

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent of: Roy Shkedi Attorney Docket No.: 00035-0033IP1  
U.S. Patent No.: 8,959,146  
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Title: MEDIA PROPERTIES SELECTION METHOD AND SYSTEM BASED ON EXPECTED PROFIT FROM PROFILE-BASED AD DELIVERY

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**PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES**

**PATENT NO. 8,959,146 PURSUANT TO 35 U.S.C. §§ 311–319,**

**37 C.F.R. § 42**

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**EXHIBITS**

|                 |                                                                                                     |
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| VLI-1001        | U.S. Patent No. 8,959,146 to Shkedi (“the ’146 Patent”)                                             |
| VLI-1002        | Excerpts from the Prosecution History of the ’146 Patent (“the Prosecution History”)                |
| VLI-1003        | Declaration and Curriculum Vitae of Dr. Michael Mitzenmacher                                        |
| VLI-1004        | RESERVED                                                                                            |
| VLI-1005        | U.S. Pat. App. Pub. No. 2007/0260514 to Burdick et al. (“Burdick”)                                  |
| VLI-1006        | U.S. Pat. App. Pub. No. 2007/0244750 to Grannan et al. (“Grannan”)                                  |
| VLI-1007 -1008  | RESERVED                                                                                            |
| VLI-1009        | Excerpts from the Prosecution History of U.S. Patent No. 8,671,139 (“the ’139 Prosecution History”) |
| VLI-1010        | First Amended Complaint for Patent Infringement in 23-cv-174-MN                                     |
| VLI-1011        | First Amended Complaint for Patent Infringement in 24-cv-831-MN                                     |
| VLI-1012        | RESERVED                                                                                            |
| VLI-1013        | Interim Process for PTAB Workload Management                                                        |
| VLI-1014 - 1019 | RESERVED                                                                                            |
| VLI-1020        | U.S. Patent No. 8,600,784 to Ivey et al. (“Ivey”)                                                   |
| VLI-1021        | U.S. Pat. App. Pub. No. 2005/0086087 to Razza et al. (“Razza”)                                      |
| VLI-1022        | U.S. Pat. App. Pub. No. 2007/0233530 to Blaszkla et al. (“Blaszkla”)                                |

- VLI-1023 Milgrom, P., 1989. Auctions and bidding: A primer. Journal of economic perspectives, 3(3), pp.3-22 (“Milgrom”)
- VLI-1024 U.S. Pat. App. Pub. No. 2002/0029186 to Roth et al. (“Roth”)
- VLI-1025 U.S. Pat. App. Pub. No. 2005/0165643 to Wilson et al. (“Wilson”)
- VLI-1026 Hormozi, A.M., 2005. Cookies and privacy. Information Security Journal, 13(6). (“Hormozi”)
- VLI-1027 U.S. Pat. App. Pub. No. 2002/0166117 (“Abrams”)
- VLI-1028 Rappa, M.A., 2004. The utility business model and the future of computing services. IBM systems journal, 43(1), pp.32-42. (“Rappa”)
- VLI-1029 Herness, et. al., 2004. WebSphere Application Server: A foundation for on demand computing. IBM Systems Journal, 43(2), pp.213-237. (“Herness”)

## CLAIMS

| Claim | Identifier | Claim Language                                                                                                                                                                                       |
|-------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | [1.1]      | A method of directing electronic advertisements, performed by a computer system comprised of one or more computers, the method comprising:                                                           |
|       | [1.2]      | for each of a multitude of different electronic visitors to a first media property;                                                                                                                  |
|       | [1.3.i]    | (a) automatically with the computer system directing, to a third-party server computer controlling advertising space on a second media property, indicia of a condition,                             |
|       | [1.3.ii]   | which condition relates specifically to an electronic visitor,                                                                                                                                       |
|       | [1.3.iii]  | for display of an advertisement to the electronic visitor when the electronic visitor visits the second media property at a time after the electronic visitor visits the first media property,       |
|       | [1.3.iv]   | subject to determining that the condition has been met;                                                                                                                                              |
|       | [1.4.i]    | (b) wherein directing the indicia is based on information indicating to the computer system that at least one of a plurality of profile attributes is possibly applicable to the electronic visitor, |
|       | [1.4.ii]   | which indicated profile attribute or attributes was received by the computer system as a result of the electronic visitor visiting the first media property; and                                     |

|    |       |                                                                                                                                                                                                                                                           |
|----|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | [1.5] | (c) wherein the advertisement is correlated with the indicated profile attribute or attributes.                                                                                                                                                           |
| 2  | [2]   | The method of claim 1 wherein the condition for display of the advertisement is that a price charged by the second media property is less than a profile-attribute-dependent price that an advertiser is willing to pay for display of the advertisement. |
| 5  | [5]   | The method of claim 1 wherein directing the indicia is performed by the computer system responsive to receiving an electronic redirect of a visitor computer accompanied by profile-attribute information about the electronic visitor.                   |
| 6  | [6]   | The method of claim 1 wherein directing the indicia is performed by the computer system responsive to recognizing an action conducted on the first media property by the electronic visitor.                                                              |
| 7  | [7]   | The method of claim 6 wherein the action is a search request by the electronic visitor on the first media property.                                                                                                                                       |
| 8  | [8]   | The method of claim 1 wherein directing the indicia is performed by the computer system responsive to receiving information about a characteristic of the electronic visitor.                                                                             |
| 9  | [9]   | The method of claim 1 further comprising categorizing the profile attribute within at least one of a plurality of predefined categories.                                                                                                                  |
| 15 | [15]  | The method of claim 1 wherein the server computer controls ad space that is in a different medium than the medium of the first media property.                                                                                                            |
| 16 | [16]  | The method of claim 1 wherein the server computer controls the ad space only temporarