for providing profiles), [0114] (describing compensation for providing information for a profile); Ex. 1045, Abstract, 4:60-5:12, 7:23-8:14. A POSITA would have understood that rewarding the party providing the profile

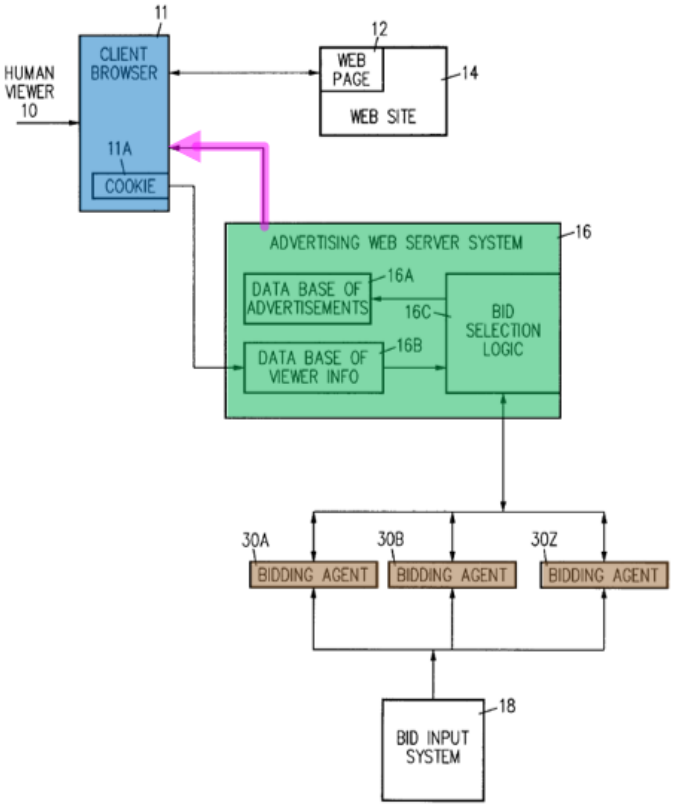
information is a way to incentivize parties to provide information that otherwise would not be shared. Ex. 1039, ¶¶ [0111] (describing payment for providing profiles), [0114] (describing compensation for providing information for a profile); Ex. 1045, Abstract, 4:60-5:12, 7:23-8:14. A POSITA would have also kept this record for determining the reliability of the information based on its source as was known. Ex. 1039, ¶¶ [0074]-[0075]; Ex. 1043, Abstract, 1:43-47, 1:51-63, 7:48-60, 8:37-45, 9:50-10:32. For example, a POSITA would have been motivated to provide advertisers with a record of the source of information to determine the reliability so that the advertisers may, e.g., determine a payment amount for the information, or determine whether to trust the information before using it to match an advertisement to the user. *Id.* Additionally, the type of website (e.g. baseball related or music related; or ending with a .com or .edu) could be useful in profiling the type and interest of the user. Recording the source of the profile information would have merely involved straightforward database usage and management processes that were well-within the skill level of a POSITA. Ex. 1043, 2:50-67, 7:36-8:46, 9:50-10:32.

464. In sum, the combination of Roth and Jaye teaches the advertising system 16 automatically generating an electronic record indicating the party controlling the website 14 that contributed the profile information to the user profile. This teaches the claimed "automatically with the computer system generating an

electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes." Thus, the combination of Roth and Jaye teaches limitation [1D].

f) [1E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."

465. With respect to Figure 1 (below, annotated), Roth also shows bidding agents 30A-30Z (**brown**), which are programs of agents for advertisers or advertisers themselves. Ex. 1036, 2:7-10, 2:20-23, 3:59-4:25, 5:27-29, 5:38-43, 7:63-67, 11:63-12:10, FIG. 1. As shown below, the bidding agents/advertisers 30A-30Z are third parties because they are separate from the website 14 and from the advertising system 16, and a POSITA would have understood that advertisements for goods or services of the advertisers are third-party advertisements or third party announcements (in accordance with the PTAB's construction (see Section XI.A, above)). A POSITA would have understood that, in general, the bidding agents 30A-30Z and the website 14 on which they are bidding to advertise would be controlled by separate (unaffiliated) parties. See Section VIII.E above. Further, Roth teaches using data in the user profiles of its database 16B to deliver (over the Internet) targeted advertisements for third-party advertisers to the user computer that operates the browser 11. Ex. 1036, Abstract, 2:3-10, 3:57-4:21, 4:58-5:19.



Ex. 1036, FIG. 1 (annotated)

466. In particular, Roth teaches that the advertising system 16 (**green**) sends a targeted advertisement to browser 11 (**blue**) over the Internet. Ex. 1036, 3:57-4:21, 4:58-5:19. Therefore, Roth teaches that the user profile, including added profile information, comprises data used in targeting advertisements for advertisers to the user computer (which operates the browser 11) over the Internet. This teaches the claimed "wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network." Thus, Roth teaches limitation [1E], except that

it does not expressly disclose the profile information coming from the website 14 under the plain and ordinary meaning of limitation [1A].

467. The combination of Roth and Jaye teaches that the profile information (appended to the URL) comes from the website 14, as discussed above. Accordingly, the combination of Roth and Jaye teaches that the user profile (stored in CUD table 410 and HUD table 408 within Roth's database 16B), including the added profile information (received from the website 14), comprises data used in targeting advertisements for advertisers to the user computer (which operates the browser 11) over the Internet. This also teaches the claimed "wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network." Thus, the combination of Roth and Jaye teaches limitation [1E]. Finally, because the combination teaches all limitations of claim 1, it is my opinion that claim 1 would have been obvious to a POSITA.

2. Dependent Claim 3: "The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer."

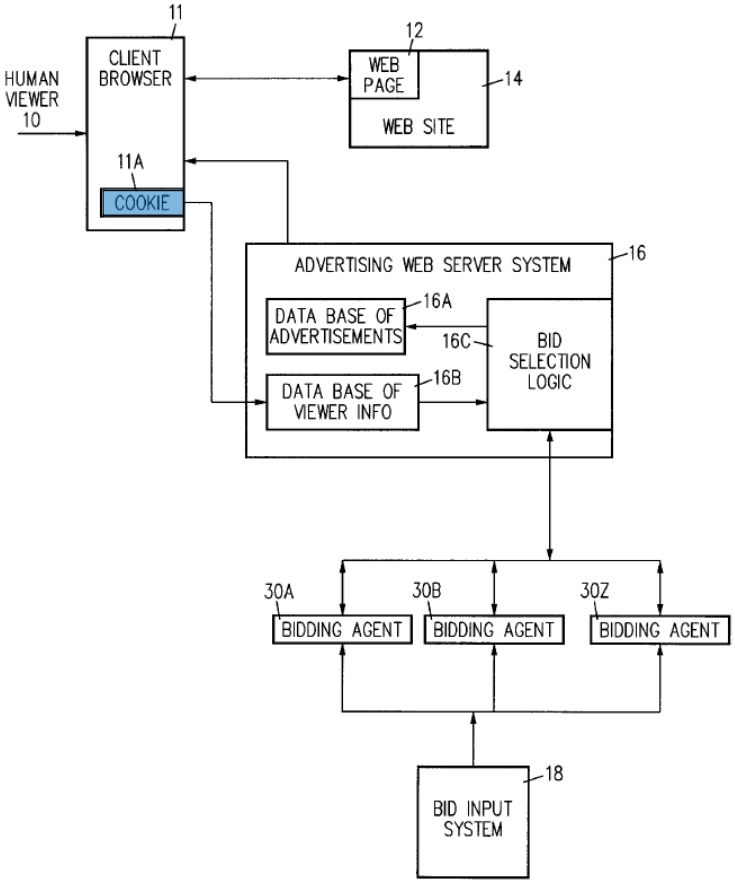
468. Claim 3 of the '249 Patent depends from claim 1 and further requires "wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received

partial profile and the stored profile being related to the same user computer." Ex. 1001, claim 3. A POSITA would have understood that this feature is easily implemented in a standard database. See Section VIII.B. As discussed above, claim 1, from which claim 3 depends, is taught by the combination of Roth and Jaye.

469. As I discussed above with respect to limitation [1B], Roth describes an advertising system 16 (which is the claimed "computer system") that includes databases storing information (the claimed "stored profile") of viewer profile information, including attributes such as the user's IP address, cookie information, and historic viewer data. Ex. 1036, 1:10-16, 3:33-40, 4:26-32, 4:44-57, 5:20-23, 6:20-25, 6:53-58, 9:47-48, 10:6-18, 12:11-22, FIGS. 1, 4. Roth describes that its system 16 includes a database of viewer profile information 16B that provides a profile (e.g., of the sites accessed) for each particular viewer. Ex. 1036, 1:30-33, 4:26-32, 9:1-4, 18:44-60, FIG. 4. As I further explained above, a POSITA would have known that "an entity" may be a human viewer 10 using a client browser 11 to access web pages 12 on web sites 14. Ex. 1036, 1:10-16, 1:41-44, 3:33-50, FIG. 1. As explained above at Section XII.F.1.c, the combination of Roth and Jaye also teaches "with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity." Therefore, it is my opinion that Roth (and thus, the combination of Roth and Jaye) renders obvious "the computer

system adding the received partial profile to a stored profile believed related to the same entity," as required by claim 3 and by limitation [1B].

470. As previously explained with respect to limitation [1A], Roth (and thus, the combination of Roth and Jaye) discloses that the advertising system 16 receives the viewer profile information via an HTML reference to the advertising system 16 (e.g., when a view-op occurs). Ex. 1036, 3:33-40, 4:26-32, 4:44-57, 5:20-23, 12:11-22. Roth teaches that client browser 11 includes a cookie 11A (**blue**) which provides information from the client browser 11 to the advertising system 16 and, as I explained above with respect to limitation [1A], the cookie information would have been included in the message received by Roth's advertising system 16 when there is a view-op. Ex. 1036, 3:33-40, FIG. 1.

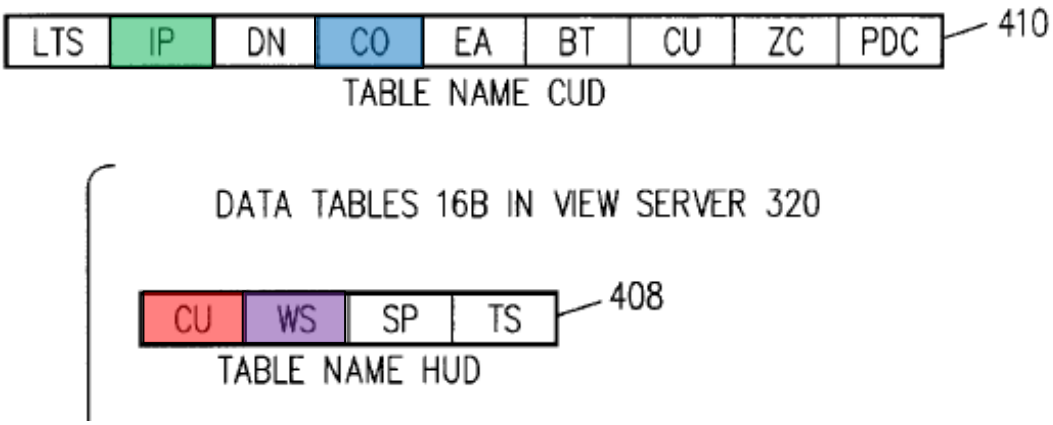


Ex. 1036, FIG. 1 (annotated)

Roth further explains that when a view-op presents itself, the advertising system 16 updates the information about the viewer which is in tables within the data base 16B (the claimed "stored profile"). Ex. 1036, 4:26-32, 4:44-49, 12:11-22. Specifically, Roth uses the information from the cookie 11A to update the data base of viewer profile information (e.g., to include information indicating that the viewer has accessed a particular web page). Ex. 1036, 4:44-49.

471. Roth gives examples of tables of information that might be included in the viewer/user profile stored at viewer data base 16B, such as CUD table 410 that

stores information on viewers and their characteristics and HUD table 408 that stores historic viewer data. Ex. 1036, 9:31-32, 9:47-58, 10:6-18, FIG. 4. For example, as shown in the annotated figures below, CUD table 410 may include information such as the IP address (IP, **green**) and cookie information (CO, **blue**), while HUD table 408 may include information such as which sites the viewer has previously accessed (WS, **purple**) and the current viewer/user ID (CU, **red**). *Id*.



Ex. 1036, FIG. 4 (cropped, annotated)

472. It would have been obvious to a POSITA that when viewer profile information is received by the advertising system 16 and the advertising system 16 updates the database 16B with viewer profile information such as the current viewer ID and sites the viewer has accessed, Roth's system must use identifying information of the viewer (such as the cookie information) to determine which profiles/tables in the database 16B to update. Ex. 1036, 3:33-40, 4:26-32, 4:44-57, 5:20-23, 12:11-22, FIGS. 1, 4. For example, based on the cookie information or IP address, Roth's

system would update the IP and CO entries in a particular CUD table 410 and simultaneously update the CU and WS entries in a particular HUD table 408 that corresponds to the current viewer using the client browser 11 (e.g., a viewer associated with received cookie information). Ex. 1036, 8:20-28, 9:31-32, 9:47-58, 10:6-18, FIG. 4. It would thus have been obvious to a POSITA that Roth teaches updating the tables with viewer profile information of the user of client browser 11, identified by the same current viewer ID associated with said tables (the claimed "on account of the received partial profile and the stored profile being related to the same user computer"). Therefore, when the advertising system 16 receives the CU in a message from the user's computer, it would have been obvious to a POSITA that the profile information included in the message would be added to the portion of the database 16B (specifically a portion of CUD table 410 and/or HUD table 408) that includes the same CU. *Id*.

473. A POSITA would have understood that Roth does this on account of the received viewer profile information and the user profile being related to the same user computer that operates the browser 11, which is identified from the cookie 11A. Ex. 1036, 19:1-4. The CU in Roth would identify the user computer that operates the user's browser 11, and not the actual person operating it. Ex. 1036, 19:1-4. The actual person could not be determined unless further identification steps were taken, such as authentication using a fingerprint or password.

474. Accordingly, as shown above, Roth (and thus, the combination of Roth and Jaye) teaches the additional limitations included in dependent claim 3, and renders claim 3 obvious to a POSITA.

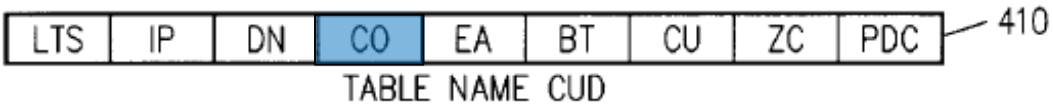
3. Dependent Claim 4: "The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer."

475. Claim 4 of the '249 Patent depends from claim 3 and further requires "wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer." Ex. 1001, claim 4. As discussed above, claim 3, from which claim 4 depends, is taught by the combination of Roth and Jaye.

476. As I explained above with respect to claim 3, Roth teaches "adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile **being related to the same user computer**." (emphasis added). It would have been obvious to a POSITA that Roth's system must "determine[] that the received partial profile and the stored profile are related to the same user computer," in order to perform the "adding" limitation of claim 3.

477. As I also explained above with respect to claim 3, Roth teaches that the client browser 11 has a cookie 11A. Ex. 1036, 3:38-40, FIG. 1. Roth also explains that in order to update the data base of user information, Roth's advertising system

16 "obtains data from cookie 11A," to perform the updating. Ex. 1036, 4:44-49, 5:52-57. It would have been obvious to a POSITA that in order to obtain the data from the cookie, Roth's advertising system 16 reads the cookie. And, because Roth describes performing the updating "[d]uring the normal operation of the system" and "upon receipt of a view-op from the browser 11" without any requirement of receiving user input, the reading of the cookie would occur "automatically." Ex. 1036, 4:44-49, 12:11-22. As an example, it would have been obvious to a POSITA that Roth's system automatically reads the cookie 11A to determine, based on the cookie information (CO, **blue**, as shown in table 410), which database and/or tables in a particular database (the claimed "stored profile") are related to the client browser 11 (the claimed "same user computer") that cookie 11A and the other viewer information were received from (the claimed "partial profile"). *See* Section XII.F.2, above; *see also* Ex. 1036, 4:44-49, 5:52-57, 9:47-48, 10:6-18, FIG. 4.



Ex. 1036, FIG. 4 (cropped, annotated)

478. In short, a POSITA would have found that Roth teaches determining that received profile information and a stored user profile are related to the same user computer operating browser 11. And, a POSITA would have understood that this

user computer is identified by reading the cookie 11A on the user's computer. Ex. 1036, 3:38-46, 4:45-57, 18:66-19:4.

479. The combination of Roth and Jaye preserves these features of Roth. Thus, the combination of Roth and Jaye teaches that the advertising system 16 determines that the received profile information and the stored user profile (in database 16B) are related to the same user computer (which operates the browser 11) by automatically reading a cookie on the user computer and sent to the advertising system 16 when there is a view-op. This teaches "the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer," as required by claim 4.

480. Accordingly, as shown above, Roth (and thus, the combination of Roth and Jaye) teaches the additional limitations included in dependent claim 4, and renders claim 4 obvious to a POSITA.

4. Dependent 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 stored profile, the profile attributes used in targeting the advertisements."

481. Claim 5 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile

attributes used in targeting the advertisements." Ex. 1001, claim 5. As discussed above, claim 1, from which claim 5 depends, is taught by the combination of Roth and Jaye.

482. As I explained above at Section XII.F.1.e with respect to limitation [1D], Roth maintains an electronic record (e.g., information, such as a table of information shown in FIG. 4, in a database 16B) of which unaffiliated third party (e.g., which web site, controlled by a third party) contributed, to the stored profile (e.g., the profile of viewer information at database 16B), particular profile attributes (e.g., particular viewer data). In particular, Roth teaches a WS field or a new field, which are each an electronic record of the party controlling website 14 that contributed the profile information (e.g., birthdate, gender, etc.). See Section XII.F.1.e, above. Roth's Figure 4 (below, annotated) specifically shows WS (**orange**) as being part of the user's profile (**purple**) and therefore associated with the other profile information.

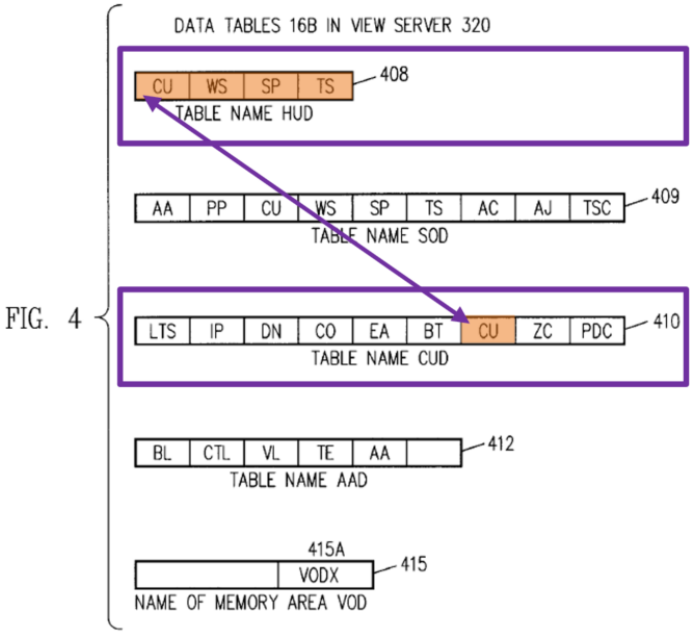


FIG. 4

Ex. 1036, FIG. 4 (annotated)

483. A POSITA would have understood that any of the information in this data structure would have been used for targeted advertising. Ex. 1036, Abstract, 5:20-45, 10:31-11:62, 14:6-49, 18:36-60. As I also explained above at Section XII.F.1.f with respect to limitation [1E], Roth teaches that the stored profile (including, e.g., particular profile attributes) comprises data used in targeting third-party advertisements. Thus, the information in Roth's WS field or in a new field indicating the website 14's owner that contributed the user's birthdate or gender is an electronic record of the party controlling website 14 that contributed, to the user profile, attributes of the profile information used in targeting the advertisements. This teaches the claimed "electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the

advertisements." Moreover, this record is also automatically and electronically maintained by advertising system 16 (the claimed "automatically with the computer system electronically maintaining…"), just as it is automatically generated. See Section XII.F.1.e, above.

484. To the extent that claim 5 requires a separate record from the record in limitation [1D], it would have been obvious to add, in database 16B (e.g., as part of the CUD table 410 or SOD table 409 which identifies sold view-ops), a record indicating that attributes provided in profile information from website 14 were used for targeted advertising. Ex. 1037, 14:22-25. This record would have been obvious to enable the advertising system 16 to provide reports detailing where profile information came from and to reward (e.g., financially) websites (like website 14) for providing profile information that is desirable for targeted advertising. *Id.*; Ex. 1039, ¶¶ [0111] (describing payment for providing profiles), [0114] (describing compensation for providing information for a profile); Ex. 1045, Abstract, 4:60-5:12, 7:23-8:14; Ex. 1035, 4:32-42, 8:32-37 (although Merriman is not relied on for this ground, it still provides a prior art teaching that such reports were desirable).

485. A POSITA would have been motivated to report where the attributes used for matching users with advertisements came from to give advertisers further insights. Also, adding a separate record indicating that attributes provided in profile information from the website 14 were used for targeted advertising would have been

straightforward, just as generating other records in database 16B is straightforward. Ex. 1036, 18:36-60; Ex. 1037, 13:23-41.

486. In short, the viewer profile information (including, e.g., particular profile attributes) are received, by Roth's advertising system 16 and from a web site 14, as part of a view-op. As a result, targeted ads are placed on the web site in response to the view-op. And, Roth teaches its advertising system 16 electronically maintaining an electronic record (e.g., the WS field) of which unaffiliated third party (the owner or operator of web site 14) contributed profile attributes used in selecting advertisements to be placed on a particular web site and/or site page (the claimed "used in targeting the advertisements"). Ex. 1036, 9:47-48, 9:59-67, FIG. 4.

487. Accordingly, as shown above, the combination of Roth and Jaye teaches the additional limitations included in dependent claim 5, and renders claim 5 obvious to a POSITA.

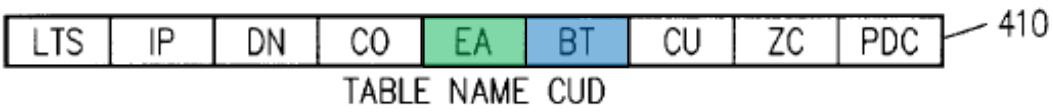
5. Dependent Claim 6: "The method of claim 1 further comprising automatically with the computer system electronically determining whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile."

488. Claim 6 of the '249 Patent depends from claim 1 and further requires "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 the stored profile." Ex. 1001, claim 6. As discussed above,

claim 1, from which claim 6 depends, is taught by the combination of Roth and Jaye. Additionally, as discussed in the Technical Background section (see Section VIII.B on databases), a POSITA would have known the use of database queries to determine whether received data contains any data that is not previously stored in the database when adding the received data to the database, and therefore would have used queries to determine "whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile," as set forth in the claim.

489. As I explained above with respect to limitations [1A] and [1B], Roth teaches receiving viewer profile information (the claimed "partial profile" including claimed "profile attributes") in response to a view-op and storing the information as part of a user profile in a viewer database 16B (the claimed "stored profile"). As discussed with respect to claim 3 above, Roth also teaches that when a view-op presents itself (e.g., when the viewer information is received) the advertising system 16 (the claimed "computer system") updates the information about the viewer in the database 16B. Ex. 1036, 4:26-43, 12:11-22, FIG. 4. As part of this update process, Roth's system uses the viewer information to update various tables within the database 16B, such as Current Viewer Data (CUD) table 410. Ex. 1036, 4:26-43, 9:47-48, 10:6-18, 12:11-22, FIG. 4.

490. As shown in the annotated CUD table 410 below, CUD table 410 includes information concerning the viewer and their characteristics (the claimed "profile attributes"). Ex. 1036, 9:47-48, 10:6-18, FIG. 4. For example, CUD 410 includes information such as an email address (EA, **green**), and/or browser (BT, **blue**). *Id*.



Ex. 1036, FIG. 4 (cropped, annotated)

491. It would have been obvious to a POSITA that as part of Roth's system for updating the information about the user in database 16B (e.g., in a CUD table 410), Roth's system would determine whether the received viewer information ("partial profile") contains any particular information of the viewer ("profile attributes about the entity") that were not previously contained in the database 16B ("stored profile"). For example, it would have been obvious that Roth would determine whether a new email address or new browser information is included in the received viewer information, in order to ensure that the viewer information in the database (such as in CUD table 410) remains accurate and up-to-date. Roth explicitly states that CUD table 410 is a table of "current viewer data," meaning Roth's system would determine if any new ("not previously contained") information

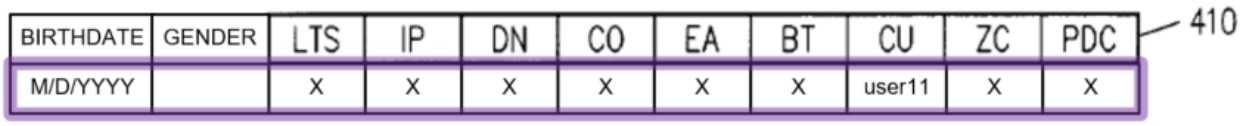
is included in the viewer information to update CUD table 410. Ex. 1036, 4:26-43, 9:47-48, 10:6-18, 12:11-22, FIG. 4. A POSITA would have recognized that Roth provides a rationale for determining whether the received viewer information contains any information about the viewer not previously contained in the profile, because Roth describes that the view-op information included in the database 16B is provided to bidding agents to solicit bids for providing targeted advertisements via the view-op. Ex. 1036, 4:26-48, 7:11-25, 10:31-37, 12:24-29, 18:44-65, FIG. 1.

492. A POSITA would have understood that Roth's advertising system 16 also receives profile information for the same user from a plurality of websites like website 14. Ex. 1036, 3:47-50. In other words, a POSITA would have understood that although Roth's Figure 1 shows only one website 14, other similar websites would be visited by the same viewer/user 10 and therefore also provide information for the same viewer/user to be stored in the user's profile by the advertising system 16. In addition, for attributes of profile information from different websites to be stored in the same user profile, the advertising system 16 would have had to determine which attributes are not already in the user profile. For example, upon receiving new profile information indicating a new website being visited, the advertising system 16 would have determined that the new website is not in the user's profile. This is one example of how Roth meets the claimed "determining

whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile."

493. Also, for attributes of profile information from different websites 14 to be stored on a user-by-user basis, the advertising system 16 would have to check whether attributes in received profile information for a user were already stored in that user's profile. Without performing this check, information would be overwritten or undesirably duplicated. As I described above at Section VIII.B, it was known to update data records (i.e., user profiles) without adding duplicate information. Ex. 1043, 8:4-15. A POSITA would have been motivated to avoid adding duplicate information to Roth's database structures in order to limit the amount of storage space occupied by each user's profile. Accordingly, a POSITA would have been motivated to perform the check described above (to the extent it was not already part of the extant database technology used to implement Roth's database 16B) to ensure duplicate data is not being added when the received profile information is stored in Roth's database structures. For example, if the user profile (**purple**) was as shown in the below drawing (which crops Roth's Figure 4 to excerpt the CUD table 410 and then modifies that table to include additional fields for BIRTDATE and GENDER and a row for storing a profile for the user of Roth's browser 11 (i.e., user11) as previously explained) when new profile information indicating the user's birthdate and gender was received, a POSITA would have

understood (or at least found it obvious) that the advertising system 16 would have determined that the user profile (**purple**) already contains the user's birthdate but does not contain the gender.



BIRTHDATE	GENDER	LTS	IP	DN	CO	EA	BT	CU	ZC	PDC
M/D/YYYY		X	X	X	X	X	X	user11	X	X

Ex. 1036, FIG. 4 (cropped and modified)

In addition, each of the above steps would have been performed using extant database technology (See Section VIII.B).

494. At least from this example, it should be understood that the combination of Roth and Jaye teaches that the advertising system 16 would have automatically and electronically determined whether the received profile information contains any profile attributes about the user of Roth's browser 11 that were not previously contained in the user's profile. This meets the claimed "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 the stored profile."

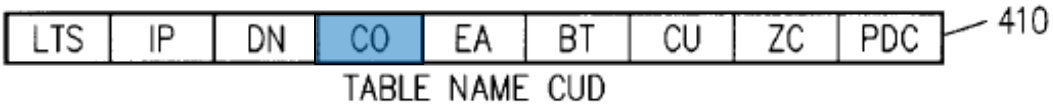
495. Accordingly, as shown above, Roth (and thus, the combination of Roth and Jaye) teaches the additional limitations included in dependent claim 6, and renders claim 6 obvious to a POSITA.

6. Dependent 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."

496. Claim 10 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection." Ex. 1001, claim 10. As discussed above, claim 1, from which claim 10 depends, is taught by the combination of Roth and Jaye.

497. As I explained further above with respect to claims 3 and 4, Roth teaches that the client browser 11 has a cookie 11A. Ex. 1036, 3:38-40, FIG. 1. Roth also explains that in order to update the data base of user information, Roth's advertising system 16 "obtains data from cookie 11A." Ex. 1036, 4:44-49, 4:52-57. It would have been obvious to a POSITA that in order to obtain the data from the cookie Roth's advertising system 16 reads the cookie 11A. And, because Roth describes performing the updating "[d]uring the normal operation of the system" and "upon receipt of a view-op from the browser 11" without any requirement of receiving user input, the reading of the cookie would occur "automatically." Ex. 1036, 4:44-49, 12:11-22. As an example, it would have been obvious to a POSITA that Roth's system automatically reads the cookie to determine, based on the cookie information (CO, **blue**, as shown in table 410), which database and/or tables in a particular database (the claimed "stored profile") are related to the client browser 11

(the claimed "same user computer") that cookie 11A and the other viewer information were received from. *See* Section XII.F.2, above; Ex. 1036, 4:44-49, 5:52-57, 9:47-48, 10:6-18, FIG. 4.



Ex. 1036, FIG. 4 (cropped, annotated)

498. As I explained above with respect to limitation [1C], the combination of Roth and Jaye teaches the claimed "URL redirection." In the same section, I explained that the combination of Roth and Jaye teaches that the viewer information is received (e.g., when a view-op is presented) by Roth's advertising system 16 "as a result" of the URL redirection. Therefore, a POSITA would have understood that Roth's advertising system 16 receives the cookie information when a view-op is presented and viewer information is received from a web site "as a result of the URL redirection." *See* Sections XII.F.1.d, XII.F.2-3, above; Ex. 1036, 4:44-49, 5:52-57, 9:47-48, 10:6-18, FIG. 4. Because Roth's system automatically reads the cookie in order to update the database 16B when a view-op is received, it would have been obvious to a POSITA that Roth automatically reads the cookie "as a result of the URL redirection" as well. Ex. 1036, 3:33-40, 4:26-32, 4:44-49, 5:52-57, FIGS. 1, 4.

499. Jaye also teaches the limitations of claim 10. Jaye describes that its local servers assign persistent state information to the client 12 in the form of a local ID, and that these IDs are "made persistent using cookies." Ex. 1037, 5:49-58. Jaye's local servers "set" the cookie for the client 12, which a POSITA would have understood includes storing the cookie on the client 12 (the claimed "cookie previously stored on the entity's computer"). For example, it was well known at the time of the alleged invention that cookies could be stored on a user's browser/computer (such as Jaye's client 12) in order to identify the browser to a website (such as a website provided by Jaye's local servers) when the user accesses a website. *See* Section VIII.C, above. A POSITA would have also understood that when Jaye's local servers communicate with the enterprise server to exchange information about the users' page usage (e.g., via a URL redirect, as I described above with respect to limitation [1C]), Jaye's enterprise server 16 (similar to Roth's advertising system 16) would necessarily read the cookie in order to identify the user. Ex. 1037, 3:30-35.

500. Thus, the combination of Roth and Jaye further teach the advertising system 16 automatically and electronically reading the cookie 11A previously stored on the user's computer, as a result of the URL redirection. This meets the claimed "automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection."

501. Accordingly, as shown above, the combination of Roth and Jaye teaches the additional limitations included in dependent claim 10, and renders claim 10 obvious to a POSITA.

7. Independent Claim 11

a) [11PRE]: "A computer system coupled to a global computer network and programmed to perform an automated method of collecting profiles of Internet-using entities, the computer system having access to a storage device, the method performed by the programmed computer system comprising:"

502. This preamble is similar to the preamble of claim 1, but also includes parts of limitation [1A]. A POSITA would have understood that Roth teaches this preamble for similar reasons that it teaches the preamble of claim 1 (limitation [1PRE]) and limitation [1A]. See Sections XII.F.1.a-b, above. Specifically, Roth teaches the advertising system 16 coupled to the Internet and programmed to perform an automated method of collecting profiles of users using browsers, such as the browser 11, to access websites over the Internet. Ex. 1036, Abstract, 1:4-7, 1:30-38, 1:66-2:7, 4:26-57, 9:36-37, claims 1-17. Roth's advertising system 16 has access to the database 16B. Ex. 1036, 3:57-59, FIG. 1. Roth's method, as modified based on Jaye, would have been performed by Roth's advertising system 16 and comprises the steps in limitations [11A]-[11E]. *See* Sections XII.F.7.b-f, below. Thus, the combination of Roth and Jaye teaches limitation [11PRE].

b) [11A]: "(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

503. Limitation [11A] is nearly identical to limitation [1A] and is met for the same reasons as those discussed above. See Section XII.F.1.b, above.

c) [11B]: "(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;"

504. Limitation [11B] is nearly identical to limitation [1B] and is met for the same reasons as those discussed above. See Section XII.F.1.c, above.

d) [11C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

505. Limitation [11C] is nearly identical to limitation [1C] and is met for the same reasons as those discussed above. See Section XII.F.1.d, above.

e) **[11D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"**

506. Limitation [11D] is nearly identical to limitation [1D] and is met for the same reasons as those discussed above. See Section XII.F.1.e, above.

f) **[11E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."**

507. Limitation [11E] is nearly identical to limitation [1E] and is met for the same reasons as those discussed above. See Section XII.F.1.f, above.

8. Independent Claim 21

a) **[21PRE]: "A tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform an automated method of collecting profiles of Internet-using entities, wherein the computer system is coupled to a global computer network and has access to a storage device, the method performed according to the instructions comprising:"**

508. This preamble is similar to the preamble of claim 1, but also includes parts of limitation [1A]. A POSITA would have understood that Roth teaches this preamble for similar reasons that it teaches the preamble of claim 1 (limitation [1PRE]) and limitation [1A]. See Sections XII.F.1.a-b, above. Specifically, Roth teaches the advertising system 16 programmed to perform an automated method of collecting profiles of users using browsers, such as the browser 11, to access websites over the Internet. Ex. 1036, 3:42-57, 6:20-25, 6:53-7:12, 7:34-45, 17:40-

18:7, FIGs. 1, 3. Further, Roth teaches implementing advertising system 16 with a storage medium and processor for executing computer instructions. Ex. 1036, 6:53-7:12, 7:34-45, 17:40-18:7. This teaches a POSITA that Roth includes "[a] tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform" its method. Roth's advertising system 16 is also coupled to the Internet and has access to the database 16B. Ex. 1036, Abstract, 1:4-7, 3:33-59, 18:28-35, FIGs. 1, 3.

509. Roth's method, as modified based on Jaye, would have been performed by Roth's advertising system 16 and comprises the steps in limitations [21A]-[21E]. *See* Sections XII.F.8.b-f, below. Thus, the combination of Roth and Jaye teaches limitation [21PRE].

b) [21A]: "(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

510. Limitation [21A] is nearly identical to limitation [1A] and is met for the same reasons as those discussed above. See Section XII.F.1.b, above.

c) [21B]: "(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;"

511. Limitation [21B] is nearly identical to limitation [1B] and is met for the same reasons as those discussed above. See Section XII.F.1.c, above.

d) [21C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

512. Limitation [21C] is nearly identical to limitation [1C] and is met for the same reasons as those discussed above. See Section XII.F.1.d, above.

e) [21D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"

513. Limitation [21D] is nearly identical to limitation [1D] and is met for the same reasons as those discussed above. See Section XII.F.1.e, above.

f) [21E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."

514. Limitation [21E] is nearly identical to limitation [1E] and is met for the same reasons as those discussed above. See Section XII.F.1.f, above.

9. Dependent Claims 13-16, 20, and 23-25

515. Each of dependent claims 13-16, 20, and 23-25 corresponds to one of claims 3-6 and 10. As such, I have not repeated all of the analysis from above for claims 13-16, 20, and 23-25. Instead, I have prepared the following table to show the claim language side-by-side and to address the minor differences. Specifically, the following table shows how dependent claims 13-16, 20, and 23-25 are taught by the prior art for the same reasons that claims 3-6 and 10 are taught by the prior art.

Claims 3-6 and 10	Claims 13-16, 20, and 23-25	Comparison
[3] The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	[13] The computer system of claim 11 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 13 is taught for the same reasons as claim 3. *See* Section XII.F.2, above.
[4] The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically	[14] The computer system of claim 13 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 14 is taught for the same reasons as claim 4.

reading a cookie on the user computer.	reading a cookie on the user computer.	*See* Section XII.F.3, above.
[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 stored profile, the profile attributes used in targeting the advertisements.	[15] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 15 is taught for the same reasons as claim 5. *See* Section XII.F.4, above.
[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 the stored profile.	[16] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises 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 the stored profile.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 16 is taught for the same reasons as claim 6. *See* Section XII.F.5, above.

[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.	[20] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 20 is taught for the same reasons as claim 10. *See* Section XII.F.6, above.
[3] The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	[23] The data storage medium of claim 21 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 23 is taught for the same reasons as claim 3. *See* Section XII.F.2, above.
[4] The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically	[24] The data storage medium of claim 23 wherein instructions cause the computer system to determine that the received partial profile and the stored profile are related to the same user computer by automatically	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 24 is taught for the same reasons as claim 4.

reading a cookie on the user computer.	reading a cookie on the user computer.	*See* Section XII.F.3, above.
[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 stored profile, the profile attributes used in targeting the advertisements.	[25] The data storage medium of claim 21 wherein the automatic method performed according to the instructions further comprises automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 25 is taught for the same reasons as claim 5. *See* Section XII.F.4, above.

G. Roth In View Of Minor

516. A POSITA would have also found it obvious to combine Roth with Minor. As explained above, Minor teaches another technique for transferring profile information from one website server to another. Ex. 1038, Abstract, 2:44-57. Specifically, Minor teaches a transparent redirect (**magenta arrows**) including a URL and encrypted demographic information from website 32A (**red**) via end-user computer 30 (**blue**) to remote website 34A (**green**). Ex. 1038, 4:2-28, 5:61-6:5, 7:22-44, 7:59-8:6, FIGs. 2-6.

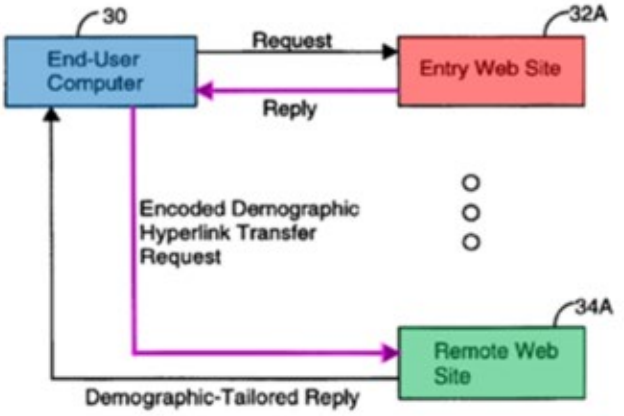


Figure 2

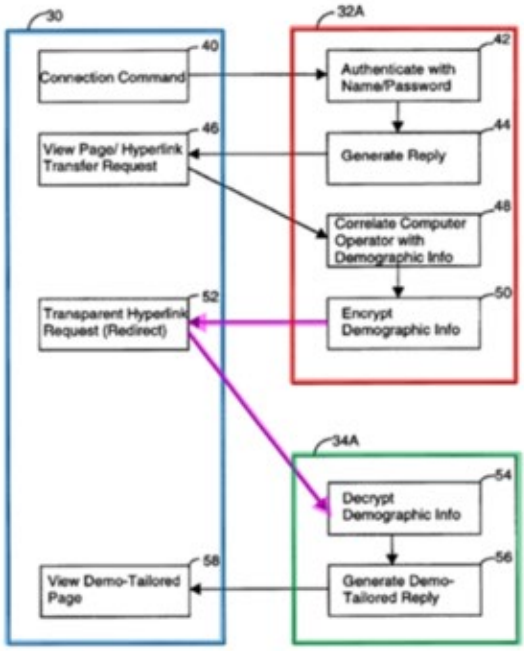


Figure 3

Ex. 1038, FIGs. 2-3 (annotated)

517. It would have been obvious to combine Roth's system and Minor's teachings of passing demographic information through a transparent redirect. Ex. 1036, 3:33-59, 4:26-57; Ex. 1038, 4:19-28, 5:61-6:5. For example, it would have been obvious to implement or modify Roth's system such that the website 14 provides the webpage 12 including a portion having a transparent redirect (as taught by Minor) that causes the browser 11 to send encrypted demographic information to advertising system 16, which in turn adds the demographic information to the user's profile. Ex. 1036, 4:26-57; Ex. 1038, 4:50-53. The following drawing illustrates an example of the combination of Roth and Minor using Roth's Figure 1 (below right) and Minor's Figure 2 (below left).

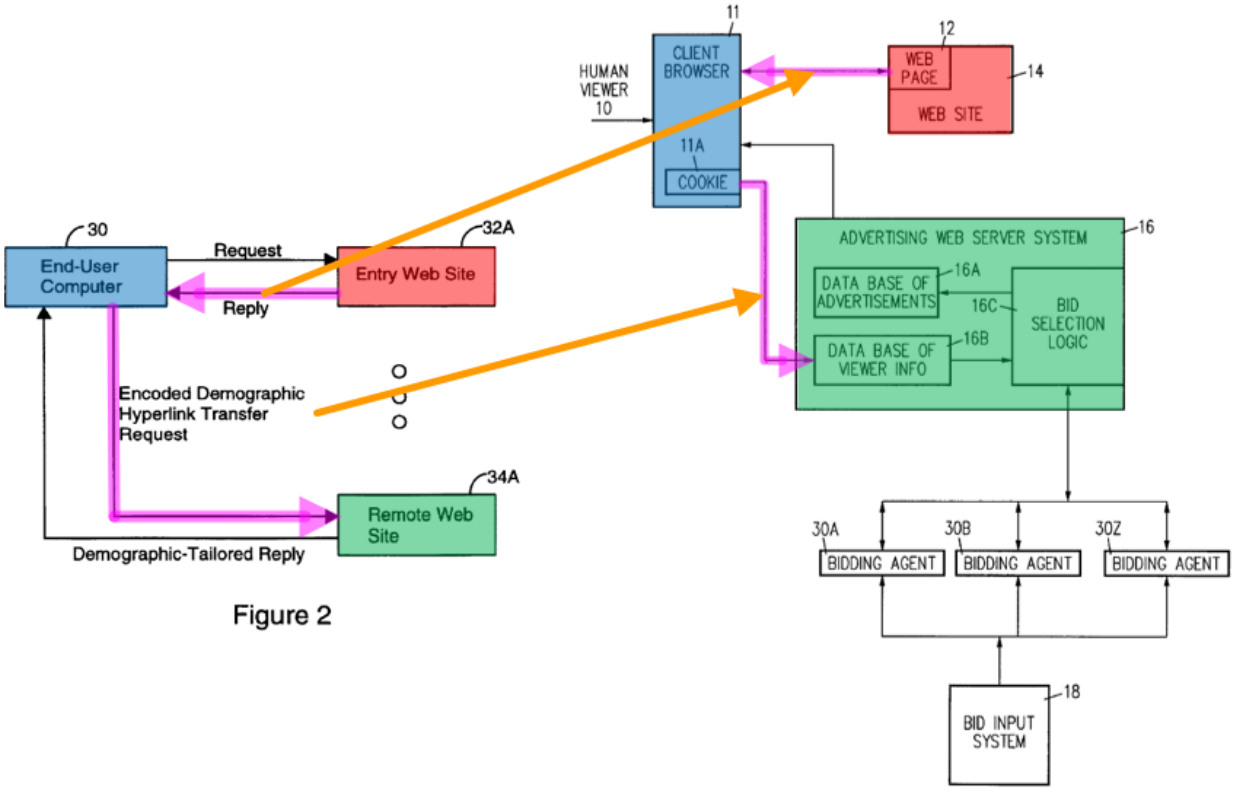
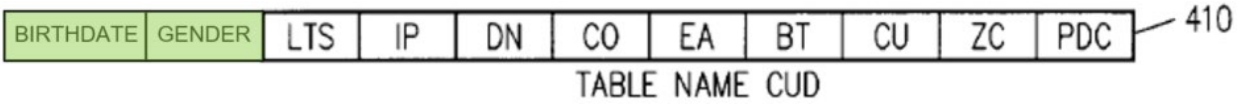


Figure 2

518. As this illustration shows and as a POSITA would have understood, the Reply message from the entry website 32A to the end-user computer 30 in Minor corresponds to the message from website 12 to the client browser 11 in Roth, and the encoded demographic hyperlink transfer request in Minor corresponds to the message from the client browser 11 to the advertising system 16 in Roth. These similarities would have led a POSITA to the proposed combination of Roth and Minor. As shown above, the combination of Roth and Minor teaches a method and system in which advertising system 16 (**green**) receives demographic information (**orange**) from website 14 (**red**) as a result of automatic electronic URL redirection (**magenta**) from a portion of the webpage 12 accessed by the user's browser 11

(**blue**). Roth's database 16B would also have been modified to store the demographic information. Ex. 1036, 18:36-54, FIG. 4; Ex. 1038, 4:50-53, 6:10-17. For example, Roth's data structure (e.g., CUD table 410) would have been modified to include BIRTHDATE and GENDER fields to capture such demographic information. Ex. 1036, 18:36-60. This is shown in the following drawing which modifies Roth's CUD table 410 to add BIRTHDATE and GENDER fields (**light green**) to the data structure.



Ex. 1036, FIG. 4 (cropped and modified)

519. The combination of Roth and Minor is obvious for similar reasons the combination of Roth and Jaye is obvious (e.g., to pass profile information in real-time for immediate use in targeted advertising). *See* Section XII.F, above. Minor also teaches that its technique is advantageous because it is simple, efficient (relative to the slower process of establishing a separate link between servers), and keeps demographic information private. Ex. 1038, 2:21-41, 2:58-3:8. These express advantages would have led a POSITA to the combination of Roth and Minor.

1. Independent Claim 1

a) [1PRE]: "An automated method of collecting profiles of Internet-using entities, the method comprising:"

520. The combination of Roth and Minor teaches limitation [1PRE] for the same reasons the combination of Roth and Jaye does. *See* XII.F.1.a, above. Roth's method, as modified based on Minor, comprises limitations [1A]-[1E]. *See* Sections XII.G.1.b-f, below. Thus, the combination of Roth and Minor teaches limitation [1PRE].

b) [1A]: "(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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

521. As discussed above, Roth teaches the basic structure set forth in limitation [1A]. See Section XII.F.1.b, above.

522. The combination of Roth and Minor maintains Roth's system components, but modifies Roth's operation in a manner teaching the rest of limitation [1A]. Roth's website 14 already sends a message to cause the browser 11 to send another message to the advertising system 16. Ex. 1036, 3:33-57, 4:26-57. In the combination of Roth and Minor, these messages include demographic information (the claimed "partial profile") about the user of the browser 11 and the

URL for the advertising system 16. The following drawing (which was first shown above) illustrates an example of the combination of Roth and Minor using Roth's Figure 1 (below right) and Minor's Figure 2 (below left).

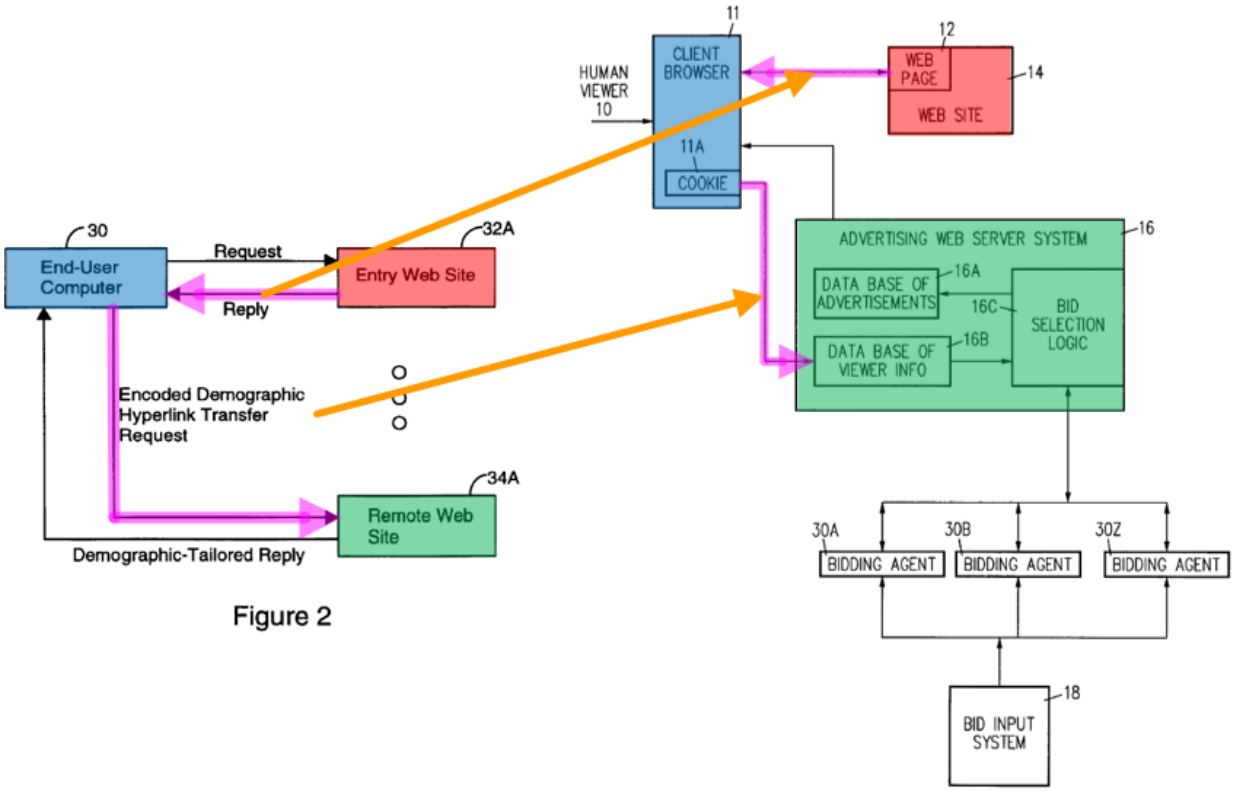


Figure 2

523. Thus, the combination of Roth and Minor teaches electronically receiving, at advertising system 16 (**green**) from website 14 (**red**), demographic information of the user (the claimed "electronically receiving at a programmed computer system…from at least one server…, a partial profile of an entity").

524. Further, the demographic information in the combination of Roth and Minor contains at least one attribute related to the user of browser 11 (the claimed "contains at least one profile attribute related to the entity"), and is stored by website

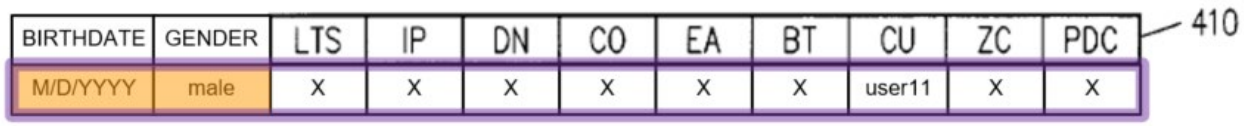
14 (like Minor's website 32A) and therefore available (e.g., electronically available) to the party controlling website 14 (the claimed "available to one of the third parties"). Ex. 1038, 3:45-55, 6:35-37.

525. Accordingly, the combination of Roth and Minor teaches electronically receiving at advertising system 16 coupled to the Internet, from website 14, demographic information of a user that uses browser 11 coupled to the Internet and accessing website 14, which demographic information is available to the party controlling website 14 and contains at least one attribute related to the user. This teaches the claimed "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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity." Thus, the combination of Roth and Minor teaches limitation [1A].

c) [1B]: "(b) automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity;"

526. Roth discloses advertising system 16 (the claimed "computer system") maintaining a database 16B including CUD and HUD tables for storing a user profile

(the claimed "electronically stored profile"). Ex. 1036, 4:45-49, 9:27-37, 9:47-58, 10:6-20, 12:11-22, FIG. 4. In the combination of Roth and Minor, a POSITA would have configured the advertising system 16 to automatically (with no human control (see Section XI.E above)) add the received demographic information (e.g., birthdate and gender attributes) to the corresponding **user profile** for a user of browser 11 ("user11") in Roth's CUD table, which would have been modified to store such demographic information. Ex. 1036, 18:36-60. This is shown in the following drawing which modifies Roth's CUD table 410 to add BIRTHDATE and GENDER fields and a row with data to show the user profile (**purple**) for the user of browser 11.



BIRTHDATE	GENDER	LTS	IP	DN	CO	EA	BT	CU	ZC	PDC
M/D/YYYY	male	X	X	X	X	X	X	user11	X	X

Ex. 1036, FIG. 4 (cropped and modified)

527. Thus, the combination of Roth and Minor teaches advertising system 16 automatically and electronically storing the received demographic information (**orange**) by adding it to the user profile (**purple**) for the user of browser 11. This teaches the claimed "automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity." Thus, the combination of Roth and Minor teaches limitation [1B].

d) [1C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

528. Roth teaches limitation [1C] because a URL is embedded in a tag within webpage 12 of website 14 accessed by the user computer operating browser 11 (the claimed "from a portion of a page of the website accessed by the user computer") and the URL redirects browser 11 to advertising system 16 (the claimed "automatic electronic URL redirection"). *See* Section XII.F.1.d, above. Minor similarly teaches automatic electronic URL redirection, but Minor further includes demographic information in its transparent redirect. Ex. 1038, 4:2-28, 5:61-6:5, 7:22-44, 7:59-8:6, FIGs. 2-6.

529. In the combination of Roth and Minor (as shown in the example illustration reproduced again below), the same messages of Roth are communicated, but with demographic information in addition to the URL.

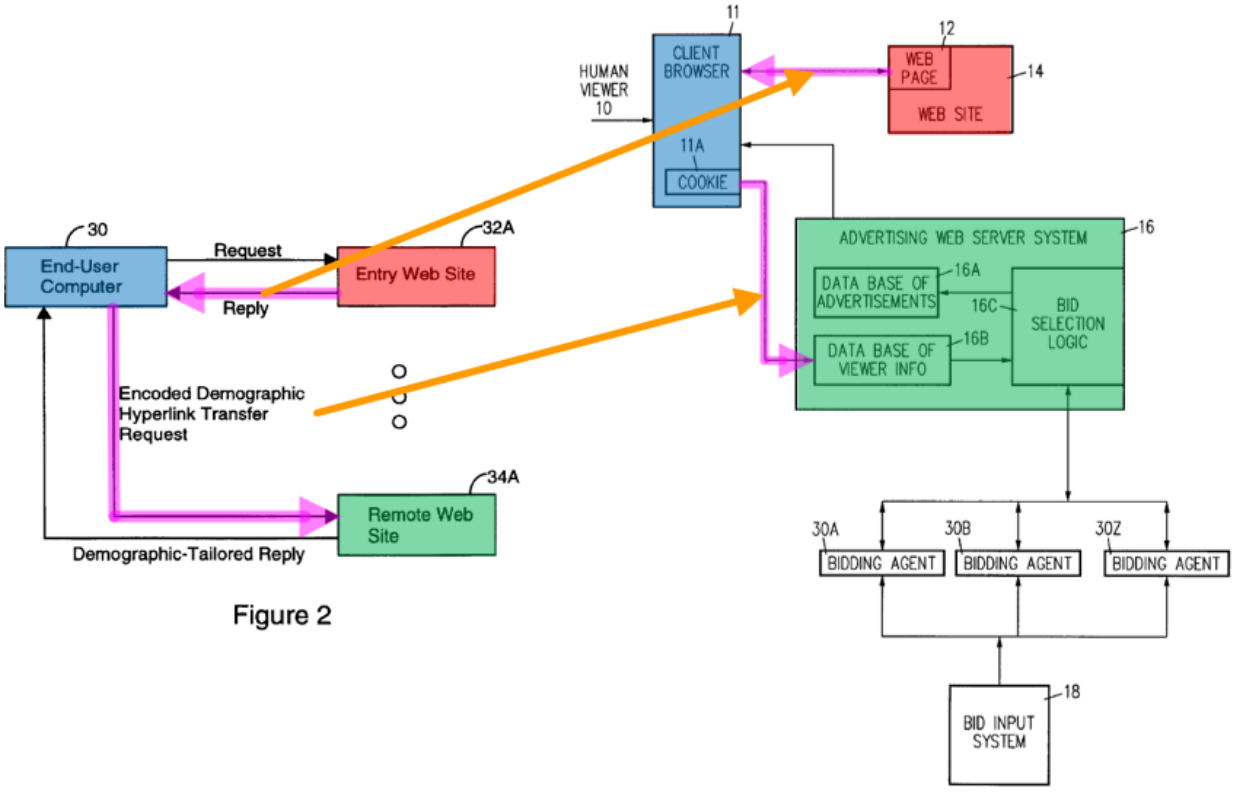


Figure 2

530. Thus, the combination of Roth and Minor teaches that receiving the profile information (by advertising system 16 from website 14 in accordance with limitation [1A]) is achieved as a result of automatic electronic URL redirection from a portion of webpage 12 of website 14 accessed by the user computer operating browser 11. This teaches the claimed "wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer." Thus, the combination of Roth and Minor teaches limitation [1C].

e) [1D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"

531. Roth teaches limitation [1D] because a POSITA would have understood that the advertising system 16 (the claimed "computer system") automatically (with no human control (see Section XI.E above)) generates information for the WS field (the claimed "electronic record"), which indicates the party controlling website 14 that contributed the profile information to the user profile. See Section XII.F.1.e, above. The combination of Roth and Minor maintains these features and thus teaches limitation [1D] for the same reasons.

532. Further, to the extent WS is not already associated with profile information, it would have been obvious to modify Roth's database 16B to store WS in association with profile information (e.g., demographic information) to indicate that website 14 contributed the profile information for the same reasons discussed above (e.g., to reward websites and incentivize sharing). See Section XII.F.1.e, above.

533. In the combination of Roth and Minor, Roth's website 14 provides the demographic information to advertising system 16, so a record (e.g., "website14") indicating website 14 as the source would have been automatically generated in Roth's database 16B. A POSITA would have been motivated to store the source of the demographic information to reward the source for providing the demographic

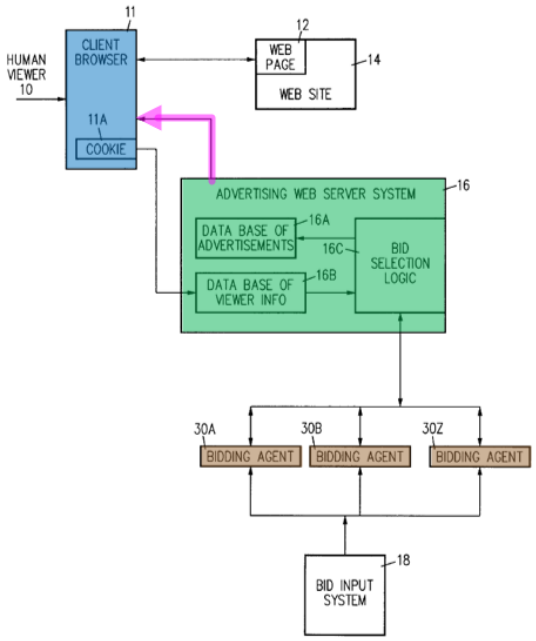
information thereby incentivizing sources to provide sensitive demographic information, which is desirable to advertisers. Ex. 1039, ¶¶ [0111] (describing payment for providing profiles), [0114] (describing compensation for providing information for a profile); Ex. 1045, Abstract, 4:60-5:12, 7:23-8:14. This source record would have also allowed advertising server to determine the reliability of the demographic information, which would have been a factor in using the demographic information for targeted advertising. Ex. 1039, ¶¶ [0074]-[0075]; Ex. 1043, Abstract, 1:43-47, 1:51-63, 7:48-60, 8:37-45, 9:50-10:32. For example, a POSITA would have been motivated to provide advertisers with a record of the source of information to determine the reliability so that the advertisers may, e.g., determine a payment amount for the information, or determine whether to trust the information before using it to match an advertisement to the user. *Id.* Recording the source of the demographic information would have merely involved straightforward database usage and management processes that were well-within the skill level of a POSITA. Ex. 1043, 2:50-67, 7:36-8:46, 9:50-10:32.

534. Accordingly, the combination of Roth and Minor teaches advertising system 16 automatically generating an electronic record indicating the source of the demographic information (which in the example above is the party controlling website 14 that contributed the demographic information) added to the user profile. This teaches the claimed "automatically with the computer system generating an

electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes." Thus, the combination of Roth and Minor teaches limitation [1D].

f) [1E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."

535. Roth teaches limitation [1E] because advertising system 16 (**green**) uses data in the CUD and HUD tables (the claimed "stored profile") to deliver targeted advertisements (**magenta**) for third-party advertisers (**brown**) to the user computer operating browser 11 (**blue**) over the Internet.



Ex. 1036, FIG. 1 (annotated)

536. The combination of Roth and Minor maintains these features and thus teaches limitation [1E] for the same reasons. Specifically, the combination of Roth

and Minor teaches that the user profile (stored in database 16B), including the added demographic information (received from website 14), comprises data used in targeting advertisements to the user computer operating browser 11 over the Internet. This teaches the claimed "wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network." Finally, because the combination of Roth and Minor teaches all limitations of claim 1, it is my opinion that claim 1 would have been obvious to a POSITA.

2. Dependent Claim 3: "The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer."

537. Claim 3 of the '249 Patent depends from claim 1 and further requires "wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer." Ex. 1001, claim 3. A POSITA would have understood that this feature is easily implemented in a standard database. See Section VIII.B. As discussed above, claim 1, from which claim 3 depends, is taught by the combination of Roth and Minor.

538. As I discussed above at Section XII.F.2, the combination of Roth and Jaye teaches the limitations of claim 3. The combination of Roth and Minor teaches

claim 3 for the same reasons the combination of Roth and Jaye teaches claim 3. *See* Section XII.F.2, above. Advertising system 16 adds the received demographic information to the user profile stored in database 16B on account of the received demographic information and the user profile being related to the same user computer operating browser 11. *See* Section XII.G.1.c, above; Ex. 1036, 18:66-19:4.

539. Accordingly, the combination of Roth and Minor teaches the additional limitations included in dependent claim 3, and renders claim 3 obvious to a POSITA.

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

540. Claim 4 of the '249 Patent depends from claim 3 and further requires "wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer." Ex. 1001, claim 4. As discussed above, claim 3, from which claim 4 depends, is taught by the combination of Roth and Minor.

541. As I discussed above at Section XII.F.3, the combination of Roth and Jaye teaches the limitations of claim 4. The combination of Roth and Minor teaches claim 4 for the same reasons the combination of Roth and Jaye teaches claim 4. *See* Section XII.F.3, above. The combination of Roth and Minor preserves Roth's cookie 11A that identifies the user. Ex. 1036, 3:38-46, 4:45-57, 18:66-19:4. Thus,

the combination of Roth and Minor teaches advertising system 16 determining that the received demographic information and stored user profile are related to the same user computer (operating browser 11) by automatically reading cookie 11A on the user computer (the claimed "the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer").

542. Accordingly, the combination of Roth and Minor teaches the additional limitations included in dependent claim 4, and renders claim 4 obvious to a POSITA.

4. Dependent 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 stored profile, the profile attributes used in targeting the advertisements."

543. Claim 5 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements." Ex. 1001, claim 5. As discussed above, claim 1, from which claim 5 depends, is taught by the combination of Roth and Minor.

544. As I discussed above at Section XII.F.4, the combination of Roth and Jaye teaches the limitations of claim 5. The combination of Roth and Minor teaches claim 5 for the same reasons the combination of Roth and Jaye teaches claim 5. *See*

Section XII.F.4, above. That is, the information in Roth's WS field or in a new field indicating website 14's owner is an electronic record of the party controlling website 14 that contributed, to the user profile, attributes of the demographic information used in targeting the advertisements.

545. Further, the combination of Roth and Minor would have also included a separate record, in database 16B, for indicating which website (like website 14) contributed, to the user profile, the demographic information used in targeting the advertisements. This record would have been obvious to enable advertising system 16 to provide reports detailing where useful or desirable demographic information came from and to reward (e.g., financially) websites (like website 14) for providing demographic information that is useful or desirable for targeted advertising. A POSITA would have been motivated to report where the attributes used for matching users with advertisements came from to give advertisers further insights. Also, adding such record would have been straightforward, just as generating other records in database 16B is straightforward.

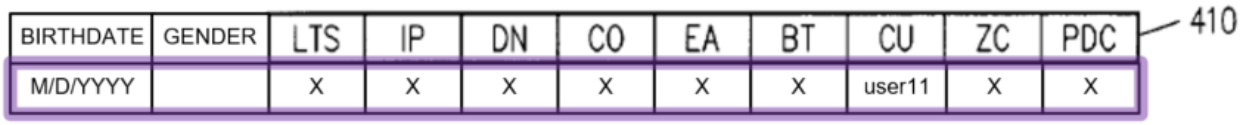
546. Accordingly, the combination of Roth and Minor teaches the additional limitations included in dependent claim 5, and renders claim 5 obvious to a POSITA.

5. Dependent 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 the stored profile."

547. Claim 6 of the '249 Patent depends from claim 1 and further requires "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 the stored profile." Ex. 1001, claim 6. As discussed above, claim 1, from which claim 6 depends, is taught by the combination of Roth and Minor. Additionally, as discussed in the Technical Background section (see Section VIII.B on databases), a POSITA would have known the use of database queries to determine whether received data contains any data that is not previously stored in the database when adding the received data to the database, and therefore would have used queries to determine "whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile," as set forth in the claim.

548. As I discussed above at Section XII.F.5, the combination of Roth and Jaye teaches the limitations of claim 6. The combination of Roth and Minor teaches claim 6 for the same reasons the combination of Roth and Jaye teaches claim 6. *See* Section XII.F.5, above. For attributes of demographic information from different websites 14 to be stored on a user-by-user basis, advertising system 16 would have

to check whether attributes in received demographic information for a user were already stored in that user's profile. Without performing this check, information would be overwritten or undesirably duplicated. As I described above at Section VIII.B, it was known to update data records (i.e., user profiles) without adding duplicate information. Ex. 1043, 8:4-15. A POSITA would have been motivated to avoid adding duplicate information to Roth's database structures in order to limit the amount of storage space occupied by each user's profile. Accordingly, a POSITA would have been motivated to perform the check described above (to the extent it was not already part of the extant database technology used to implement Roth's database 16B) to ensure duplicate data is not being added when the received profile information is stored in Roth's database structures. For example, if the user profile (**purple**) was as shown in the below drawing (which crops Roth's Figure 4 to excerpt the CUD table 410 and then modifies that table to include additional fields for BIRTDATE and GENDER and a row for storing a profile for the user of Roth's browser 11 (i.e., user11) as previously explained) when new demographic information indicating the user's birthdate and gender was received, a POSITA would have understood (or at least found it obvious) that the advertising system 16 would have determined that the user profile (**purple**) already contains the user's birthdate but does not contain the gender.



BIRTHDATE	GENDER	LTS	IP	DN	CO	EA	BT	CU	ZC	PDC
M/D/YYYY		X	X	X	X	X	X	user11	X	X

410

Ex. 1036, FIG. 4 (cropped and modified)

In addition, each of the above steps would have been performed using extant database technology (See Section VIII.B).

549. Thus, the combination of Roth and Minor teaches advertising system 16 automatically and electronically determining whether the received demographic information contains any profile attributes about the user of browser 11 that were not previously contained in the user's profile. This teaches the claimed "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 the stored profile."

550. Accordingly, the combination of Roth and Minor teaches the additional limitations included in dependent claim 6, and renders claim 6 obvious to a POSITA.

6. Dependent 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."

551. Claim 10 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection." Ex. 1001, claim

10. As discussed above, claim 1, from which claim 10 depends, is taught by the combination of Roth and Minor.

552. As I discussed above at Section XII.F.6, the combination of Roth and Jaye teaches the limitations of claim 10. The combination of Roth and Minor teaches claim 10 for the same reasons the combination of Roth and Jaye teaches claim 10. *See* Section XII.F.6, above. In the combination of Roth and Minor, advertising system 16 still automatically and electronically reads cookie 11A previously stored by browser 11 on the user's computer, as a result of the URL redirection. This teaches the claimed "automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection."

553. Accordingly, the combination of Roth and Minor teaches the additional limitations included in dependent claim 10, and renders claim 10 obvious to a POSITA.

7. Independent Claim 11

a) [11PRE]: "A computer system coupled to a global computer network and programmed to perform an automated method of collecting profiles of Internet-using entities, the computer system having access to a storage device, the method performed by the programmed computer system comprising:"

554. This preamble is similar to the preamble of claim 1, but also includes parts of limitation [1A]. A POSITA would have understood that Roth teaches this

preamble for similar reasons that it teaches the preamble of claim 1 (limitation [1PRE]) and limitation [1A]. See Sections XII.G.1.a-b, above. Specifically, Roth teaches the advertising system 16 coupled to the Internet and programmed to perform an automated method of collecting profiles of users using browsers, such as the browser 11, to access websites over the Internet. Ex. 1036, Abstract, 1:4-7, 1:30-38, 1:66-2:7, 4:26-57, 9:36-37, claims 1-17. Minor further evidences that Roth's advertising system 16 (similar to Minor's website servers 32A, 34A) is programmed. Ex. 1038, 6:29-58, 7:50-54, 10:4-65, FIG. 4. Roth's advertising system 16 has access to the database 16B. Ex. 1036, 3:57-59, FIG. 1. Roth's method, as modified based on Minor, would have been performed by Roth's advertising system 16 and comprises the steps in limitations [11A]-[11E]. *See* Sections XII.G.7.b-f, below. Thus, the combination of Roth and Minor teaches limitation [11PRE].

b) [11A]: "(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

555. Limitation [11A] is nearly identical to limitation [1A] and is met for the same reasons as those discussed above. See Section XII.G.1.b, above.

c) **[11B]: "(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;"**

556. Limitation [11B] is nearly identical to limitation [1B] and is met for the same reasons as those discussed above. See Section XII.G.1.c, above.

d) **[11C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"**

557. Limitation [11C] is nearly identical to limitation [1C] and is met for the same reasons as those discussed above. See Section XII.G.1.d, above.

e) **[11D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"**

558. Limitation [11D] is nearly identical to limitation [1D] and is met for the same reasons as those discussed above. See Section XII.G.1.e, above.

f) **[11E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."**

559. Limitation [11E] is nearly identical to limitation [1E] and is met for the same reasons as those discussed above. See Section XII.G.1.f, above.

8. Independent Claim 21

a) [21PRE]: "A tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform an automated method of collecting profiles of Internet-using entities, wherein the computer system is coupled to a global computer network and has access to a storage device, the method performed according to the instructions comprising:"

560. This preamble is similar to the preamble of claim 1, but also includes parts of limitation [1A]. A POSITA would have understood that Roth teaches this preamble for similar reasons that it teaches the preamble of claim 1 (limitation [1PRE]) and limitation [1A]. See Sections XII.G.1.a-b, above. Specifically, Roth teaches the advertising system 16 programmed to perform an automated method of collecting profiles of users using browsers, such as the browser 11, to access websites over the Internet. Ex. 1036, 3:42-57, 6:20-25, 6:53-7:12, 7:34-45, 17:40-18:7, FIGs. 1, 3. Further, Roth teaches implementing advertising system 16 with a storage medium and processor for executing computer instructions. Ex. 1036, 6:53-7:12, 7:34-45, 17:40-18:7. This teaches a POSITA that Roth includes "[a] tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform" its method. Roth's advertising system 16 is also coupled to the Internet and has access to the database 16B. Ex. 1036, Abstract, 1:4-7, 3:33-59, 18:28-35, FIGs. 1, 3. Minor further evidences that Roth's advertising system 16 (similar to Minor's website servers 32A, 34A) includes a storage medium storing computer instructions and processor(s) for executing those instructions. Ex.

1038, 6:29-58, 7:50-54, 10:4-65, FIG. 4. Roth's advertising system 16 is also coupled to the Internet and has access to the database 16B. Ex. 1036, Abstract, 1:4-7, 3:33-59, 18:28-35, FIGs. 1, 3.

561. Roth's method, as modified based on Minor, would have been performed by Roth's advertising system 16 and comprises the steps in limitations [21A]-[21E]. *See* Sections XII.G.8.b-f, below. Thus, the combination of Roth and Minor teaches limitation [21PRE].

b) [21A]: "(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;"

562. Limitation [21A] is nearly identical to limitation [1A] and is met for the same reasons as those discussed above. See Section XII.G.1.b, above.

c) [21B]: "(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;"

563. Limitation [21B] is nearly identical to limitation [1B] and is met for the same reasons as those discussed above. See Section XII.G.1.c, above.

d) [21C]: "(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and"

564. Limitation [21C] is nearly identical to limitation [1C] and is met for the same reasons as those discussed above. See Section XII.G.1.d, above.

e) [21D]: "(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;"

565. Limitation [21D] is nearly identical to limitation [1D] and is met for the same reasons as those discussed above. See Section XII.G.1.e, above.

f) [21E]: "(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network."

566. Limitation [21E] is nearly identical to limitation [1E] and is met for the same reasons as those discussed above. See Section XII.G.1.f, above.

9. Dependent Claims 13-16, 20, and 23-25

567. Each of dependent claims 13-16, 20, and 23-25 corresponds to one of claims 3-6 and 10. As such, I have not repeated all of the analysis from above for claims 13-16, 20, and 23-25. Instead, I have prepared the following table to show the claim language side-by-side and to address the minor differences. Specifically, the following table shows how dependent claims 13-16, 20, and 23-25 are taught by the prior art for the same reasons that claims 3-6 and 10 are taught by the prior art.

Claims 3-6 and 10	Claims 13-16, 20, and 23-25	Comparison
[3] The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	[13] The computer system of claim 11 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 13 is taught for the same reasons as claim 3. *See* Section XII.G.2, above.
[4] The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	[14] The computer system of claim 13 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 14 is taught for the same reasons as claim 4. *See* Section XII.G.3, above.
[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 stored profile, the profile	[15] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically maintaining	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 15 is taught for the same reasons as claim 5. *See* Section XII.G.4, above.

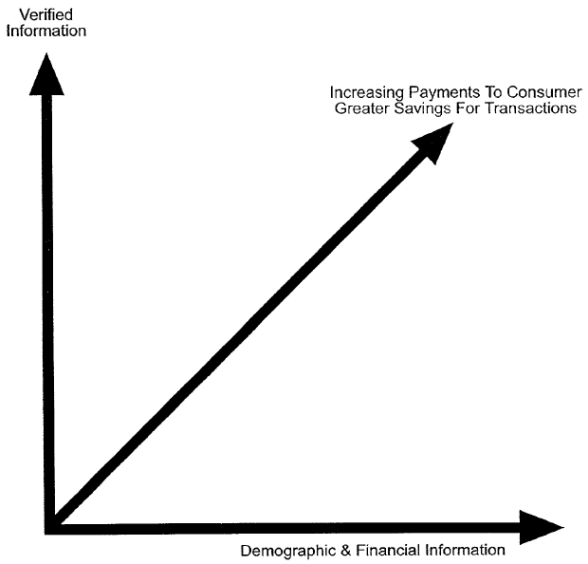
attributes used in targeting the advertisements.	an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.	
[6] The method of claim 1 further comprising automatically with the computer system electronically determining whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile.	[16] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises 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 the stored profile.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 16 is taught for the same reasons as claim 6. *See* Section XII.G.5, above.
[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.	[20] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically reading a cookie previously stored on the entity's computer,	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 20 is taught for the same reasons as claim 10. *See* Section XII.G.6, above.

	as a result of the URL redirection.	
[3] The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	[23] The data storage medium of claim 21 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 23 is taught for the same reasons as claim 3. *See* Section XII.G.2, above.
[4] The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	[24] The data storage medium of claim 23 wherein instructions cause the computer system to determine that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 24 is taught for the same reasons as claim 4. *See* Section XII.G.3, above.
[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	[25] The data storage medium of claim 21 wherein the automatic method performed according to the instructions further comprises automatically with the computer system	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 25 is taught for the same reasons as claim 5.

stored profile, the profile attributes used in targeting the advertisements.	electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.	*See* Section XII.G.4, above.

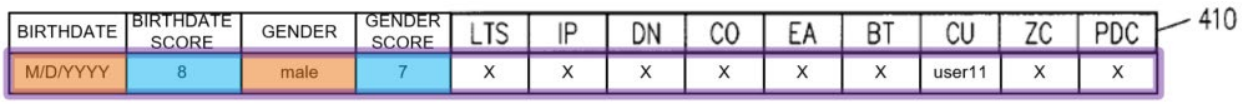
H. Roth In View Of Jaye And Coleman Or Roth In View Of Minor And Coleman

568. As explained above, Coleman teaches verifying profile information with outside sources and updating a profile to reflect whether verification was successful. Ex. 1039, ¶¶ [0056], [0072]-[0075]. With respect to Figure 2 (reproduced below), Coleman explains that the value of profile information (e.g., to sellers/advertisers) increases as the verifiability of the information increases. Ex. 1039, ¶¶ [0049], [0073].



Ex. 1039, FIG. 2

569. A POSITA would have found it obvious to combine Roth with Jaye and Coleman or Roth with Minor and Coleman, such that attributes of the profile information (**orange**) in the combination of Roth and Jaye or in the combination of Roth and Minor are verified and assigned verification scores (**light blue**). This is illustrated in the following drawing, which excerpts Roth's CUD table 410 by cropping Figure 4 and modifying the CUD table 410 to include additional fields for BIRTHDATE, BIRTHDATE SCORE, GENDER, and GENDER SCORE and to include a row showing example information for a user of Roth's browser 11 (labeled user11).



BIRTHDATE	BIRTHDATE SCORE	GENDER	GENDER SCORE	LTS	IP	DN	CO	EA	BT	CU	ZC	PDC
M/D/YYYY	8	male	7	X	X	X	X	X	X	user11	X	X

410

Ex. 1036, FIG. 4 (cropped and modified)

570. As shown in the drawing above, a POSITA would have found it obvious to determine a verification score for certain attributes that would have been verified as taught by Coleman. For example, a POSITA would have found it obvious to, as part of verifying information, determine a verification score to use as a variable in determining a deal (i.e., an advertisement) to provide to potential purchasers, as taught by Coleman. Ex. 1039, ¶¶ [0049], [0051], [0060], [0076]. Thus, attributes

would have been selected for determining targeted advertisements based on the verification scores. *Id.*; Ex. 1036, 11:43-46, 18:36-65.

571. Similarly, it would have been obvious to combine each of the above grounds (Roth and Jaye or Roth and Minor) with Coleman, such that attributes of the profile information (**orange**) in each ground are assigned source scores (**light blue**) indicating the trustworthiness of the source of a corresponding attribute. This is illustrated in the following drawing, which modifies Roth's CUD table 410 to include additional fields for BIRTHDATE, BIRTHDATE SOURCE (SRC) SCORE, GENDER, and GENDER SOURCE (SRC) SCORE and to include a row showing example information in a user profile (**purple**) for a user of Roth's browser 11 (labeled user11).



BIRTHDATE	BIRTHDATE SRC SCORE	GENDER	GENDER SRC SCORE	LTS	IP	DN	CO	EA	BT	CU	ZC	PDC
M/D/YYYY	5	male	3	X	X	X	X	X	X	user11	X	X

Ex. 1036, FIG. 4 (cropped and modified)

572. As shown in the drawing above, a POSITA would have found it obvious to determine a source score for certain attributes to reflect the trustworthiness of the data. Also, attributes would have been selected for determining targeted advertisements based on the source scores.

573. A POSITA would have also found it obvious to use the verification scores (**light blue**) to determine prices (**light green**) for using or obtaining

corresponding attributes of the profile information (**orange**). This is illustrated in the following drawing, which modifies Roth's CUD table 410 to include additional fields for BIRTHDATE, BIRTHDATE SCORE, BIRTHDATE PRICE, GENDER, GENDER SCORE, and GENDER PRICE and to include a row showing example information in a user profile (**purple**) for a user of Roth's browser 11 (labeled user11).



BIRTHDATE	BIRTHDATE SCORE	BIRTHDATE PRICE	GENDER	GENDER SCORE	GENDER PRICE	LTS	IP	DN	CO	EA	BT	CU	ZC	PDC
M/D/YYYY	8	$.05	male	7	$.02	X	X	X	X	X	X	user11	X	X

410

Ex. 1036, FIG. 4 (cropped and modified)

574. A POSITA would have been motivated to make these modifications to improve the effectiveness of targeted advertisements. Roth is directed to providing targeted advertisements. The goal of targeted advertisements is for the advertisements to reach the desired audience. To do this successfully, decisions to select advertisements should be based on accurate information about the audience (website visitors). And to improve accuracy of the information, a POSITA would have verified the information and recorded verification results (e.g., scores) for use in selecting accurate information, as Coleman teaches. Ex. 1039, ¶¶ [0056], [0072]-[0075]. Similarly, to improve accuracy of the information, a POSITA would have selected information based on which sources of the information are deemed trustworthy. In some cases, the verification scores would be used to determine which sources are trustworthy.

575. A POSITA would have also wanted to incentivize websites to provide profile information for use in targeted advertising. Providing incentives in return for profile information was already well-known, as were various means for implementing an incentive/reward process for sources of profile information. Ex. 1045, 4:60-5:12, 7:48-55, 9:48-62. Having more profile information would allow more narrowly-tailored advertisements. It also increases the likelihood of acquiring accurate information. To incentivize sharing of profile information, a POSITA would have offered compensation for profile information. In view of Coleman's teachings that the value of information increases if it's verified, a POSITA would have set a price for profile information based on the verification results. Ex. 1039, ¶¶ [0049], [0073], FIG. 2.

576. It is also my opinion that other rationales also support my finding that the combination of Roth (with Jaye or Minor) and Coleman would have been obvious. First, the combination of Roth (with Jaye or Minor) and Coleman merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are Roth's system having the URL redirection (or a modified URL redirection according to Jaye or Minor) and Coleman's processes and data structures for verifying profile information, determining values of profile information, and storing verification results. Ex. 1036, 3:33-4:57, FIG. 1; Ex. 1039, ¶¶ [0049], [0056],

[0072]-[0075], FIG. 2. These known elements would have been combined according to known methods, such as Coleman's methods of verifying and determining values of profile information. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2. Finally, the combination yields predictable results, such as storing verification scores and prices in association with attributes of profile information.

577. The combination of Roth (with Jaye or Minor) and Coleman also involves applying a known technique to a known device ready for improvement to yield predictable results. See Section IV (referring to obviousness rationale (D)). The known techniques are Coleman's techniques for verifying profile information using outside sources and determining a value of profile information, in part, based on verification results. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2. The known device ready for improvement is Roth's system including advertising system 16 that already stores user profiles and is capable of storing verification stores and prices. Ex. 1036, 9:17-41, 11:43-51, 18:44-60, FIG. 4. The predictable result of this combination with Coleman is storing verification scores and prices in association with attributes of profile information in, e.g., database 16B of Roth.

578. Finally, a POSITA would have had a reasonable expectation of success in combining Roth with Jaye and Coleman or Roth with Minor and Coleman because these combinations merely involve routine database management skills that a POSITA would have had. Ex. 1036, 7:36-43, 18:36-60; Ex. 1037, 13:19-41

(describing scoring and that the "user profile can be incremented in real time and new interest categories can be easily added").

1. Dependent 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 stored profile."

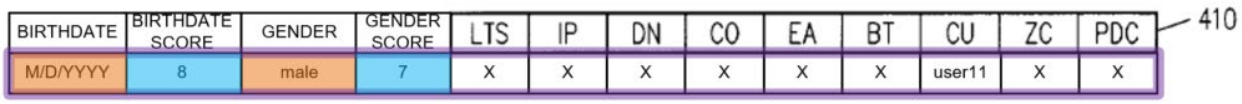
579. Claim 7 of the '249 Patent depends from claim 1 and further requires "maintaining with the computer system a credibility rating associated with at least one of the profile attributes of the stored profile." Ex. 1001, claim 7. As discussed above, claim 1, from which claim 7 depends, is taught by the combination of Roth and Jaye or the combination of Roth and Minor. Roth with Jaye and Coleman or Roth with Minor and Coleman teach the additional limitations of claim 7.

580. Roth teaches that bids can be submitted for view-ops (*i.e.*, opportunities to send advertisement to a web page visited by a viewer). Ex. 1036, 2:35-37, 4:26-48, 7:11-25, 10:31-37, 12:24-29, 18:44-65, FIG. 1. Roth describes that viewer information, which would include various profile attributes of the viewer, is included in the view-op that bidding agents bid on, allowing the bidding agents to determine whether to bid on the view-op. *Id*. Roth further discloses that these bids can be placed based on a wide range of criteria specified by advertisers, including "any type of information that advertisers care to specify in proposed bids." Ex. 1036, 5:12-15, 16:6-18, 16:45-46, 18:54-60.

581. Coleman, similar to Roth, teaches a method for providing targeted advertisements based on potential purchaser profiles (the claimed "stored profile"). Ex. 1039, Abstract, [0011], [0049], [0055]-[0058], [0066]-[0068], FIG. 4. Coleman describes that the potential purchaser profiles may include different types of personal profile information, such as demographic, financial, or other information about potential purchasers (the claimed "at least one of the profile attributes"). Ex. 1039, [0049], [0056], [0061]-[0062], [0070]. Coleman also tracks the quality or verifiability of the profile information. Ex. 1039, [0049], [0074], FIG. 2. For example, Coleman describes attempting to verify the profile information and updating the profile to reflect which information (the claimed "at least one of the profile attributes") were successfully verified and which were not. *Id*. Coleman explains that by tracking the quality or verifiability of the information and maintaining a record in the profile, Coleman's system can provide an indication of whether the information may be considered reliable (the claimed "maintaining with the computer system a credibility rating"). *Id*.

582. A POSITA would have found it obvious to combine Roth (with Jaye or Minor) and Coleman to implement a credibility rating associated with the viewer information of Roth. For example, a POSITA would have modified Roth's database 16B (or particular tables included in the database 16B) such that the viewer information in Roth's database 16B included a record of the verifiability or quality

of the profile information stored in the database, just as Coleman's potential purchaser profile does for its potential purchaser information. Ex. 1036, 1:30-44, 3:57-59, 4:26-49, 9:47-48, 10:6-18, 12:11-22, 18:54-60, FIG. 4; Ex. 1039, [0049], [0056], [0061]-[0062], [0070], [0074], FIG. 2. In at least one obvious combination of Roth with Jaye and Coleman or Roth with Minor and Coleman, Roth's advertising system 16 would have maintained a verification score (**light blue**) (the claimed "credibility rating") associated with at least one attribute of the received profile information (**orange**) (which is appended to the URL as taught by Jaye) stored in a user profile (**purple**) in Roth's database 16B using a data structure like Roth's CUD table 410. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2; Ex. 1036, 18:36-60. This is illustrated in the following drawing (also shown above), which modifies Roth's CUD table 410 to include additional fields for BIRTHDATE, BIRTHDATE SCORE, GENDER, and GENDER SCORE and to include a row showing example information for a user of Roth's browser 11 (labeled user11).



BIRTHDATE	BIRTHDATE SCORE	GENDER	GENDER SCORE	LTS	IP	DN	CO	EA	BT	CU	ZC	PDC
M/D/YYYY	8	male	7	X	X	X	X	X	X	user11	X	X

Ex. 1036, FIG. 4 (cropped and modified)

583. In the combination of Roth (with Jaye or Minor) and Coleman, the viewer information in Roth's database 16B would still be used to as part of a view-op to solicit bids and provide targeted advertisements. As such, a POSITA would

have desired to utilize Coleman's record of the verifiability or quality of the profile information to provide more information that may be of use to bidding agents in determining whether to bid on a view-op, based on the verified and/or highest quality profile information. Ex. 1039, ¶¶ [0049], [0073]-[0074]. Coleman's teachings of providing a prediction of how many potential purchasers would buy an offered good or service based on the verifiability or quality of the profile information (Ex. 1039, ¶ [0049]) provides motivation for combining Roth (with Jaye or Minor) with Coleman to provide view-ops to bidders. *See* Section IV (referring to obviousness rationale G).

584. It is also my opinion that other rationales also support my finding that the combination of Roth (with Jaye or Minor) and Coleman would have been obvious. The known elements from Roth include Roth's database 16B storing viewer information of viewers accessing webpages on websites, and the known elements from Coleman include Coleman's record of the verifiability or quality of profile information. Ex. 1036, 3:33-4:57, FIGs. 1, 4; Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2. The known methods include storing viewer information related to a viewer in Roth. Ex. 1036, 1:30-44, 3:57-59, 4:26-49, 9:47-48, 10:6-18, 12:11-22, 18:54-60, FIG. 4; Ex. 1039, [0049], [0056], [0061]-[0062], [0070], [0074], FIG. 2. This combination of Roth (with Jaye or Minor) and Coleman would have the predictable result of adding, to Roth's database 16B, a record of the verifiability

or quality of profile information stored in the database (which would have been useful for providing view-ops to bidders and providing targeted advertisements to viewers).

585. The combination of Roth (with Jaye or Minor) and Coleman also amounts to applying a known technique taught by Coleman to a known device described by Roth that is ready for improvement to yield predictable results. *See* Section IV (referring to obviousness rationale D). Specifically, the combination applies storing or maintaining a record of the verifiability or quality of user profile information taught by Coleman for Coleman's host computer system to Roth's similar advertising system 16 that is ready for improvement by Coleman's technique. Roth's advertising system 16 is particularly ready for improvement because it, like Coleman, uses viewer information to provide (e.g., based on bids by bidding agents) targeted advertisements but does not explicitly include a measure of credibility of the information used to select the targeted advertisements. Ex. 1036, 2:35-37, 4:26-48, 7:11-25, 10:31-37, 12:24-29, 18:44-65, FIG. 1; Ex. 1039, [0011], [0049], [0056], [0061]-[0062], [0070], [0074], FIG. 2. Roth's advertising system 16 already has a database 16B that stores viewer information and the predictable result is a modification of Roth's database 16B to further include a record of the verifiability and quality of the stored viewer information.

586. Lastly, a POSITA would have had an expectation of success in combining Roth (with Jaye or Minor) and Coleman given a POSITA's skills (e.g., storing electronic information in a computer system) and familiarity with maintaining information in computer databases, and given that Roth already teaches a database of viewer profile information. Ex. 1036, 4:26-57, 9:17-41, FIGs. 2A, 4; Ex. 1037, 13:19-41 (describing scoring and that the "user profile can be incremented in real time and new interest categories can be easily added"). In addition, a POSITA would have expected Roth's advertising system 16 implementing Coleman's records of the verifiability and quality of profile information to operate as in Roth (with Jaye or Minor), but simply with the added parameter of the verifiability and quality of the information being considered by bidding agents or when selecting advertisements.

587. Accordingly, as shown above, the combination of Roth with Jaye and Coleman or the combination of Roth with Minor and Coleman teaches the additional limitations included in dependent claim 7, and renders claim 7 obvious to a POSITA.

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

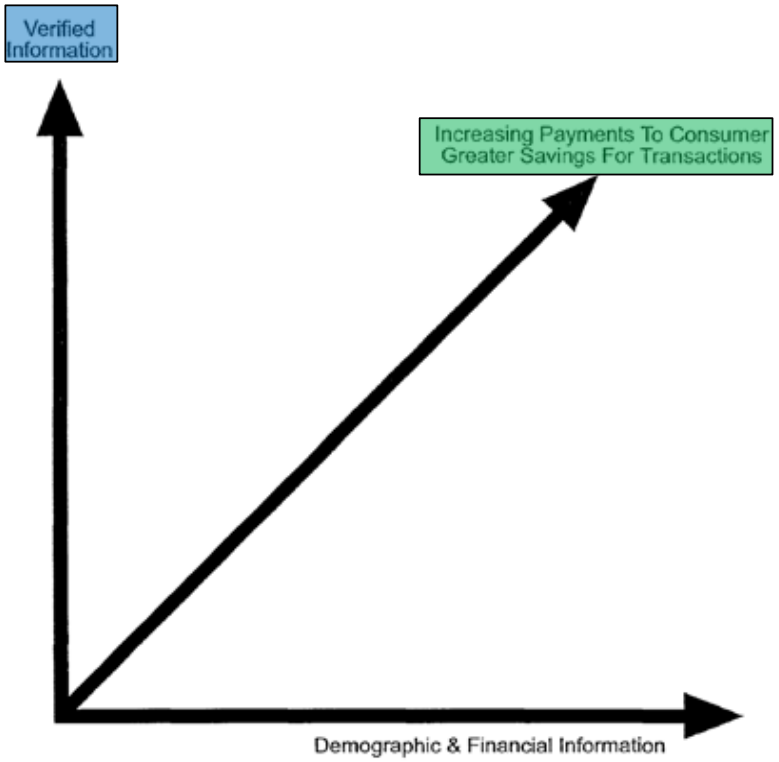
588. Claim 8 of the '249 Patent depends from claim 7 and further requires "wherein the credibility rating is reflected in a price for the at least one profile attribute." Ex. 1001, claim 8. As discussed above, claim 7, from which claim 8 depends, is taught by the combination of Roth with Jaye and Coleman or the

combination of Roth with Minor and Coleman. Roth with Jaye and Coleman or Roth with Minor and Coleman also teach the additional limitations of claim 8.

589. Roth teaches that bidding agents 30 evaluate proposed bids against characteristics of a view-op to determine whether to submit a bid to send a targeted advertisement. Ex. 1036, 14:55-59. As I explained above with respect to claim 7, it would have been obvious to a POSITA that the viewer information (*i.e.*, the characteristics of the view-op) would include a credibility rating for the viewer information, to accommodate particular criteria of the bidding agents. Roth further explains that advertisers may, through bidding agents, specify particular prices for proposed bids, such as five cents for one particular set of criteria, and four cents if other criteria are met. Ex. 1036, 13:48-53, 18:54-60. Accordingly, it would have been obvious to a POSITA that, based on the credibility rating, the advertiser may specify a particular price for a proposal (the claimed "wherein the credibility rating is reflected in a price for the at least one profile attribute").

590. Further, Coleman describes certain types of personal profile information (the claimed "at least one profile attribute") may have different levels of value to a seller. Ex. 1039, [0049], [0073], FIG. 2. Specifically, as shown in Figure 2, below, Coleman describes that as the quality or verifiability of the information (**blue**) increases, the value to a seller (e.g., an advertiser) (**green**) also increases. Ex. 1039, [0049], [0073], FIG. 2.

Fig. 2

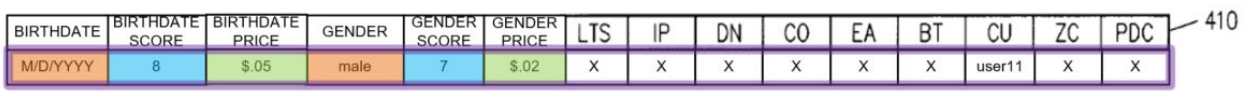


Ex. 1039, FIG. 2 (annotated)

591. A POSITA would have understood that the value of the information to a seller, such as an advertiser, either is or would be incorporated into the price the advertiser might pay for the information. For example, as Coleman describes, as the value of the information increases the seller may provide a deal (e.g., in the form of an ad) to a potential purchaser (e.g., one of Roth's viewers) based on an assumption that the potential purchaser will buy the advertised good or service. Ex. 1039, ¶ [0049]. Coleman further describes that the advertisers (sellers) will supply a

payment for profile information. Ex. 1039, [0111], FIG. 11. Accordingly, it would have been obvious to the POSITA that the seller would purchase the profile information in order to determine whether to provide the deal. Therefore, the verifiability or quality of the information (the claimed "credibility rating") would be reflected in the amount the seller pays for the information (the claimed "reflected in a price for the at least one profile attribute").

592. In at least one obvious combination of Roth with Jaye and Coleman or Roth with Minor and Coleman, Roth's advertising system 16 would have maintained a verification score (**light blue**) (the claimed "credibility rating") and price (**light green**) associated with at least one attribute of the received profile information (**orange**) (which is appended to the URL as taught by Jaye) stored in a user profile (**purple**) in Roth's database 16B using a data structure like Roth's CUD table 410. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2; Ex. 1036, 18:36-60. This is illustrated in the following drawing (also shown above), which modifies Roth's CUD table 410 to include additional fields for BIRTHDATE, BIRTHDATE SCORE, BIRTHDATE PRICE, GENDER, GENDER SCORE, and GENDER PRICE, and to include a row showing example information for a user of Roth's browser 11 (labeled user11).



BIRTHDATE	BIRTHDATE SCORE	BIRTHDATE PRICE	GENDER	GENDER SCORE	GENDER PRICE	LTS	IP	DN	CO	EA	BT	CU	ZC	PDC
M/D/YYYY	8	$.05	male	7	$.02	X	X	X	X	X	X	user11	X	X

Ex. 1036, FIG. 4 (cropped and modified)

593. As shown above, in the proposed combinations, the verification scores are reflected in a price for the attributes. In particular, as the verifiability increases (i.e., greater verification score), the value and therefore the price of associated attributes increases. Ex. 1039, ¶¶ [0049], [0073].

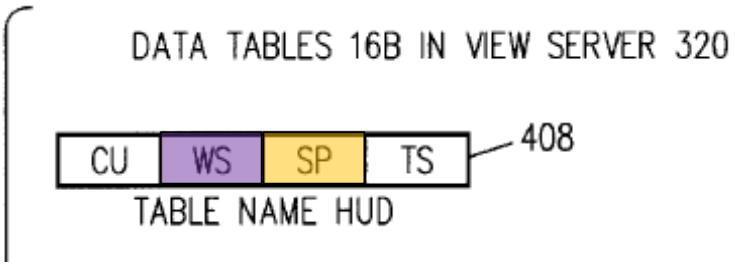
594. Accordingly, as shown above, the combination of Roth with Jaye and Coleman and the combination of Roth with Minor and Coleman teaches the additional limitations included in dependent claim 8, and renders claim 8 obvious to a POSITA.

3. Dependent Claim 9: "The method of claim 1 further comprises automatically with the computer system selecting profile attributes from the stored profile based on the source thereof."

595. Claim 9 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system selecting profile attributes from the stored profile based on the source thereof." Ex. 1001, claim 9. As discussed above, claim 1, from which claim 9 depends, is taught by the combination of Roth and Jaye or the combination of Roth and Minor.

596. Roth's system maintains a record of which unaffiliated third party contributed particular profile attributes. *See* Section XII.F.1.e, above. For example, Roth's system maintains, in database 16B, a HUD table 408 that includes information on which sites each viewer has previously visited, such as a web site ID

(WS, **purple**) and a site page ID (SP, **yellow**) indicating where an advertisement was placed. Ex. 1036, 1:30-38, 9:17-18, 9:31-32, 9:47-58, FIG. 4.



Ex. 1036, FIG. 4 (cropped, annotated)

A POSITA would have understood that information such as web site ID WS and site page ID SP are profile attributes as claimed, and they indicate their own source (e.g., the web site or site page to which the identifiers correspond).

597. Roth further describes that the advertising system 16 sends information concerning the view-op that advertisers wish to evaluate when submitting bids. Ex. 1036, 4:26-43, 18:54-60. It would have been obvious to a POSITA that, in some instances, the sent information may include the web site ID WS and/or the site page ID SP. For example, the advertiser may specify one or more criteria for proposed bids that are based on the web page and/or site page that an advertisement would be presented on, as part of the "any type of information… that advertisers want to use in setting specifications in proposed bids," as described by Roth. Ex. 1036 18:54-60, 5:12-15, 13:51-53, 14:6-18, 14:45-46. A POSITA would have understood that, in determining which information to send to the database 16B, the advertising

system 16 might select the web site ID WS and/or the site page ID SP based on the advertiser specifying the web site and/or site page in a proposed bid (the claimed "selecting profile attributes from the stored profile based on the source thereof").

598. In any event, it is my opinion that the combination of Roth with Jaye and Coleman and the combination of Roth with Minor and Coleman teach the limitations of claim 9. As I described above with respect to claim 8, Coleman discloses that the value of personal profile information (the claimed "profile attributes") increases based on the quality or verifiability of the information. Ex. 1039, [0049], [0073], FIG. 2. It would have been obvious to a POSITA that verifying information would include verifying the source of the information, in order to verify its accuracy. Ex. 1039, [0073].

599. Coleman also teaches that a seller (e.g., an advertiser proposing bids in Roth) can offer deals for goods or services (e.g., ads) to groups of potential purchasers (e.g., users) based on the value of certain types of personal profile information. Ex. 1039, [0049], [0073], FIG. 2. Therefore, it would have been obvious to a POSITA to aggregate Coleman's personal profile information (the claimed "selecting profile attributes") based on their verifiability or quality (the claimed "based on the source thereof") to provide the information to a seller so the seller can offer a deal.

600. In at least one obvious combination of Roth with Jaye and Coleman or Roth with Minor and Coleman, Roth's advertising system 16 would have maintained a source score (**light blue**) associated with at least one attribute of the received profile information (**orange**) (which is appended to the URL as taught by Jaye or included in a transparent redirect as taught by Minor) stored in a user profile (**purple**) in Roth's database 16B using a data structure like Roth's CUD table 410. Ex. 1039, ¶¶ [0049], [0056], [0072]-[0075], FIG. 2; Ex. 1036, 18:36-60. This is illustrated in the following drawing (also shown above), which modifies Roth's CUD table 410 to include additional fields for BIRTHDATE, BIRTHDATE SOURCE (SRC) SCORE, GENDER, and GENDER SOURCE (SRC) SCORE, and to include a row showing example information for a user of Roth's browser 11 (labeled user11).



Ex. 1036, FIG. 4 (cropped and modified)

601. As shown above, in this example of the proposed combinations, the source score would have been a numerical value that increases as the trustworthiness of the source increases. Therefore, taking the above example, the fact that the information in the BIRTHDATE field is associated with a BIRTHDATE SOURCE SCORE of 5 while the information in the GENDER field is associated with a

GENDER SOURCE SCORE of 3 means that the source of the BIRTHDATE information was more trustworthy/reliable than the source of the GENDER information.

602. Further, Roth's advertising system 16 would have automatically selected certain attributes from the user profile based on the source scores so that accurate/reliable information is used to provide improved targeted advertisements.

603. Accordingly, as shown above, the combination of Roth with Jaye and Coleman or the combination of Roth with Minor and Coleman teaches the additional limitations included in dependent claim 9, and renders claim 9 obvious to a POSITA.

4. Dependent Claims 17-19

604. Dependent claims 17-19 correspond to claims 7-9. As such, I have not repeated all of the analysis from above for claims 17-19. Instead, I have prepared the following table to show the claim language side-by-side and to address the minor differences. Specifically, the following table shows how dependent claims 17-19 are taught by the prior art for the same reasons that claims 7-9 are taught by the prior art.

Claims 7-9	Claims 17-19	Comparison
[7] The method of claim 1 further maintaining with the computer system a credibility rating associated with at least	[17] The computer system of claim 11 wherein the automatic method performed by the programmed computer	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 17 is

one of the profile attributes of the stored profile.	system further comprises maintaining with the computer system a credibility rating associated with at least one of the profile attributes of the stored profile.	taught for the same reasons as claim 7. *See* Section XII.H.1, above.
[8] The method of claim 7 wherein the credibility rating is reflected in a price for the at least one profile attribute.	[18] The computer system of claim 17 wherein the credibility rating is reflected in a price for the at least one profile attribute.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 18 is taught for the same reasons as claim 8. *See* Section XII.H.2, above.
[9] The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.	[19] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 19 is taught for the same reasons as claim 9. *See* Section XII.H.3, above.

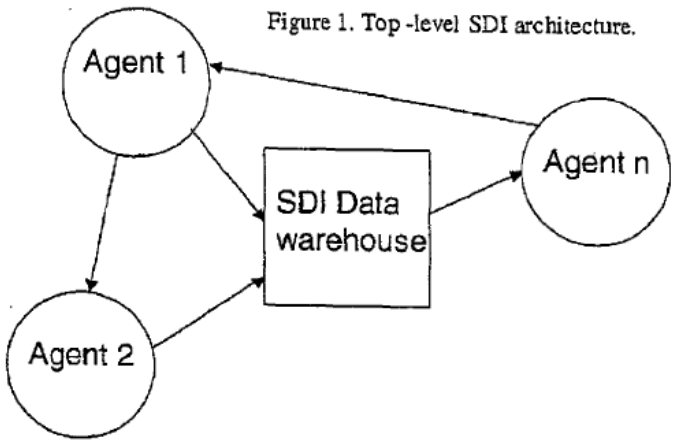
I. Roth In View Of Jaye And Herz Or Roth In View Of Minor And Herz

605. The grounds in this section add Herz to the grounds discussed in Sections XII.F and XII.G. These grounds are included in case the Patent Owner argues that dependent claims 5, 15, and 25 (which are all similar) require an electronic record that is separate from the "electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes" recited in limitations [1D], [11D], and [21D] of their respective independent claims and in case Patent Owner argues that claims 5, 15, and 25 would not have been obvious based on Roth in view of Jaye or Roth in view of Minor.

606. As explained above (see Section XII.D), Herz teaches a secure data interchange (SDI) system that enables information to be exchanged between multiple parties. Ex. 1041, pp. 1-4, 66, 71-73; Ex. 1040, Abstract, ¶ [0043]. Herz's system controls access to information (in particular, profile information), release of the information, and matching of the information back to parties that contributed the information. Ex. 1041, pp. 1-9, 24, 66, 71-73; Ex. 1040, Abstract, ¶¶ [0043], [0053], [0056]. Herz's system provides economic incentives for users to provide profile information to the system by paying users for use of their profile information (e.g., by advertisers). Ex. 1041, pp. 1-4, 10, 39-49, 53, 71-73, 96-98, 112-115, 124-131; Ex. 1040, ¶¶ [0040], [0043]-[0044]. As such, Herz's system effectively provides a marketplace for profile information. Ex. 1041, pp. 1-4, 9-10, 14, 31-36, 39-49, 53,

84-85, 95-114, 124-131; Ex. 1040, Abstract, ¶¶ [0003], [0052], [0056], [0082]-[0084], [0103]-[0104], [0126], [0876].

607. As shown in Figure 1 (below) of Herz, the system architecture includes agent computers (e.g., a PC of a consumer or a server computer executing an online business of a company/vendor) in two-way communication with an SDI data warehouse. Ex. 1041, FIG. 1, pp. 3-13; Ex. 1040, ¶¶ [0045], [0055].



Ex. 1040, FIG. 1

608. Herz's SDI data warehouse receives and stores profile information, records who owns/contributed the profile information, and issues payments to the owner when others use the profile information in queries (e.g., for targeted advertising). Ex. 1041, pp. 1-11, 14, 21-24, 26-27, 31-36, 39-49, 53, 60, 66-68, 70-73, 76-79, 84-86, 88-91, 95-117, 119-122, 124-134, 137; Ex. 1040, ¶¶ [0016]-[0017], [0025]-[0026], [0043], [0085], [0098], [0115]-[0118], [0162], [0224], [0228]-[0229], [0232]-[0234], [0238]-[0239], [0269], [0392], [0600], [0778],

[0883], [0891]. A POSITA would have understood that the SDI data warehouse is owned or controlled by a third party that is different from the parties who contributed the information to it. Ex. 1041, pp. 3-11 (describing Secure Data Interchange system with a central SDI server for allowing various parties to exchange data), 26-28, 59 ("Because this analysis, data collection, compilation and modeling procedure occurs securely and under the control of the third party operator or intermediary operating the distributed trusted server network (e.g. SDI)…"), 67 ("the SDI acts as a trusted third party to both the user and the vendor"), 69, 114, FIGs. 1, 3, 6; Ex. 1040, ¶¶ [0003]-[0006], [0043]-[0059], [0103]-[0108], [0137]-[0138], [0549]-[0550], [0583], [0768]. A POSITA would have also understood that Herz's SDI data warehouse maintains an electronic record of which owner contributed profile information used in targeting advertisements in order to issue payments back to the owner when the profile information is used. Ex. 1041, pp. 1-11, 14, 21-24, 26-27, 31-36, 39-49, 53, 60, 66-68, 70-73, 76-79, 84-86, 88-91, 95-117, 119-122, 124-134, 137; Ex. 1040, ¶¶ [0016]-[0017], [0025]-[0026], [0043], [0085], [0087]-[0088], [0098], [0114]-[0118], [0162], [0224], [0228]-[0229], [0232]-[0234], [0238]-[0239], [0269], [0392], [0600], [0778], [0883], [0891]. Specifically, Herz discloses a data record including an owner ID indicating the agent (e.g., a vendor) who provided the data and a record ID for identifying the data that was provided by the agent. Ex. 1041, pp. 26-27, 31-33, 35-36, 42-43, 52-53; Ex. 1040, ¶¶ [0114]-[0118].

609. It would have been obvious to combine each of the grounds in Sections XII.F (Roth in view of Jaye) and XII.G (Roth in view of Minor), such that Roth's advertising system 16 would have automatically and electronically maintained an additional electronic record (separate from Roth's WS field that meets the electronic record in limitations [1D], [11D], and [21D]), as taught by Herz, of which website contributed, to their respective user profiles (which were addressed in sections XII.F.1.c and XII.G.1.c with respect to limitation [1B]), profile attributes used in targeting the advertisements sent over the Internet (see sections XII.F.1.f and XII.G.1.f which address the advertisements mentioned in limitation [1E]). This teaches the claimed "automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements" in claims 5, 15, and 25.

610. In my opinion, a POSITA would have been motivated to incorporate a separate record (similar to Herz's record) into Roth's database 16B to enable Roth's advertising system 16 to pay websites (similar to Roth's website 14) for providing profile information that is used for targeted advertising. Ex. 1041, pp. 1-4, 66, 71-73, 95-117, 125-131, 133-134; Ex. 1040, ¶¶ [0040], [0043], [0847], [0876]. Paying websites for profile information would have incentivized websites to share profile information. The profile information would have been desirable to the advertising

system 16 because it would allow it to place targeted advertisements. Meanwhile, sellers would have been more likely to use the advertising system 16 if it had the ability to place targeted advertisements. The party/entity running the advertising system 16 would have understood this and would have wanted to incentivize websites to share profile information to increase its own revenues. In addition, sellers would have been more willing to pay more for placing targeted advertisements, so advertising system 16 would have been motivated to collect as much user profile information as practical to increase profit margins.

611. It is also my opinion that other rationales support my finding that the combination of Roth (with Jaye or Minor) and Herz would have been obvious. For example, the combination of Roth (with Jaye or Minor) and Herz involves use of a known technique to improve similar devices in the same way. See Section IV (referring to obviousness rationale (C)). The known techniques are Herz's techniques for storing who contributed profile information used by others (e.g., advertisers) to pay those who contributed the profile information for its use. Ex. 1041, pp. 1-4, 10, 39-49, 53, 71-73, 96-98, 112-115, 124-131; Ex. 1040, ¶¶ [0040], [0043]-[0044]. These techniques would have been used to improve Roth's database 16B, which is similar to the SDI warehouse, in the same way Herz's techniques improve its SDI warehouse by incentivizing vendors (e.g., websites) to share profile information thereby increasing the amount of valuable information in the warehouse.

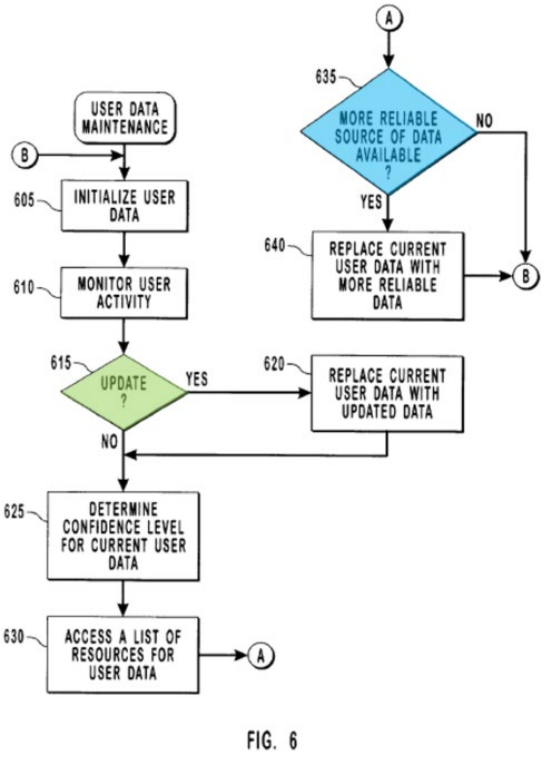
612. Lastly, a POSITA would have had a reasonable expectation of success in combining Roth with Jaye and Herz or Roth with Minor and Herz because these combinations merely involve routine database management skills that a POSITA would have had. Ex. 1036, 7:36-43, 18:36-60; Ex. 1037, 13:19-41 (describing that the "user profile can be incremented in real time and new interest categories can be easily added"); Ex. 1041, pp. 29, 34, 40, 62-63, 113-114, 120-123; Ex. 1040, ¶¶ [0109]-[0110] (explaining that its system is expandable to create new data types).

J. Roth In View Of Jaye And Gardner Or Roth In View Of Minor And Gardner

613. The grounds in this section add Gardner to the grounds discussed in Sections XII.F and XII.G. These grounds are included in case the Patent Owner argues that dependent claims 6 and 16 (which are similar) would not have been obvious based on Roth in view of Jaye or Roth in view of Minor, and in case Patent Owner argues that dependent claims 9 and 19 (which are similar) would not have been obvious in view of Coleman.

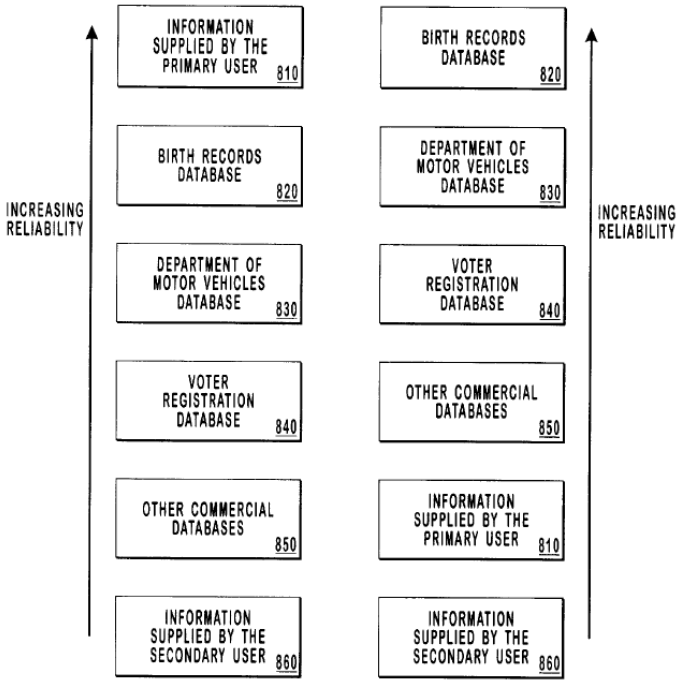
614. As explained above (see Section XII.E), Gardner teaches a method for maintaining user data in a profile, including determining whether to update a profile with newly received user data (see step 615 (**light green**) in Figure 6 below) and updating the profile as appropriate (see step 620). Ex. 1043, 7:36-8:16, FIG. 6. Gardner also teaches maintaining reliability ratings for the user data, determining if a more reliable source exists (see step 635 (**light blue**) in Figure 6 below), and

replacing current user data with more reliable data as appropriate (see step 640). Ex. 1043, Abstract, 7:48-60, 8:31-46, FIG. 6.



Ex. 1043, FIG. 6 (annotated)

615. Gardner also gives examples of the hierarchies of sources in terms of their reliability with respect to Figures 8A and 8B (below). Ex. 1043, 9:50-10:32, FIGs. 8A, 8B.



Ex. 1043, FIGs. 8A and 8B

1. **Dependent 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 the stored profile."**

616. Claim 6 of the '249 Patent depends from claim 1 and further requires "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 the stored profile." Ex. 1001, claim 6. As discussed above, claim 1, from which claim 6 depends, is taught by the combination of Roth and Jaye or the combination of Roth and Minor. Roth with Jaye and Gardner or Roth with Minor and Gardner also teach the additional limitations of claim 6. Additionally, as

discussed in the Technical Background section (see Section VIII.B on databases), a POSITA would have known the use of database queries to determine whether received data contains any data that is not previously stored in the database when adding the received data to the database, and therefore would have used queries to determine "whether the received partial profile contains any profile attributes about the entity that were not previously contained in the stored profile," as set forth in the claim.

617. Gardner teaches monitoring a user's online activity to receive user data (similar to the claimed "partial profile") and determining (see step 615) whether to update stored user data (similar to the claimed "stored profile") based on the received user data, which includes determining a value of the received user data is for a previously undefined information field. Ex. 1043, 7:66-8:16, FIG. 6. By determining whether a value of the received user data is for a previously undefined information field, Gardner's method at step 615 (**light green**) in Figure 6 (shown below) is determining whether received user data (similar to the claimed "received partial profile") contains any profile attributes about the user that were not previously contained in the stored user data.

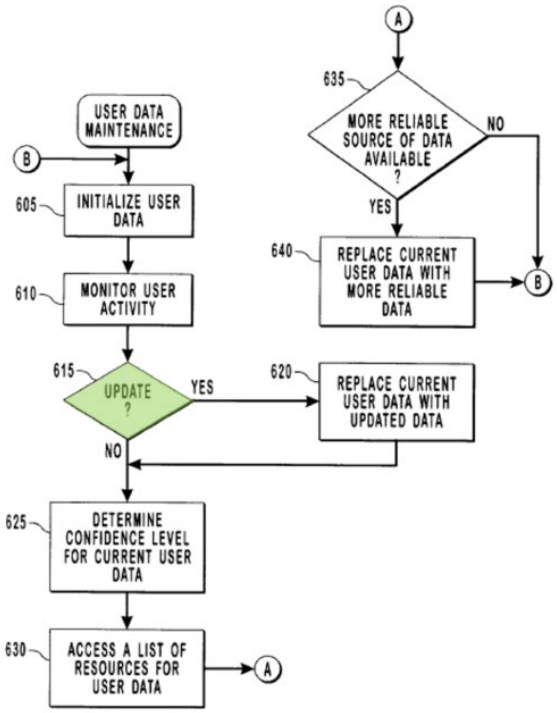
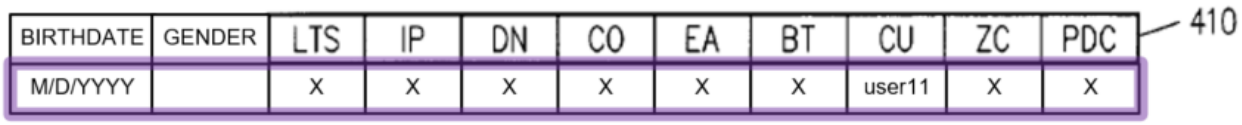


FIG. 6

Ex. 1043, FIG. 6 (annotated)

618. In my opinion, a POSITA would have found it obvious to combine Gardner with Roth in view of Jaye or Roth in view of Minor, such that Roth's advertising system 16 automatically and electronically determines whether received profile information (which is the claimed "partial profile" as discussed in sections XII.F.1.b and XII.G.1.b above) contains any attributes about the user/viewer 10 of browser 11 that were not previously contained in the user's profile in Roth's database 16B (which is the claimed "stored profile" as discussed in sections XII.F.1.c and XII.G.1.c above). For example, if the user profile (**purple**) was as shown in the below drawing (which crops Roth's Figure 4 to excerpt the CUD table 410 and then modifies that table to include additional fields for BIRTDATE and GENDER and a

row for storing a profile for the user of Roth's browser 11 (i.e., user11) as previously explained) when new profile information indicating the user's birthdate and gender was received, a POSITA would have found it obvious in view of Gardner (particularly, Gardner's step 615) to design (or program) the advertising system 16 to determine that the user profile (**purple**) already contains the user's birthdate but does not contain the gender:



Ex. 1036, FIG. 4 (cropped and modified)

Thus, Roth with Jaye and Gardner or Roth with Minor and Gardner teach claim 6.

619. A POSITA would have been motivated to make these combinations with Gardner for similar reasons that I explained above for why features of claim 6 would have been obvious. See Sections XII.F.5 and XII.G.5. A POSITA would have wanted to build a comprehensive user profile with lots of information about a user that would have been valuable for determining targeted advertisements and would have wanted to avoid overwriting or duplicating existing information in a stored user profile while doing so, which is the beneficial result of Gardner's step 615. Ex. 1043, 8:4-15. Further, a POSITA would have been motivated to avoid duplicates in order to conserve memory capacity, which would have been an important consideration given the expected large size of Roth's database 16B.

Duplicates would have also been undesirable in embodiments where sources are rewarded for contributing information because it might lead to unnecessarily rewarding multiple sources (e.g., paying multiple sources) for the same information. Similarly, overwriting the information would have been undesirable in such embodiments because it might lead to the loss of the original source of the information, which might discourage sources from contributing profile information in the long run. Thus, a POSITA would have recognized that it is desirable to build a user profile by only storing new pieces of profile information and rewarding sources for new pieces.

620. It is also my opinion that other rationales support my finding that the combination of Roth (with Jaye or Minor) and Gardner would have been obvious. For example, the combination of Roth (with Jaye or Minor) and Gardner involves use of a known technique to improve similar devices in the same way. See Section IV (referring to obviousness rationale (C)). The known techniques are Gardner's techniques for checking whether a value in received user data is for a previously undefined information field prior to updating a stored user profile and then updating the user profile if the field is undefined. Ex. 1043, 8:4-15, FIG. 6. These techniques would have been used to improve Roth's database 16B, which is similar to the database on Gardner's server 5, in the same way Gardner's determination at step 615

improves Gardner's method by undesirably updating its database with duplicate information or undesirably overwriting existing data.

621. Lastly, a POSITA would have had an expectation of success in combining Roth (with Jaye or Minor) and Gardner given a POSITA's skills (e.g., database management skills such as adding newly received information to a database), given extant database technology (see Section VIII.B), and given that Roth already teaches a database of user profile information. Ex. 1037, 13:19-41 (describing that the "user profile can be incremented in real time and new interest categories can be easily added"). In addition, a POSITA would have expected Roth's advertising system 19 implementing Gardner's determination in step 615 to successfully add newly received attributes to a user profile in Roth's database 16B without duplicating them or overwriting existing attributes. Ex. 1043, 2:50-58.

2. Dependent Claim 9: "The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the stored profile based on the source thereof."

622. Claim 9 of the '249 Patent depends from claim 1 and further requires "automatically with the computer system selecting profile attributes from the stored profile based on the source thereof." Ex. 1001, claim 9. As discussed above, claim 1, from which claim 9 depends, is taught by the combination of Roth and Jaye or the combination of Roth and Minor. Roth with Jaye and Gardner or Roth with Minor and Gardner also teach the additional limitations of claim 9.

623. Gardner teaches maintaining, for each field of user data, a reliability rating indicating a relative reliability of the source of that user data. Ex. 1043, 7:48-60. This rating is then used to determine if a more reliable source exists at step 635 (**light blue**) in Gardner's method, as shown in Figure 6 below. Ex. 1043, 8:31-46, 9:50-10:32, FIGs. 6, 8A-8B.

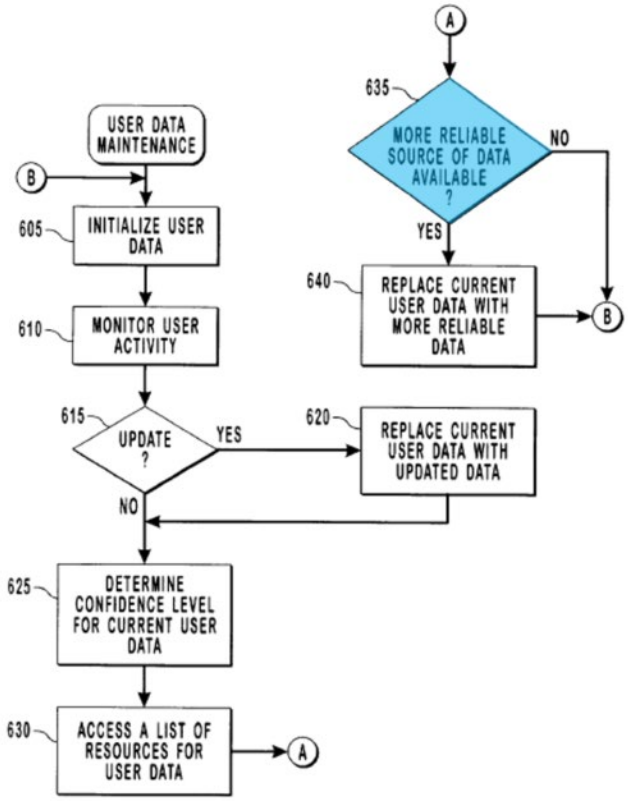
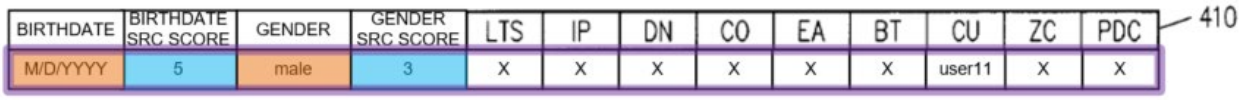


FIG. 6

Ex. 1043, FIG. 6 (annotated)

624. In my opinion, a POSITA would have found it obvious to combine Gardner with Roth in view of Jaye or Roth in view of Minor, such that Roth's advertising system 16 maintains a **source score** (similar to Gardner's reliability

ratings for sources) associated with attributes of the received profile information stored in a user profile (see CUD and HUD tables in Figure 4 of Roth). For example, in at least one obvious combination of Roth with Jaye and Gardner or Roth with Minor and Gardner, Roth's advertising system 16 would have maintained a source score (**light blue**) associated with at least one attribute of the received profile information (**orange**) (which is appended to the URL as taught by Jaye or included in a transparent redirect as taught by Minor) stored in a user profile (**purple**) in Roth's database 16B using a data structure like Roth's CUD table 410. Ex. 1043, 7:48-60, 8:31-46, FIGs. 6, 8A, 8B; Ex. 1036, 18:36-60. This is illustrated in the following drawing, which modifies Roth's CUD table 410 to include additional fields for BIRTHDATE, BIRTHDATE SOURCE (SRC) SCORE, GENDER, and GENDER SOURCE (SRC) SCORE, and to include a row showing example information for a user of Roth's browser 11 (labeled user11).



Ex. 1036, FIG. 4 (cropped and modified)

625. As shown above, in this example of the proposed combinations, the source score would have been a numerical value that increases as the trustworthiness/reliability of the source increases. Therefore, taking the above example, the fact that the information in the BIRTHDATE field is associated with a

BIRTHDATE SOURCE SCORE of 5 while the information in the GENDER field is associated with a GENDER SOURCE SCORE of 3 means that the source of the BIRTHDATE information was more trustworthy/reliable than the source of the GENDER information.

626. Further, Roth's advertising system 16 would have automatically selected certain attributes from the user profile based on the source scores so that accurate/reliable information is used to provide improved targeted advertisements. The attributes would have also been selected as part of the process for maintaining the user profile because Gardner teaches updating the user profile as data from more reliable sources becomes available. Ex. 1043, 8:37-46.

627. A POSITA would have been motivated to make these combinations with Gardner for similar reasons that I explained above for why features of claim 9 would have been obvious in view of Coleman. See Section XII.H. In particular, a POSITA would have been motivated to make these combinations to improve the accuracy of profile information, which would have increased the value of the information (e.g., to advertisers) and therefore would have allowed advertising system 16 to charge advertisers more for placing ads.

628. It is also my opinion that other rationales support my finding that the combination of Roth (with Jaye or Minor) and Gardner would have been obvious. For example, the combination of Roth (with Jaye or Minor) and Gardner involves

use of a known technique to improve similar devices in the same way. See Section IV (referring to obviousness rationale (C)). The known techniques are Gardner's techniques for maintaining reliability ratings and updating user data when data from more reliable sources becomes available. Ex. 1043, 7:48-60, 8:31-46, FIGs. 6, 8A, 8B. These techniques would have been used to improve Roth's database 16B, which is similar to the database on Gardner's server 5, in the same way Gardner's use of reliability ratings improves the accuracy of Gardner's user data.

629. Lastly, a POSITA would have had an expectation of success in combining Roth (with Jaye or Minor) and Gardner given a POSITA's skills (e.g., database management skills such as adding parameters like reliability ratings in association with particular data). Ex. 1043, 2:50-58. In addition, a POSITA would have expected Roth's advertising system 16 (implementing Gardner's reliability ratings) to successfully store reliability ratings in association with profile information in Roth's database 16B.

630. Accordingly, as shown above, the combination of Roth with Jaye and Gardner or the combination of Roth with Minor and Gardner teaches the additional limitations included in dependent claim 9, and renders claim 9 obvious to a POSITA.

3. Dependent Claims 16 and 19

631. Dependent claims 16 and 19 correspond to claims 6 and 9. As such, I have not repeated all of the analysis from above for claims 16 and 19. Instead, I

have prepared the following table to show the claim language side-by-side and to address the minor differences. Specifically, the following table shows how dependent claims 16 and 19 are taught by the combinations including Roth and Gardner for the same reasons that claims 6 and 9 are taught by the combinations including Roth and Gardner.

Claims 6 and 9	**Claims 16 and 19**	**Comparison**
[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 the stored profile.	[16] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises 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 the stored profile.	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 16 is taught for the same reasons as claim 6. *See* Section XII.J.1, above.
[9] The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.	[19] The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system selecting profile attributes from the	Aside from their dependencies and statutory class, the claims are identical. Thus, claim 19 is taught for the same reasons as claim 9. *See* Section XII.J.2, above.

	stored profile based on the source thereof.	

XIII. EVIDENCE OF NON-OBVIOUSNESS

632. It is my understanding that in order for evidence of non-obviousness or secondary considerations to be relevant, there must be a nexus between the claimed invention and the evidence. I am not aware of any evidence of non-obviousness or secondary considerations.

XIV. CONCLUSION

633. All of the statements made in this declaration of my own knowledge are true. All statements made based on information and belief are believed to be true. Further, these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code.

Date: 2/26/24

Sanjay Ranka, Ph.D.

Appendix A

SANJAY RANKA
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BRIEF BIOGRAPHY

Sanjay Ranka is a Distinguished Professor in the Department of Computer Information Science and Engineering at University of Florida. From 1999-2002, as the Chief Technology Officer at Paramark (Sunnyvale, CA), he developed a real-time optimization service called PILOT for marketing campaigns. PILOT served more than 10 million optimized decisions a day in 2002 with a 99.99% uptime. Paramark was recognized by VentureWire/Technologic Partners as a Top 100 Internet technology company in 2001 and 2002 and was acquired in 2002. Sanjay has also held positions as a tenured faculty member at Syracuse University, academic visitor at IBM T.J. Watson Research Labs and summer researcher at Hitachi America Limited.

His areas of expertise are data science, machine learning and high-performance computing. The focus of his current research is on using them for solving applications in Transportation, Health Care and Scientific Computing. His current research is funded by NIH, NSF, DOE, USDOT and FLDOT.

He has coauthored one book, four monographs, 340+ journal and refereed conference articles. His recent coauthored work has received a best student paper runner-up award at IGARSS 2015, best paper award at BICOB 2014, best student paper award at ACM-BCB 2010, best paper runner-up award at KDD-2009, a nomination for the Robbins Prize for the best paper in the Journal of Physics in Medicine and Biology for 2008, and a best paper award at ICN 2007.

He is a fellow of the IEEE and AAAS and a past member of IFIP Committee on System Modeling and Optimization. He received the Research Impact Award in 2021 from IEEE Technical Committee on Cloud Computing. He was also awarded the 2022 Distinguished Alumnus Award from Indian Institute of Technology, Kanpur.

He is an associate editor for ACM Computing Surveys, Applied Sciences, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Sustainable Computing: Systems and Informatics, Knowledge and Information Systems, and International Journal of Computing. Additionally, he is a book series editor for CRC Press for Bigdata. In the past, he has been an associate editor for IEEE Transactions on Parallel and Distributed Systems, associate editor for IEEE Transactions on Computers, and an associate editor-in-chief of the Journal of Parallel and Distributed Computing. He was a general co-chair for International Conference in Data Mining in 2009, International Green Computing Conference in 2010 and International Green Computing Conference in 2011, a general chair for ACM Conference on Bioinformatics and Computational Biology in 2012, and a program chair for 2013 International Parallel and Distributed Processing Symposium and 2015 HiPC Conference. He was a co-general chair for DataCom 2017 and co-program chair for International Conference on Machine Learning and Data Science for 2017, 2018 and 2023. He is the co-program chair for International Conference in Data Mining for 2022.

His work has received 16000+ citations with an h-index of 64 (based on Google Scholar). He has consulted several startups.

EDUCATION

University of Minnesota	Ph.D. in Computer Science	Minneapolis, MN (1988)
	M.S in Computer Science	Minneapolis, MN (1986)
Indian Institute of Technology	B.Tech. Computer Science	Kanpur, India (1985)

WORK EXPERIENCE

August 2002-present Tenured Distinguished Professor, University of Florida, Gainesville, FL

The focus of my current research is using Machine Learning, Internet of Things, Accelerator Computing and Cloud Computing for solving applications in Transportation and Health Care. I have been a PI or a co-PI for approximately $28 million during the last 12 years. I have graduated 20 doctoral students during that time. Most of them are currently employed by Amazon, Google, Facebook, Microsoft, Qualcomm and other technology companies.

- Artificial Intelligence for Intelligent Transportation and Smart Cities
  - Led development of real-time machine learning algorithms and software to analyze video feeds from cameras and fuse them with ground sensor data for real-time detection of potential collisions or “near-misses” between pedestrians and vehicles.
  - Deployed these algorithms and software on Edge based computers and AWS Cloud.
  - Working with the City of Gainesville and the City of Orlando to quantitatively measure intersections by safety, and to transmit information about unsafe behavior to connected vehicles and pedestrians in real-time.
- Data Science for Health Care
  - Developing a novel smart watch app called ROAMM (Real-time Online Assessment and Mobility Monitor) that offers continuous and long-term connectivity and bidirectional interactivity with programmable measurements – a necessity for capturing data surrounding an intervening health event (e.g., episodic falls, injuries, and hospitalizations)
  - Deploying this software on AWS Cloud for pre-clinical trials to capture activity and mobility patterns of free-living adults and their reported outcomes, including pain and anxiety levels for a variety of health care studies.
- Accelerator and Exascale Computing for Scientific Applications
  - Developing algorithms and software for applications with dynamic computational structure and sparse data sets (compressible turbulence, synthetic aperture radar, and sparse matrix factorization).
  - Developed novel approaches real-time scheduling of irregular and hierarchical structures, intelligent task-to-core mapping, energy-aware task scheduling, dynamic voltage scaling and load balancing on millions of cores.

1999- 2002 Chief Scientist/Chief Technology Officer, Paramark Inc., Sunnyvale, CA

- Conceptualized, designed and developed a real-time, parallel and fault-tolerant optimization service called PILOT that used active machine learning to conduct online experiments and used it in conjunction with data mining techniques to derive the best advertisement based on consumer profiles and/or changing conditions.
- Deployed a data-center solution that served more than 10 million optimized decisions a day in 2001 with a 99.99% uptime. This resulted in 20-100% improvement in revenue generated for advertisement campaigns of Capitol One, American Express and Chase Bank.
- Lead inventor of many seminal patents in choice optimization of advertisements in an interactive medium. Many of them are now owned by Google.
- Raised more than $10 million in venture capital. Paramark was recognized by VentureWire / Technologic Partners as a top 100 Internet technology company in 2001 and 2002 and was acquired in 2002.
- Real-time choice optimization and targeting for online advertising, pioneered by me while at Paramark, was a major market disrupter and was adopted in advertising technology platforms such as DoubleClick (acquired by Google in 2007) and marketing/CRM solutions such as Adobe-Omniture.

Tenured Associate Professor (1995-1999), University of Florida, Gainesville, FL

- Led teams that conducted leading edge research and development in the areas of scalable software, data mining and bio-medical computing. My research had a practical bent with strong theoretical underpinnings.
- Led or co-led large government and defense supported projects. I was a Principal investigator or Co-Principal Investigator of 2+ million dollars grants from NSF, ARMY, ARPA and NIH.
- Taught undergraduate and graduate courses on algorithms and scalable computing.
- Developed novel algorithms and software for Dynamic multileaf collimator intensity modulated radiation therapy. This technology is currently used in commercial radiation treatment planning systems.

Tenured Associate/Assistant Professor (1988-1995), Syracuse University, Syracuse, NY

- Led or Co-led teams that conducted leading edge research and development in the areas of scalable software and parallel algorithms.
- Led or co-led large government and defense supported projects. I was a Principal Investigator or Co-Principal Investigator for sponsored research of 3+ million from NSF, NASA, NIH, ONR, and ARPA.
- Taught undergraduate and graduate courses on algorithms and scalable computing.
- Co-developer of the Fortran90D compiler, one of the first compilers that demonstrated that scalable performance can be automatically achieved on large scale distributed memory machines and that has had lasting impact on design of high-performance parallel languages. Key features in Fortran90D to support data distribution and optimized runtime libraries, co-developed by me, for generating high performance are now present in vendor supported HPC languages such as Chapel, X10, and NVIDIA CUDA platform.

HONORS, AWARDS, AND SPECIAL APPOINTMENTS

1. Board Member, American Society of Artificial Intelligence, 2023-present.
2. University of Florida Foundation Research Professorship, 2023-2026.
3. Fellow of AAIA (Asia-Pacific Artificial Intelligence Association), 2023.
4. Distinguished Alumnus Award, Indian Institute of Technology, Kanpur, 2022.
5. Research Impact Award for "significant and impact contributions to theory and practice of cloud computing", IEEE Technical Committee on Cloud Computing, 2020.
6. University of Florida Foundation Research Professorship, 2018-2021.
7. Outstanding Service Award, IEEE Computer Society Technical Committee on Parallel Processing, 2015.
8. AAAS Fellow for "distinguished contributions to theory and practice of parallel and distributed computing," 2006.
9. IEEE Fellow for "contributions to theory and practice of high performance computing," 2002.
10. Advisory board member, IEEE Technical Committee on Parallel Processing, 1998-2003.
11. Member, IFIP Committee on System Modeling and Optimization, 1999-2012.
12. Associate Editor-in-Chief for Algorithms, Journal of Parallel and Distributed Computing (Algorithms and Scientific Computing), 2011-present.
13. Subject Area Editor, Journal of Parallel and Distributed Computing (Algorithms and Scientific Computing), 1993-2010.
14. Associate Editor, IEEE Transactions on Parallel and Distributed Systems, 2010-2014.
15. Associate Editor, IEEE Transactions on Computers, 2011-2015.
16. Associate Editor, IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2013-present.
17. Associate Editor, Sustainable Computing: Systems and Informatics, 2010-present.
18. Associate Editor, Knowledge and Information Systems, 2010-present.
19. Associate Editor, International Journal of computing, 2010-present.
20. Associate Editor, ACM Computing Surveys, 2013-present.
21. Member, Editorial Board, Applied Sciences (Computing and Artificial Intelligence), 2019-present.

PATENTS

1. United States Patent Number 8,805,715. Brian Jones and Sanjay Ranka. Method for Improving the Performance of Messages Including Internet Splash Pages. Aug. 12, 2014.
2. United States Patent Number 8,386,315. Arvind Bala, Richard Chatwin, Brian Jones, Ahmet Nalcacioglu, and Sanjay Ranka. Yield Management System and Method for Advertising Inventory, Feb. 26, 2013.
3. United States Patent Number 8,260,663. Sanjay Ranka, Diane Chang, and Daniel Veiner. Method, Algorithm, and Computer Program for Targeting Messages Including Advertisements in an Interactive Measurable Medium, Sept. 4, 2012.
4. United States Patent Number 8,144,686. Sartaj Sahni, Nageshwar Sirikonda Venkata, Sanjay Ranka, Yan Li, Eun-sung Jung, and Narayana Kamath. Method and Systems

for Bandwidth Scheduling and Path Computation for Connection-Oriented Networks, Mar. 27, 2012.
5. United States Patent Number 7,573,978. Srijit Kamath, Sartaj Sahni, Jonathan Li, Jatinder Palta, and Sanjay Ranka. Variable Feathering Field Splitting for Intensity Modulated Fields of Large Size, Aug. 11, 2009.
6. United States Patent Number 7,415,423. Sanjay Ranka, Jason Lenderman, and James Weisinger. Method, Algorithm, and Computer Program for Optimizing the Performance of Messages Including Advertisements in an Interactive Measurable Medium, Aug. 19, 2008.
7. United States Patent Number 7,406,434. Diane Chang, Richard Chatwin, Sachin Kumar, Sanjay Ranka, James Weisinger, and Jason Lenderman. System and Method for Improving the Performance of Electronic Media Advertising Campaigns through Multi-attribute Analysis and Optimization, July 29, 2008.
8. United States Patent Number 7,142,635. Srijit Kamath, Sartaj Sahni, Jonathan Li, Jatinder Palta, and Sanjay Ranka. Field Splitting for Intensity Modulated Fields of Large Size, Nov. 28, 2006.
9. United States Patent Number 7,085,348. Srijit Kamath, Sartaj Sahni, Jonathan Li, Jatinder Palta, and Sanjay Ranka. Leaf Sequencing Method and System, Aug. 1, 2006.
10. United States patent number 6,563,952. Anurag Srivastava, G. D. Ramkumar, Vineet Singh, and Sanjay Ranka. Method of High Dimensional Data and Apparatus for Classification, May 13, 2003.
11. United States Patent Number 6,173,280. G. D. Ramkumar, Sanjay Ranka, and Shalom Tsur. Method and Apparatus for Generating Weighted Association Rules, Jan. 9, 2001.
12. United States Patent Number 5,987,468. Vineet Singh, Khaled Alsabti, and Sanjay Ranka. Structure and Method for Efficient Parallel High-Dimensional Similarity Join, Nov. 16, 1999.
13. United States Patent Number 5,983,224. Vineet Singh, Sanjay Ranka, and Khaled Alsabti. Method and Apparatus for Reducing the Computational Requirements of K-Means Data Clustering, Nov. 9, 1999.

Selected Invited Presentations

1. Keynote Speaker, Machine Learning for Smart Transportation, International Conference on Civil Engineering Fundamentals and Applications (ICCEFA'23) , Lisbon, Dec. 2023.
2. Keynote Speaker, Leveraging AI for Transportation, 2023 7th International Symposium on Computer Science and Intelligent Control, ISCSIC 2023 ISCSIC 2023, Oct. 2023.
3. Keynote Speaker, Volumetric scientific data reduction with performance guarantees, International Conference on Contemporary Computing (IC3-2023), August 2023.
4. Keynote Speaker, Machine Learning for Smart Transportation, Advances in Information Communication Technology & Computing, Bikaner, India, Dec. 2022.
5. Keynote Speaker, Machine Learning for Smart Transportation, International Conference on Machine Learning, and Intelligent Systems (MLIS2022), Seoul, Republic of Korea, Nov. 2022.
6. Keynote Speaker, Artificial Intelligence and Machine Learning for Smart Transportation, INFRAMEET 2022, Chicago, Nov. 2022.

7. Keynote Speaker, Edge Based AI for Smart Transportation, International Conference on Computing Innovation and Applied Physics, Aug. 2022.
8. Invited Speaker, A Multi-Sensor Edge Based System for Intelligent Traffic Intersections, IEEE MetroCAD, Detroit, Apr. 2022.
9. Keynote Speaker, Edge Based Artificial Intelligence for Smart Transporation, International Conference on Informatics (ICI-2022), New Delhi, Apr. 2022.
10. Plenary Speaker, Power and Performance tradeoffs for Exascale Computing, Global Summit on Power and Energy Engineering (GSPEE2022), Dubai, Mar. 2021.
11. Keynote Speaker, International Conference on Information System Design and Intelligent Applications (INDIA - 2022), Hyderabad, India, Feb. 2021.
12. Plenary Speaker, Artificial Intelligence for Smart Transportation, 11th International Advanced Computing Conference, Malta, Dec. 2021.
13. Invited Keynote Speaker, ROAMM: A smartwatch-based framework for real-time and online assessment and mobility monitoring, Third World Aging and Rejuvenation Conference (ARC-2021), Sep. 2021.
14. Invited Speaker, ROAMM: A smartwatch-based framework for real-time and online assessment and mobility monitoring, IEEE Symposium on Data Analytics and Internet of Things, Nov. 2020.
15. Invited Keynote Speaker, Artificial Intelligence for Transportation, World Congress on Artificial Intelligence and Robotics Research, Zurich, Switzerland, October. 2020.
16. Invited Keynote Speaker, Big data Computing and Machine Learning for Intelligent Transportation and Connected Vehicles, The Fifth International Conference on Fog and Mobile Edge Computing (FMEC 2020), Paris, France, Jul. 2020.
17. Invited Keynote Speaker, Big data Computing and Machine Learning for Intelligent Transportation and Connected Vehicles, The Third International Workshop on Intelligent Transportation and Connected Vehicles Technologies (ITCVT 2020), part of The 32th IEEE/IFIP Network Operations and Management Symposium (NOMS 2020), Budapest, Hungary, Apr. 2020.
18. Invited Speaker, Vision Track, A Vision of Smart Traffic Infrastructure for Traditional, Connected and Autonomous Vehicles, IEEE Conference on Connected and Autonomous Driving (MetroCAD), Detroit, Michigan, Feb. 2020.
19. Invited Plenary Speaker, International Conference on Machine Learning and Data Science, Hyderabad, India, Dec. 2019.
20. Invited Keynote Speaker, A Multi-sensor System for Traffic Analysis at Smart Intersections, International Conference on Contemporary Computing, Noida, India, Aug. 2019.
21. Invited Keynote Speaker, Silver Jubilee Foundation Day celebration, Machine Intelligence Unit, Indian Statistical Institute, Kolkatta, Mar. 2018.
22. Invited Keynote Speaker, Smart Intersection Control Algorithms for Automated and Connected Vehicles, BigDF Workshop, High Performance Computing Conference (HiPC 2017), Nov. 2017.
23. Invited Speaker, Optimization Algorithms for Transportation, International Conference on Contemporary Computing, Aug. 2017.
24. Invited Keynote Speaker, Performance, Energy and Thermal Aware Algorithms for Hybrid Multicore Processors, The 22nd IEEE Symposium on Computers and Communications, July 2017.
25. Invited Keynote Speaker, Multiobjective Algorithms for Hybrid Multicore Processors, International Green and Sustainable Computing Conference, Nov. 2016.

26. Invited Keynote Speaker, High Performance Computing and Data Science for Large Scale Spatiotemporal Applications, International Conference on Contemporary Computing, Aug. 2016.
27. Invited Plenary Speaker, Energy Efficient Multicore Computing, Second International Conference on Eco-friendly Computing and Communication Systems, Oct. 2014.
28. Invited Keynote Speaker, Gliding through Large Amounts of Data, IEEE International Conference on Parallel, Distributed and Grid Computing, Dec. 2012.
29. Invited Keynote Speaker, Advance Reservations for Network Centric Applications on Grids and Clouds, The 4th IEEE International Conference on Cloud Computing Technology and Science, Dec. 2012.
30. Invited Keynote Speaker, Energy Efficient Multicore Computing, 5th International Conference on Information Systems, Technology and Management, New Delhi, India, Mar. 2011.
31. Invited Keynote Speaker, In-Silico Methods for Metabolic Engineering, 2nd International Conference on Contemporary Computing, Aug. 2010
32. Invited Keynote Speaker, Talk Title: Novel Mixture Models to Learn Complex Patterns in High-Dimensional Data, ICDM 2009 Workshop on Optimization Based Methods for Emerging Data Mining Problems.
33. Invited Keynote Speaker, Energy Aware Computing, International Conference on Contemporary Computing, Aug. 2008.
34. Invited Speaker, Grid Resource Management, International Conference on Grid and Pervasive Computing, May 2006.
35. Invited Speaker, Information Management and Computation Scheduling for Life Science Applications, SURA Cyberinfrastructure Workshop: Life Sciences and the Grid, Jan. 2006.
36. Invited Speaker, Real-Time Data Mining on Grids, SIAM Workshop on High Performance Data Mining, 2004.

SPONSORED RESEARCH PROJECTS

Completed

1. Principal Investigator: Performance Modeling of SIMD and MIMD Parallel Computers Using Neural Networks, NSF (July 1991-Dec. 1992), approximately $65,000.
2. Co-Principal Investigator: Fault Tolerance and Reliability Analysis of Neural Networks, Rome Laboratories (Jan. 1992-Dec. 1992), $100,000 (with Chilukuri K. Mohan and Kishan G. Mehrotra).
3. Co-Principal Investigator: Fortran 77D and Fortran 90D: Scalable and Portable Software Module for SIMD and MIMD Distributed Memory Parallel Computers, DARPA (Sept. 1991-Aug. 1994), $1,581,033 (with Geoffrey C. Fox and Alok C. Choudhary).
4. Co-Principal Investigator: Development of Software and Applications for Parallel Computers, IBM Yorktown (May 1991-Oct. 1992), $95,652 (with Geoffrey C. Fox and Alok C. Choudhary).
5. Co-Principal Investigator: Fault Tolerance and Reliability Analysis of Neural Networks,New York State Center for Computer Applications and Software Engineering (July 1991-June 1992), $20,000 (with Chilukuri K. Mohan and Kishan G. Mehrotra).

6. Co-Principal Investigator: Development of a Device Driver, Parasoft Corporation, $30,000 for six months (June 1992-Dec.1992). (with Geoffrey C. Fox).
7. Co-Principal Investigator: Software Environments and Scalable High-Level Data Structure Extensions of Fortran for Irregular Loosely Synchronous Problems on SIMD and MIMD Parallel Computers (Dec. 92-Dec. 95), $768,966 (subcontract to Rice University; with Geoffrey C. Fox and Alok C. Choudhary).
8. Co-Principal Investigator: High-Performance Computing and Parallel Processing in the Utility Industry, Niagara Mohawk (June 1993-Mar. 1994), $200,000 (with Geoffrey C. Fox, Paul D. Coddington, Alok C. Choudhary, Salim Hariri, and Michael S. Nilan).
9. Principal investigator: Common Runtime Support for High Performance Languages, subcontract to University of Florida from Syracuse University ($126,708 for two years) (part of a $3.16 million grant with G. C. Fox et al. from ARPA for three years).
10. Principal investigator: Mainstreaming Parallel and Distributed Computing in the Computer Science Undergraduate Curriculum, NSF (Aug. 1996-July 1999), $391,565 (excluding matching funds from University of Florida; with T. Johnson, S. Rajasekaran, G. Ritter, S. Sahni).
11. Co-Principal investigator: Distributed Computing and Databases for High Energy Physics, NSF (subcontract from Cornell University) (Aug. 1997-July 1999), $381,923 (PI: Paul Avery).
12. Principal Investigator: Scalable Parallelization of Spatial Data Structures, BMDO/ARO (subcontract from NMSU), (1997-1999), approx $73,960.
13. Co-Principal Investigator: A Framework for Matching Applications with Parallel Machines, US ARMY (Oct 97-Sep 98), $50,000 (with Sahni, Peir).
14. Co-Principal investigator: Integrating Randomization Techniques in the Undergraduate and Graduate Curricula, NSF (Aug. 1998-July 2001), $372,312 (excluding matching funds from University of Florida) (PI: Rajasekaran).
15. Co-Principal Investigator: High Performance Web-Centric Computing, IBM SUR Equipment Grant (1998-1999), approximately $625,000 (with Ritter, Fishwick).
16. Co-Principal Investigator: Real-Time Dose Computation and Treatment Planning, NIH (1999-2004), (PI: Sahni). $1.362 million.
17. Principal Investigator, A Data Mining and Exploration Middleware for Distributed and Grid Computing, Collaborative NSF grant (2003-2008) (with Minnesota and Illinois Chicago: Total amount $1.5 million, UF portion; $535,000).
18. Investigator, Resource Center for Emerging Technologies, NIH (2002-2007) (PI: Palta), $2.65 million.
19. Principal Investigator, An Inter-regional Grid-Enabled Center for HEP Research and Education Outreach (CHEPREO) at FIU, National Science Foundation (2003-2007), $116,970.
20. Principal Investigator, Acquisition of CASTOR: A High-Performance Communication and Storage Backbone for Data-Intensive Science and Engineering Computing, (2004-2006) National Science Foundation, $600,000 (+ matching monies from UF).
21. Principal Investigator, Blue Team Plan for Knowledge Management, Defense Threat Reduction Agency, (2003-2006), $123,835.
22. Co-Principal Investigator, SEI: Data Mining for Multiple Antibiotic Resistance (NSF), (2006-2009), $568,237 (PI: Jermaine).
23. Co-Principal Investigator, Advanced Scheduling of High-Speed Networks, DOE (subcontract from AAS), 2006-2007, $52,000 (includes UF matching), (PI: S. Sahni).
24. Principal Investigator, Strategic Planning and Innovative Research, DTRA, 2007-2009, DTRA, approx $13,665 (with T. Anderson). (subcontract from PSU)

25. Principal Investigator, PLANETS: PLaNetS: Physica Lambda Network System, subcontract from Caltech, National Science Foundation, $53,500 (8/1/2007-7/31/2010)
26. Principal Investigator, An Inter-Regional Grid-Enabled Center for HEP Research and Education Outreach (CHEPREO) at FIU, National Science Foundation (2007-2009), subcontract from FIU, approx $103,800.
27. Co-Principal Investigator, Advanced Scheduling of High-Speed Networks Advanced Algorithms and Systems, 2006-2007, $52,000 (includes UF matching), (PI: S. Sahni).
28. Co-Principal Investigator, Co-scheduler for High-Performance Computer Systems and Networks, UltraHiNet, 2008-2009, $52,000 (includes UF matching), (PI: S. Sahni).
29. Principal Investigator, CSR: Medium: Collaborative Research: GridPac: A Resource Management System for Energy and Performance Optimization on Computational Grids (National Science Foundation), (2009-2014), $405,000.
30. Principal Investigator, MCDA: Collaborative Research: A Multi-Element and Multi-Objective Optimization Approach for Allocating tasks to Multi-Core Processors, National Science Foundation /Semiconductor Research Corporation (2009-2013), $300,000.
31. Co-Principal Investigator, Ensuring Quality Care for Radiation Patients, Florida Department of Health (2010-2012), $740,838 (PI: Palta).
32. Co-Principal Investigator, CiC: EAGER: Inferring Patterns and Processes of Genome Evolution through Cloud Computing, National Science Foundation (2010-2012), $300,000 (PI: Burleigh).
33. Co-Principal Investigator, III: EAGER: A Framework for Large Data Analysis**,** National Science Foundation (2011-2013), $100,000 (PI: Dobra).
34. Co-Principal Investigator, Sparse Direct Methods on High-Performance Heterogeneous Architectures**,** National Science Foundation (2011-2015), $310,000 ((PI: Davis).
35. Principal Investigator, Partitioning and Scheduling Real-time applications for Multicore Mobile Devices and Hybrid Clouds, Samsung Corporation (2012), approx $140,000.
36. Principal Investigator, Student Travel Sponsorship for Third ACM BCB Conference 2012, National Science Foundation (2012-2013), $24,000.
37. Co-Principal Investigator, Engineering Informatics of Actigraphy for Preventing Mobility Incidents in Older Adults. UF Informatics Institute Seed Fund Grant (2014-2015), $37,838 (PI: Manini).
38. Principal Investigator, Performance, Energy and Thermal Tradeoffs for Next Generation Intel Multicore Machines. Intel Corporation (2016), $100,000.
39. Principal Investigator, Thermal Aware Computing: Hardware Monitoring and Software Controls, UF Foundation/Harris Corporation (2016), $20,000.
40. Principal Investigator, Determining the Feasibility of Automatic Processing of Video Log Images for Detection of Key ADA Features, FDOT (2016), approx. $9000.
41. Co-Principal Investigator, MRI: Acquisition of GatorCloud: Enabling High-Impact Scientific Research and Collaboration via Software Defined Networks and Cloud Services, National Science Foundation (2012-2017), approx. $1.17 million + matching funds from the university (PI: Andy Li).
42. Co-Principal Investigator, Development and Testing of Optimized Autonomous and Connected Vehicle Trajectories at Signalized Intersections, Florida Department of Transportation (2015-2017), $392,603 (PI: Elefeteriadou).

43. Co-Principal Investigator, PEAKS: Validation of Mobile Technologies for Clinical Assessment, Monitoring and Intervention, Everyfit Inc (2016-2017) (PI: Todd Manini), approximately $35,000.
44. Principal Investigator, Big Data in Transportation, District 5 (Florida Department of Transportation) (2016-2018), approx. $630,000.
45. Principal Investigator, Performance, Energy and Thermal Tradeoffs for Next Generation Intel Multicore Machines, INTEL CORP, (2016-2016) $100,000.
46. Principal Investigator, Determining the feasibility of automatic processing of video log images for detection of key ADA features, Florida Department of Transportation, (2016-2016) $9,000
47. Co-PI, PCORI Health Systems Demonstration Project NYC Capricorn (2016-2018), $308,000 (PI:Shenkman).
48. Investigator, Finding SuperUtilizers in Texas Medicaid (effort in Texas External Quality Review Organization Vendor and Quality Vendor), Texas Health and Human Services (2014-2019), approx. $350,000 (PI: Shenkman) (Total Project Budget, $45+ million).
49. Co-Principal Investigator, EAGER: Parallel Semi-supervised Machine Learning for Volumetric Datasets, National Science Foundation (2017-2019), $100,000 (PI: Rangarajan).
50. Principal Investigator, SparseKaffe: High-Performance, Auto-Tuned Energy-Aware Algorithms for Sparse Direct Methods on Modern Heterogeneous Architectures, National Science Foundation (2015-2019), $395,454.
51. Principal Investigator, Energy-Aware Time Change Detection Using Synthetic Aperture Radar on High-Performance Heterogeneous architectures, Air Force Office of Scientific Research (2015-2019), approx. $705,000.
52. Principal Investigator, Truck Taxonomy and Classification Using Video and Weigh-In-Motion (WIM) Technology, Florida Department of Transportation (2017-2019), approx. $200,000.
53. Principal Investigator, Dynamic Intersection Learning Machine Optimization Real-time Engine, District 5 (Florida Department of Transportation) (2017-2019), approx. $230,000.
54. Principal Investigator, Machine Learning Algorithms for Demand and Turning Movement Count, FDOT, 2018-2020, approx. $200,000.
55. Principal Investigator, EAGER: Software-Hardware Co-Design Approaches for Multi-Level Memories, National Science Foundation (2017-2020), $300,000.
56. Principal Investigator, Data Management and Analytics for UF Smart Testbed, FDOT, (2017-2020), approx. $540,000.
57. Principal Investigator, Traffic-event Unification System Highlighting Arterial Roads, FDOT, 2017-2020, approx. $300,000.
58. Co-Principal Investigator, Center for Compressible Multiphase Turbulence (CCMT), DOE/NNSA (2014-2020), approx. $10 million (PI: Bala Balachandar).
59. Co-Principal Investigator, CPS: TTP Option: Synergy: Traffic Signal Control with Connected and Autonomous Vehicles in the Traffic Stream, National Science Foundation (2015-2021), approx. $1.6 million (PI: Elefeteriadou).
60. Principal Investigator, Data Analytics and Evaluation of the Gainesville Trapezium Connected Vehicle Signal Phasing and Timing (SPaT) Deployment Project, Florida Department of Transportation, (2019-2020), $249,655.
61. Principal Investigator, Parallel study in Trusted AI to support Sandia/UF Collaboration, UF VP of Research (2020-2021), $50,000.

62. Principal Investigator, Bigdata Analytics and Artificial Intelligence for Smart Intersections, Florida Department of Transportation (2019-2022), $750,000.
63. Co-Principal Investigator, A Downscaling-Assimilation Framework for SMAP Observations to Obtain High-Resolution Crop Yields in Heterogeneous Agricultural Regions, NASA (2017-2022), approx. $450,000 (PI: Judge).

Active

64. Principal Investigator, Hybrid Learning Techniques for Data Reduction with Performance Guarantees, DOE (2021-2024), $900,000.
65. Principal Investigator, RAPIDS2: A SciDAC Institute for Computer Science, Data and Artificial Intelligence, DOE (2020-2025), $550,000.
66. Principal Investigator, Video-Based Machine Learning for Smart Traffic Analysis and Management, National Science Foundation Smart Cities and Communities, (2019-2023), approx. $2 million.
67. Principal Investigator, Wearable Technology Infrastructure to Enhance Capacity for Real-Time, Online Assessment and Mobility (ROAMM) of Intervening Health Events in Older Adults, National Institute of Aging, 2019-2024, approx. $2.6 Million (Todd Manini is the other PI).
68. Co-Core Leader OAIC Data Science and Applied Technology Core, National Institute of Aging, 2017-2022 approx. $2 Million, (PI: Pahor).
69. Principal Investigator, Machine Learning Algorithms for Improved Network Traffic Signal Policy Optimization (2020-2023), Florida Department of Transportation, $320,000.
70. Principal Investigator, Video Analysis for Traffic Intersections in Seminole County, (2021-2023), FDOT D5, $70,000.
71. Principal Investigator, Interstate 4 Florida's Regional Advanced Mobility Elements, (2021-2023), $185,000.
72. Principal Investigator, Using Trajectory Data and Ground Sensor Data for Traffic Signal Policy Optimization, Florida Department of Transportation (2022-2024), approx. $400,000.
73. Principal Investigator, Research on Artificial-Intelligence for Data Integration with State Highways, Florida Department of Transportation (2022-2024), approx. $300,000.

PUBLICATIONS AND PRESENTATIONS

Books and Monographs

1. T. Mishra, X. Huang, K. Chen, A. Wu, A. Rangarajan, S. Ranka, Video Based Machine Learning for Traffic Intersections, CRC Press, Aug. 2023.
2. C. Yang, C. Delcher, E. Shenkman, and S. Ranka. Data Driven Approaches for Health Care High Utilizers, CRC Press, Oct. 2019.
3. A. Munir, A. Gordon-Ross, and S. Ranka. Modeling and Optimization of Parallel and Distributed Embedded Systems, Wiley – IEEE, 2016.
4. W. Wang, P. Mishra, and S. Ranka. Dynamic Reconfiguration in Real-Time Systems: Energy, Performance, and Thermal Perspectives, Springer Verlag, June 2012.
5. K. G. Mehrotra, S. Ranka, and C. K. Mohan. Elements of Artificial Neural Networks, MIT Press, Oct. 1996.
6. S. Ranka and S. Sahni. Hypercube Algorithms with Applications to Image Processing and Pattern Recognition, Springer Verlag, June 1990.

Handbooks

1. I. Ahmad and S. Ranka. Handbook of Exascale Computing. CRC Press, 2014.
2. I. Ahmad and S. Ranka. Handbook of Energy Aware and Green Computing. CRC Press, Volume 1 and Volume 2, 1,284 pages, Jan. 2012.

Conference Proceedings

1. X. Zhu, S. Ranka, M. T. Thai, T. Washio, X. Wu, IEEE International Conference on Data Mining, ICDM 2022, Orlando, FL, USA, November 28 - Dec. 1, 2022. IEEE 2022, ISBN 978-1-6654-5099-7
2. S. Ranka, T. Kahveci, and M. Singh (eds.). ACM International Conference on Bioinformatics, Computational Biology and Biomedicine, BCB' 12, Orlando, FL, USA, Oct. 8-10, 2012.
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202. S. Ranka and S. Sahni. Clustering on a Hypercube Multicomputer. Proceedings of 10th International Conference on Pattern Recognition, June 16-21, 1990, Vol. 2, pp. 532-536.
203. S. Ranka, J. Wang, and N. Yeh. Embedding Meshes on the Star Graph. Proceedings of the Supercomputing Conference (*SUPERCOMPUTING '90*), Nov. 12-16, 1990, pp. 476-485.
204. J. Koh, G. S. Moon, K. G. Mehrotra, C. K. Mohan, and S. Ranka. Korean Character Recognition Using Neural Networks. Proceedings of 3rd Symposium on the Frontiers of Massively Parallel Computation, Oct. 8-10, 1990, pp. 162-165.

205. Y. C. Chung and S. Ranka. Mapping Finite Element Graphs on Hypercubes. Proceedings of 3rd Symposium on the Frontiers of Massively Parallel Computation, Oct. 8-10, 1990, pp. 135-144.
206. A. Choudhary, S. Hariri, W. Song, P. Banerjee, and S. Ranka. Optical Switching and Routing Architectures for Fiber-Optic Computer Communication Networks. Proceedings of 15th Conference on Local Computer Networks (LCN), 1990, pp. 65-74.
207. S. Ranka and S. Sahni. Hypercube Algorithms for Image Transformations. Proceedings of International Conference on Parallel Processing, 1989, Vol. 3, pp. 24-31.
208. S. Ranka and S. Sahni. Efficient Serial and Parallel Algorithms for Median Filtering. Proceedings of International Conference on Parallel Processing, 1989, Vol. 3, pp. 56-62.
209. S. Ranka and S. Sahni. Image Template Matching on SIMD Hypercube Multicomputers. Proceedings of International Conference on Parallel Processing, 1988, Vol. 3, Algorithms & Applications, pp. 84-91.
210. S. Ranka and S. Sahni. Convolution on an SIMD Mesh-Connected Computer. Proceedings of International Conference on Parallel Processing, Vol. 3, 1988, Algorithms & Applications, pp. 212-217.
211. S. Ranka and S. Sahni. Image Template Matching on MIMD Hypercube Multicomputers. Proceedings of International Conference on Parallel Processing, 1988, Vol. 3, Algorithms & Applications, pp. 92-96.

Workshops/Non-refereed Conferences

1. T. A. Davis, S. Ranka, S. Yeralan, High-Performance GPU Kernels for Multifrontal Sparse Factorization, SIAM Parallel Processing (PP14), 2014, Portland, Oregon.
2. T. A. Davis, S. Ranka, S. Yeralan, H. Zandi, and S. Chetlur. Multifrontal Sparse QR Factorization on a GPU. SIAM Annual Meeting, July 2013, San Diego, California.
3. Jaeyeon Kang and Sanjay Ranka. Assignment Algorithm for Energy Minimization on Parallel Machines. Proceedings of the 3rd International Workshop on Advanced Distributed and Parallel Network Applications, 2009, pp. 484-491.
4. K. Alsabti, S. Ranka, and V. Singh. An Efficient K-Means Clustering Algorithm. 1998 IPPS/SPDP Workshop on High Performance Data Mining.
5. N. Nagaratnam, K. Mehrotra, C. K. Mohan, and S. Ranka. Configuration Acceptance Criteria in Simulated Annealing Algorithms. Proceedings of the IASTED Conference, July 1994, pp. 170-173.
6. E. A. Bogucz, G. C. Fox, T. Haupt, K. A. Hawick, and S. Ranka. Preliminary Evaluation of High-Performance Fortran as a Language for Computational Fluid Dynamics. 25th AIAA Fluid Dynamics Conference, June 1994, AIAA 94-2262.
7. C. T. Chiu, K. Mehrotra, C. K. Mohan, and S. Ranka. Modifying Training Algorithms for Improved Fault Tolerance. Proceedings of International Conference on Neural Networks, Vol. I, June 1994, pp. 333-338. Invited paper.
8. G. C. Fox, S. Ranka, M. Scott, A. D. Malony, J. Browne, M. C. Chen, A. C. Choudhary, T. Cheatham, J. Cuny, R. Eigenmann, A. Fahmy, I. Foster, D. Gannon, T. Haupt, M. Karr, C. Kesselman, C. Koelbel, W. Li, M. Lam, T. LeBlanc, J. Openshaw, D. Padua, C. Polychronopoulos, J. Saltz, A. Sussman, G. Weigand, and K. Yelick. Runtime Support for High-Performance Parallel Languages. Proceedings of Supercomputing '93, pp. 752-757.

9. Z. Bozkus, A. N. Choudhary, G. C. Fox, T. Haupt, S. Ranka, R. Thakur, and J-C. Wang. Scalable Libraries for High-Performance Fortran. Scalable Libraries Conference, Oct. 1993. Invited Paper.
10. R. Bhargava, G. Fox, C-W. Ou, S. Ranka, and V. Singh. Scalable Libraries for Graph Partitioning, Scalable Libraries Conference, Oct. 1993.
11. D. Koester S. Ranka, and G. C. Fox. Scalable Solutions for Sparse Matrix Solvers, Scalable Libraries Conference, Oct. 1993.
12. Z. Bozkus, A. Choudhary, G. Fox, T. Haupt, and S. Ranka. A Compilation Approach for Fortran 90D/HPF Compilers on Distributed Memory MIMD Computers, 6th Workshop on Languages and Compilers for Parallelism, Aug. 1993.
13. D. Krishnaswamy, K. G. Mehrotra, C. K. Mohan and S. Ranka. Storing Temporal Sequences of Patterns in Neural Networks. Proceedings of Conference on Neural and Stochastic Methods in Image and Signal Processing II (SPIE'93), San Diego, July 1993, pp. 120-126.
14. H. J. Lee, K. G. Mehrotra, C. K. Mohan, and S. Ranka. Performance Modeling of Communication Primitives Using Neural Networks. 3rd KSEA WNY Regional Conference, Mar. 1993, Vol. 1, pp. 300-303.
15. J. C. Wang and S. Ranka. Static and Runtime Scheduling of Unstructured Communication (for presentation only). 2nd Symposium on Parallel Computational Methods for Large Scale Structural Analysis and Design, Mar. 1993.
16. A. Choudhary, G. C. Fox, S. Hiranandani, K. Kennedy, C. Koelbel, S. Ranka, and J. Saltz. A Classification of Irregular Loosely Synchronous Problems and Their Support in Scalable Parallel Software Systems. 1992 DARPA Software Technology Conference, Vol. 7, pp. 138-149.
17. A. N. Choudhary, T. Haupt, G. C. Fox, and S. Ranka. What Problems Use High-Performance Fortran and Fortran D-Industry Standard Data Parallel Languages. Proceedings of 5th Australian Supercomputing Conference, Dec. 1992, pp. 117-124.
18. K. Mills, G. Cheng, M. Vinson, S. Ranka, and G. C. Fox. Software Issues and Performance of a Parallel Model for Stock Option Pricing. Proceedings of 5th Australian Supercomputing Conference, Dec. 1992, pp. 125-132.
19. Y. C. Chung and S. Ranka. An Optimization Approach for Static Scheduling of Directed Acyclic Graphs on Distributed Memory Multiprocessors (poster presentation). 1992 International Conference on Parallel Processing, 1992.
20. D. Koester and S. Ranka. Image Processing Applications on General Purpose Architectures, Conference on Command Control. Communications and Intelligent Technology and Applications, June 1991, pp. 25-29.
21. R. V. Shankar and S. Ranka. Massive Parallelism for Sparse Images, Session on Massive Parallelism. Proceedings of International Conference on Systems, Man, and Cybernetics, Vol. 1, 1991, pp. 683-688. Invited paper.
22. R. Shankar and S. Ranka. Parallel Processing of Sparse Images, Workshop on Parallel Processing for Machine Intelligence, IJCAI 91.
23. M. Li, K. G. Mehrotra, C. K. Mohan, and S. Ranka. Sunspot Number Prediction Using Neural Networks. Proceedings of the 5th IEEE International Symposium on Intelligent Control, Vol. 1, Sept. 1990, pp. 524-529.
24. N. Asokan, R. V. Shankar, C. K. Mohan, K. G. Mehrotra, and S. Ranka. A Neural Network Simulator for the Connection Machine. Proceedings of the 5th IEEE International Symposium on Intelligent Control, Vol. 1, Sept. 1990, pp. 518-523.
25. A. Choudhary, S. Hariri, S. Ranka, and W. Song. OPTIMP: Optical Interface Message Processor, Optical Society Meeting, 1990.

26. S. Ranka, N. Yeh, and J. C. Wang. Embedding Meshes on the Star Graph. Ohio State Parallel Computing Workshop, 1990.
27. A. Choudhary and S. Ranka. Software Development Tools for Implementing Vision Systems on Multiprocessors. Image Understanding in the 90s: Building Systems That Work, Oct. 1990, SPIE Vol 1406-18, pp. 148-161.
28. S. Ranka and S. Sahni. Computing Hough Transform on Hypercube Multicomputers, IJCAI Workshop on Parallel Algorithms for Machine Intelligence, 1989.
29. S. Ranka and S. Sahni. Multicomputer Algorithms for Image Template Matching. AAAI Workshop on Parallel Algorithms for Pattern Analysis and Machine Intelligence, 1988.

Group Reports

1. The MPI Message Passing Standard, MPI Forum.
2. G. Fox, S. Ranka, M. Scott, A. Malony, J. Browne, M. Chen, A. Choudhary, T. Cheatham, J. Cuny, R. Eigenmann, A. Fahmy, I. Foster, D. Gannon, T. Haupt, M. Karr, C. Kesselman, C. Koelbel, W. Li, M. Lam, T. LeBlanc, J. Openshaw, D. Padua, C. Polychronopoulos, J. Saltz, A. Sussman, G. Weigand, and K. Yelick. Runtime Support for High-Performance Parallel Languages. Parallel Compiler Runtime Consortium, July 1993.
3. T. Sterling, P. Messina, M. Chen, F. Darema, G. Fox, M. Heath, K. Kennedy, R. Knighten, R. Moore, S. Ranka, J. Saltz, L. Tucker, and P. Woodard. System Software and Tools for High-Performance Computing Environments, a Report on the Findings of the JPL Pasadena Workshop, Apr., 1992.
4. A. Choudhary, G. Fox, T. Haupt, and S. Ranka. Coauthors of an interim chapter in High-Performance Fortran Document, High-Performance Fortran Forum. (Ken Kennedy chair.)

SERVICE TO THE UNIVERSITY OF FLORIDA

2005-2008	Member, CTSA Biomedical Informatics Committee
2004-2012	Chair, Department Space Assignment Committee
2003-2011	Member, Department Steering Committee
2010-2011	Member, Admissions Committee
2014-2018	Member, College Tenure and Promotion Committee
2015-2019	Member, Admissions Committee
2013-2020	Member, University Research Computing Advisory Committee

SERVICE TO THE PROFESSION

1989	Session chair, 1989 International Conference on Parallel Processing
1991	Publicity Chair, Symposium of Parallel and Distributed Systems, Dallas on Parallel Processing for Computer Vision and Image Understanding
1992	Session Chair, Scalable High-Performance Computing Conference, Apr. 1992
1992	Deputy Chair, Applications Group, NASA HPCC meeting, Apr. 1992
1993	Member, Program Committee, Symposium on High-Performance Distributed Computing -2
1993-1994	Member, Message Passing Interface (MPI) Standard
1993-1996	Member, Parallel Compiler Runtime Consortium

1993	Workshop Organizer, ARPA Runtime Support Group, Syracuse University, May 1993
1993	Workshop Organizer, Runtime Support for Parallel Compilers, Supercomputing 93
1994	Member, Program Committee, International Conference on Pattern Recognition
1994	Member, Program Committee, Scalable High-Performance Computing Conference
1995	Program Committee, Frontiers of Massively Parallel Computation
1995	Session Chair, Frontiers of Massively Parallel Computation
1995	Tutorials Chair, Frontiers of Massively Parallel Computation
1995	Workshop Organizer, International Parallel Processing Symposium, Solving Irregular Problems on Distributed Memory Machines
1995	Session Chair, International Parallel Processing Symposium
1995	Program Committee, Irregular 1995
1995	Program Committee, International Conference on Parallel Processing
1995	Program Committee, International Conference on High Performance Computing
1996	Program Committee, International Conference on High Performance Computing
1995	Member, Review Panel, NASA
1996	Workshop Organizer, International Parallel Processing Symposium, Solving Irregular Problems on Distributed Memory Machines
1996	Program Committee, Frontiers of Massively Parallel Computation
1996	Member, Tutorials Committee, Supercomputing 96
1997	Program Committee, International Parallel Processing Symposium
1997	Participant, Petaflops Algorithms Workshop
1997	Program Committee, International Conference on High Performance Computing
1998	Member, Review Panel, NSF
1998	Program Committee, ISPAN'98
1998	Program Committee, International Parallel Processing Symposium
1998	Program Committee, International Conference on Parallel Processing
1998	Program Committee, MPPOI 1998 Program Committee, PDCN
1998	Co-Program Chair, Workshop on High Performance Data Mining (in conjunction with IPPS)
1988	Program Committee, KDD Workshop on Distributed Data Mining
1998	Program Committee, International Conference on High Performance Computing
1999	Program Committee, Irregular 1999
1999	Program Committee, Supercomputing 1999
1999	Program Committee, Frontiers of Massively Parallel Computation
1999	Program Committee, ISPAN' 99 1999 Co-Program Chair, Workshop on High Performance Data Mining (in conjunction with IPPS)
2000	Co-Editor, JPDC Special Issue on High Performance Data Mining
2000-2011	Member, IFIP Committee on System Modeling and Optimization
2000-2003	Advisory Committee, IEEE Technical Committee on Parallel Processing
2003	Program Committee, IASTEAD Conference on Computer Science and Technology

2004 Program Committee, High Performance Distributed Computing
2004 Program Committee, International Conference on Parallel Processing
2004 Program Co-Chair, IASTED International Conference on Knowledge Sharing and Collaborative Engineering
2004 Program Committee, IASTED International Conference on Databases and Applications
2004 Sponsorship Chair, SIAM Conference on Data Mining
2004 Program Committee, High Performance Distributed Computing
2004 Program Committee, International Conference on Parallel Processing
2004 Program Committee, International Conference on Parallel Processing
2005 Vice Program Chair, SIAM Conference on Data Mining, 2005
2005 Program Co-Chair, IASTED Conference on Knowledge Sharing and Collaborative Engineering, 2005
2006 Program Committee, International Conference on Parallel Processing
2006 Program Committee, DBA conference
2006 Program Committee, ACMSE conference
2006 Program Committee, SIAM Conference on Data Mining
2007 Program Committee, Pacific-Asia Conference on Knowledge Discovery and Data Mining
2007 Program Co-chair, International Conference on Information Systems, Technology and Management.
2007 Program Committee, IPDPS
2008 Program Committee, SEKE'2008
2008 Program Committee, DADC'2008
2008 Program Chair, International Conference on Contemporary Computing
2008 Program Committee, Grid and Pervasive Computing
2008 Program Committee, IPDPS'2008
2009 Co-General Chair, International Conference on Data Mining
2009 Program Chair, International Conference on Contemporary Computing
2009 Program Committee, International Conference on Parallel Processing
2009 Program Committee, Knowledge Discovery and Data Mining
2009 Program Committee, International Conference on Information Systems, Technology and Management.
2009 Program Committee, SEKE'2009
2009 Program Committee, DADC'2009
2009 Co-General Chair, International Conference on Data Mining
2010 Program Chair, International Conference on Contemporary Computing
2010 Co-General Chair, International Conference on Green Computing
2010 Member, Program Committee, COMAD
2010 Track Chair, ACM CIKM
2010 Program Committee, DIDC Workshop 2010
2010 Program Committee, PAKDD
2011 Senior Member, Program Committee, ACM CIKM
2011 Member, Program Committee, AICCSA 2011
2011 Invited Session Co-Chair, IEA/AEI 2011
2011 Co-Finance Chair, ACM Bioinformatics and Computational Biology
2011 Co-General Chair, International Conference on Green Computing
2011 Vice Program Chair, HiPC Conference
2011 Member, Program Committee, International Conference on Data Mining

2011	Member, Program Committee, ACM Knowledge Discovery and Data Mining
1993-2010	Subject Area Editor, Journal of Parallel and Distributed Computing (Algorithms and Scientific Computing).
2011-present	Associate Editor-in-Chief for Algorithms, Journal of Parallel and Distributed Computing.
2010-2014	Associate Editor, IEEE Transactions on Parallel and Distributed Computing.
2010-present	Associate Editor, Sustainable Computing: Systems and Informatics.
2010-present	Associate Editor, Knowledge and Information Systems.
2010-present	Associate Editor, International Journal of Computing.
2011-2015	Associate Editor, IEEE Transactions on Computers.
2012	General Chair, ACM Bioinformatics and Computational Biology.
2012	Workshop Chair, International Conference on Green Computing.
2013	Program Chair, International Parallel and Distributed Processing Symposium.
2013-present	IEEE/ACM Transactions on Computational Biology and Bioinformatics.
2015	Program Chair, HiPC - High Performance Computing.
2017	Co-General Chair, DataCom.
2017	Track Chair, International Conference on Data Mining.
2017	Track Chair, SBAC PAD.
2017	Co-Program Chair, International Conference on Machine Learning and Data Science.
2018	Co-Program Chair, International Conference on Machine Learning and Data Science.
2016-Present	Steering Committee, IEEE Datacom: Big Data Intelligence and Computing
2019-Present	Member, Editorial Board, Applied Sciences (Computer Science and Artificial Intelligence).
2022	Co-Program Chair, International Conference on Data Mining.
2024	Co-Program Chair, International Conference on Machine Learning and Data Science

DOCTORAL STUDENTS

Unless listed as a co-advisee, I was/am the principal advisor.

Graduated

1. Todd Heywood, (1991), A Practical Hierarchical Model of Parallel Computation. Technical Staff, IBM Poughkeepsie.
2. Anand Rangachari, (1992), Efficient Neural Algorithms for Multiclass Problems. Technical Staff, IBM T. J. Watson Labs. (Co-advisor with Kishan G. Mehrotra).
3. Yeh Chin Chung, (1992), Static Mapping and Scheduling Algorithms for Distributed Memory Multiprocessors. Associate Professor, Department of Computer Science, National Taiwan University, Taiwan R. O. C.
4. Jhy Chun Wang, (1993), Load Balancing and Communication Support for Irregular Problems. Technical Staff, IBM Poughkeepsie.

5. Harpal Maini, (1994), Incorporating Knowledge in Genetic Optimization. Technical Staff, Deutesche Morgan Bank. (Co-advisor with Kishan G. Mehrotra).
6. M. C. Yang, (1994), 3-D Object Recognition and Description Using Parallel Geometric Hashing Algorithms.
7. David Koester, (1995), Parallel Block-Diagonal-Bordered Sparse Linear Systems for Power Systems Applications.
8. Chao-Wei Ou, (1996), Partitioning and Incremental Partitioning for Adaptive Irregular Problems. Technical Staff, Northeast Parallel Architecture Center.
9. Ravi Shankar, (1996), Scalable Parallel Algorithms for Random Accesses and Shared Memory Simulation. Technical Staff, Bellcore.
10. Maher Kaddoura, (1996), Parallel Computing in Non-uniform and Adaptive Computational Environments. Technical Staff, Architecture Technology Corporation.
11. Seungjo Bae, (1997), Runtime Support for High Performance Fortran. Technical Staff, ETRI (Korea).
12. Jang Sun Lee, (1997), User Controllable Parallel I/O. Technical Staff, ETRI (Korea).
13. Khaled Alsabti, (1998), Efficient Algorithms for Data Mining Primitives, Assistant Professor, King Fahd University, Saudi Arabia.
14. Ibraheem Al-furaih, (1998), Optimizing for Memory Hierarchy. Saudi Arabia.
15. Hankil Yoon, (2000), Efficient Processing of Large Sparse Datasets. Oracle Corporation.
16. Scott Winterstein, (2000), Efficient Association Mining for Data Warehousing and E-Commerce.
17. Srijit Kamath, (2005), Efficient Algorithms for Sequencing Multileaf Collimators. (Postdoc at Stanford University College of Medicine; co-advisor with Sartaj Sahni).
18. Jang Uk In, (2006), Policy-Based Scheduling for Grid Environments. Microsoft Corporation.
19. Jun Liu, (Feb. 2008), Mining Comparative Genomic Hybridization Data. Google Corporation.
20. Xiuyao Song, (2008), Novel Change Detection Techniques in Multidimensional Data Mining. Google Corporation.
21. Laukik Chitnis, (2008). Fault Tolerance and Scalability of Data Aggregation in Sensor Networks. Google Corporation.
22. Jaeyeon Kang, (2008), Energy Minimization Algorithms for Multicore Machines. Samsung Research.
23. Parbati Manna, (2008), Detection, Propagation Modeling, and Designing of Advanced Internet Worms. Intel Corporation.
24. Manas Somaiya, (2010), Novel Mixture Models to Learn Complex and Evolving Patterns in High Dimensional Data. EBay Corporation.
25. Eunsung Jung, (2010), Network Resource Provisioning in Research Networks, Faculty, Hongik University, Korea.
26. Yan Li, (2010), Data Structures and Algorithms for Resource Scheduling in High Speed Networks. (Co-advisee with Sartaj Sahni). Google Corporation.
27. Bin Song, (2010), New in Silico Approaches for Metabolic Engineering (co-advisee with Tamer Kahveci). Google Corporation.
28. Nirmalya Bandyopadhyay, (2011), Modeling Perturbations in Gene Regulatory and Signaling Networks. Broad Institute.
29. Arslan Munir, (2012), Modeling and Optimization of Parallel and Distributed Embedded Systems (co-advisee with Ann Gordon Ross), University of Nevada, Reno.

30. Abdullah Almutairi, (2012), Efficient Algorithms for Learning Correlations in Large-Scale Wireless Data, Kuwait University.
31. Zhe Wang, (2012), Software and Algorithms for Energy and Temperature Minimization, Facebook.
32. Saeed Moghhaddam, (2012), Large-Scale Mining of Mobile Online Behavior: Interest-Aware Modeling and Design, Samsung Corporation (co-advisee with Ahmed Helmy), Samsung Research.
33. William Chapman, (2013), Multiresolution SAR Image Formation and Change Detection on High-Performance Heterogeneous Architectures.
34. Junjie Li, (2013), GPU Computing for Bioinformatics (co-advisee with Sartaj Sahni), Snapchat Corporation.
35. Yifan Wang, (2015), Energy Efficient and Thermal-Aware Task Scheduling on Multi-Core Processors.
36. Hengxing Tan, (2016), Performance, Energy and Thermal Tradeoffs for Data Parallel Problems, Amazon Corporation.
37. Manu Sethi, Postdoctoral Researcher, 2016-2017, Spatiotemporal Machine Learning (co-advisee with Anand Rangarajan).
38. Mohamed Gadou, (2018), Performance Energy Tradeoffs for Iterative and Direct Sparse Matrix Solvers on Hybrid Multicore Architectures, Google Corporation.
39. Chengliang Yang, (2018), Interpretable Machine Learning with Applications in Health Care, Uber Corporation.
40. Yupeng Yan, (2018), Parallelizable Semi-Supervised Dense Labeling Framework for Very High Resolution Satellite Images (co-advisee with Anand Rangarajan), Airbnb corporation.
41. Matin Kheirkhahan, (2018), Real-Time Data Monitoring and Machine Learning Methods for Activity Recognition using Wearable Devices, Google Corporation.
42. Adeesha Pathirannahalage Wijayasiri, (2018), Dynamic Data Driven SAR Reconstruction on Hybrid Multicore Systems (co-advisee with Sartaj Sahni), Faculty in Computer Science, University of Moratuwa, Sri Lanka.
43. Meng Tang, (2020), GPU Algorithms and Software for Sparse Matrix Factorization, Qualcomm Corporation.
44. Keke Zhai, (2020), Load Balancing Sparse Dataset Based Applications on Hybrid Multicore Architectures, Facebook Corporation.
45. Xiaohui Huang, (2020), Video-based Machine Learning for Intelligent Transportation Systems, Facebook Corporation.
46. Dhruv Mahajan, (2021), Scalable Data Analytics for High Resolution Signalized Intersection Datasets, Proctor and Gamble.
47. Patrick Emami (2021), Neural algorithms for Object Centric scene understanding December 2021, National Renewable Energy Lab.
48. Sanaz Gheibi (2022), Speeding up Algorithms for Large Datasets, Intel Corporation.
49. Yashasawi Karnati (2022), Machine Learning Algorithms for applications in Intelligent Transportation Systems, Nvidia Corporation.
50. Pan He (2023), Deep Learning on Spatiotemporal Point Cloud Modeling for Motion and Correspondence

Active

51. Rahul Sengupta, 2018-Present.

52. Aotian Wu, 2020-Present.
53. Xiao Li, 2022-Present
54. Ke Chen, 2020-Present.
55. Tania Banerjee, Postdoctoral Researcher, 2014-present.

TEACHING

Fall 1988	Syracuse University	CIS710 Research Topics in Parallel Computation
Spring 1989	Syracuse University	CIS675 Analysis of Algorithms
Fall 1989	Syracuse University	CIS575 Introduction to Analysis of Algorithms
Fall 1989	Syracuse University	CIS700 Neural Networks
Fall 1989	Syracuse University	CIS710 Research Topics in Parallel Computing
Fall 1990	Syracuse University	CIS700 Neural Networks
Fall 1990	Syracuse University	CIS710 Research Topics in Parallel Computing
Spring 1991	Syracuse University	CIS665 Computer Vision
Fall 1991	Syracuse University	CIS700 Neural Networks
Fall 1991	Syracuse University	CIS710 Research Topics in Parallel Computing
Spring 1992	Syracuse University	CIS675 Analysis of Algorithms
Fall 1992	Syracuse University	CIS710 Research Topics in Parallel Computing:
Spring 1993	Syracuse University	CIS600 Compiler Construction
Fall 1993	Syracuse University	CIS657 Operating Systems
Fall 1994	Syracuse University	CIS657 Operating Systems
Fall 1994	Syracuse University	CIS710 Research Topics in Parallel Computing
Fall 1995	University of Florida	COT3100 Discrete Mathematics
Spring 1996	University of Florida	COT 5405 Analysis of Algorithms
Fall 1996	University of Florida	COT6930 Introduction to Parallel Computing
Fall 1997	University of Florida	CIS3020 Introduction to CIS (using JAVA)
Fall 1998	University of Florida	COT5405 Analysis of Algorithms
Fall 2002	University of Florida	COT5405 Analysis of Algorithms
Spring 2003	University of Florida	COT5405 Analysis of Algorithms
Fall 2003	University of Florida	CIS6930 Introduction to Data Mining
Spring 2004	University of Florida	COT5405 Analysis of Algorithms
Fall 2005	University of Florida	COT5405 Analysis of Algorithms
Spring 2005	University of Florida	CIS6930 Introduction to Data Mining
Fall 2006	University of Florida	COT5405 Analysis of Algorithms
Spring 2006	University of Florida	CIS6930 Introduction to Data Mining
Fall 2007	University of Florida	CIS6930 Introduction to Data Mining
Spring 2008	University of Florida	CIS6930 Introduction to Parallel Computing
Fall 2008	University of Florida	COT5405 Analysis of Algorithms
Spring 2009	University of Florida	CIS6930 Introduction to Data Mining
Fall 2009	University of Florida	CIS6930 Introduction to Parallel Computing
Spring 2010	University of Florida	COT5405 Analysis of Algorithms
Fall 2010	University of Florida	CIS6930 Introduction to Parallel Computing
Spring 2011	University of Florida	CIS6930 Introduction to Parallel Computing
Fall 2011	University of Florida	COT5405 Analysis of Algorithms
Spring 2012	University of Florida	CIS6930 Introduction to Parallel Computing
Fall 2013	University of Florida	COT5405 Analysis of Algorithms
Spring 2013	University of Florida	CIS6930 Elements of Data Science

Fall 2014	University of Florida	CIS6930 Projects in Data Science
Spring 2015	University of Florida	COT5405 Analysis of Algorithms
Fall 2015	University of Florida	CIS6930 Introduction to Data Mining
Spring 2016	University of Florida	COT5405 Analysis of Algorithms
Fall 2017	University of Florida	CIS6930 Introduction to Data Mining
Fall 2019	University of Florida	CIS6930 Projects in Data Science

Appendix B

LIST OF EXHIBITS REVIEWED

Ex. 1001:	U.S. Patent No. 8,775,249 ("the '249 patent")
Ex. 1002:	Expert Declaration of Dr. Sanjay Ranka
Ex. 1003:	Certified Prosecution History for U.S. Patent No. 7,428,493 ("the '493 patent")
Ex. 1004:	Certified Prosecution History for U.S. Patent No. 7,979,307 ("the '307 patent")
Ex. 1005:	Certified Prosecution History for U.S. Patent No. 8,244,582 ("the '582 patent")
Ex. 1006:	Certified Prosecution History of U.S. Patent No. 8,494,904 ("the '904 patent")
Ex. 1007:	Certified Prosecution History of U.S. Patent No. 8,775,249 ("the '249 patent")
Ex. 1008:	Papers from the prosecution histories of related EP 00 981 582.0 and EP 08103068.6 available at https://register.epo.org/regviewer
Ex. 1009:	--
Ex. 1010:	Excerpts from *AlmondNet, Inc. et al v. Oath Holdings Inc.*, 1-19-cv-00247 (D. Del.) ("*Oath Holdings* case")
Ex. 1011:	Excerpts from *AlmondNet, Inc., v. Samsung Electronics Co., Ltd.*, et al., 4-22-cv-07515 (N.D. Cal.) ("7515 N.D. Cal. case"), *AlmondNet, Inc. et al v. Microsoft Corporation*, 6-21-cv-00897 (W.D. Tex.) ("897 W.D. Tex. case"), and *AlmondNet, Inc. et al v. Amazon.com, Inc. et al.*, 6-21-cv-00898 (W.D. Tex.) ("898 W.D. Tex. case")
Ex. 1012:	Excerpts from *Roku, Inc. v. AlmondNet, Inc. et al.*, 1-21-cv-01035 (D. Del.) ("1035 D. Del. case")
Ex. 1013:	Excerpts from *Yahoo! Inc. v. AlmondNet, Inc.*, CBM2017-00049, challenging claims of the '307 patent

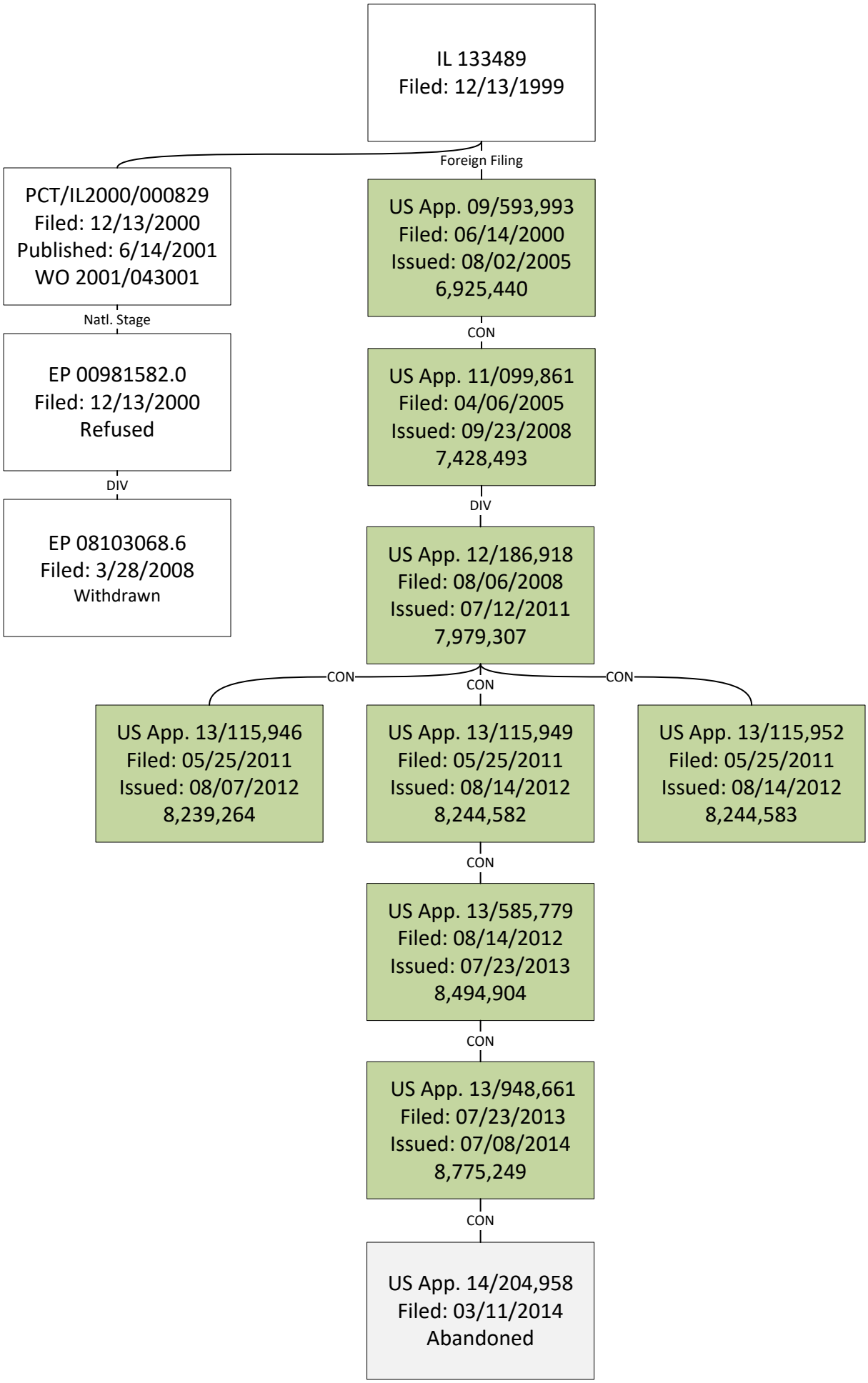
Ex. 1014:	Excerpts from *Yahoo! Inc. v. AlmondNet, Inc.*, CBM2017-00050, challenging claims of the ’249 patent
Ex. 1015:	Excerpts from *Yahoo! Inc. v. AlmondNet, Inc.*, CBM2017-00051, challenging claims of the ’904 patent
Ex. 1016:	Excerpts from *Yahoo! Inc. v. AlmondNet, Inc.*, CBM2017-00052, challenging claims of the ’582 patent
Ex. 1017:	Excerpts from *Samsung Electronics Co., Ltd. v. AlmondNet, Inc.*, IPR2022-01260, challenging claims of the ’582 patent
Ex. 1018:	Excerpts from *Amazon.com, Inc. v. AlmondNet, Inc.*, IPR2022-01455, challenging claims of the ’582 patent
Ex. 1019:	Excerpts from *Meta Platforms, Inc. v. AlmondNet, Inc.*, IPR2022-01436, challenging claims of the ’582 patent
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Appendix C

Family Tree


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Filed: 03/11/2014
Abandoned

Appendix D

CLAIM LISTING APPENDIX

U.S. Pat. No. 8,775,249

Designation	Claim Language
Claim 1	
[1PRE]	1. An automated method of collecting profiles of Internet-using entities, the method comprising:
[1A]	(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, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;
[1B]	(b) automatically with the computer system electronically storing the received partial profile by adding the received partial profile to an electronically stored profile, which stored profile is believed to be related to the same entity;
[1C]	(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and
[1D]	(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;
[1E]	(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network.

Designation	Claim Language
Claim 2	
2	2. The method of claim 1 further comprising, in accordance with a predetermined arrangement, automatically using the electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes to create electronic data used to identify a payment amount due to the unaffiliated third party as a result of using at least one of the profile attributes in the partial profile contributed by that third party in targeting the third-party advertisements to the entity's computer over the global computer network.
Claim 3	
3	3. The method of claim 1 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.
Claim 4	
4	4. The method of claim 3 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.
Claim 5	
5	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 stored profile, the profile attributes used in targeting the advertisements.
Claim 6	
6	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 the stored profile.
Claim 7	
7	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 stored profile.
Claim 8	

Designation	Claim Language
8	8. The method of claim 7 wherein the credibility rating is reflected in a price for the at least one profile attribute.
Claim 9	
9	9. The method of claim 1 further comprising automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.
Claim 10	
10	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.
Claim 11	
[11PRE]	11. A computer system coupled to a global computer network and programmed to perform an automated method of collecting profiles of Internet-using entities, the computer system having access to a storage device, the method performed by the programmed computer system comprising:
[11A]	(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;
[11B]	(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;
[11C]	(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and
[11D]	(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;

Designation	Claim Language
[11E]	(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network.
Claim 12	
12	12. The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises, in accordance with a predetermined arrangement, automatically using the electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes to create electronic data used to identify a payment amount due to the unaffiliated third party as a result of using at least one of the profile attributes in the partial profile contributed by that third party in targeting the third-party advertisements to the entity's computer over the global computer network.
Claim 13	
13	13. The computer system of claim 11 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.
Claim 14	
14	14. The computer system of claim 13 wherein the computer system determines that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.
Claim 15	
15	15. The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.
Claim 16	

Designation	Claim Language
16	16. The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises 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 the stored profile.
Claim 17	
17	17. The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises maintaining with the computer system a credibility rating associated with at least one of the profile attributes of the stored profile.
Claim 18	
18	18. The computer system of claim 17 wherein the credibility rating is reflected in a price for the at least one profile attribute.
Claim 19	
19	19. The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system selecting profile attributes from the stored profile based on the source thereof.
Claim 20	
20	20. The computer system of claim 11 wherein the automatic method performed by the programmed computer system further comprises automatically with the computer system electronically reading a cookie previously stored on the entity's computer, as a result of the URL redirection.
Claim 21	
[21PRE]	21. A tangible, non-transitory data storage medium comprising indicia of instructions for a computer system to perform an automated method of collecting profiles of Internet-using entities, wherein the computer system is coupled to a global computer network and has access to a storage device, the method performed according to the instructions comprising:

Designation	Claim Language
[21A]	(a) electronically receiving at the computer system, from at least one server controlled by one of a plurality of unaffiliated third parties, a partial profile of an entity that uses a user computer coupled to the global computer network and accessing a website, which partial profile is available to one of the third parties and contains at least one profile attribute related to the entity;
[21B]	(b) automatically with the computer system electronically storing in the storage device the received partial profile by adding the received partial profile to a profile electronically stored in the storage device, which stored profile is believed to be related to the same entity;
[21C]	(c) wherein receiving the partial profile is achieved as a result of automatic electronic URL redirection from a portion of a page of the website accessed by the user computer; and
[21D]	(d) automatically with the computer system generating an electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes;
[21E]	(e) wherein the stored profile, including the added partial profile, comprises data used in targeting third-party advertisements to the user computer over the global computer network.
Claim 22	
22	22. The data storage medium of claim 21 wherein the automatic method performed according to the instructions further comprises, in accordance with a predetermined arrangement, automatically using the electronic record of which of the plurality of unaffiliated third parties contributed to the stored profile particular profile attributes to create electronic data used to identify a payment amount due to the unaffiliated third party as a result of using at least one of the profile attributes in the partial profile contributed by that third party in targeting the third-party advertisements to the entity's computer over the global computer network.
Claim 23	

Designation	Claim Language
23	23. The data storage medium of claim 21 wherein part (b) comprises the computer system adding the received partial profile to a stored profile believed related to the same entity on account of the received partial profile and the stored profile being related to the same user computer.
Claim 24	
24	24. The data storage medium of claim 23 wherein instructions cause the computer system to determine that the received partial profile and the stored profile are related to the same user computer by automatically reading a cookie on the user computer.
Claim 25	
25	25. The data storage medium of claim 21 wherein the automatic method performed according to the instructions further comprises automatically with the computer system electronically maintaining an electronic record of which unaffiliated third party contributed, to the stored profile, the profile attributes used in targeting the advertisements.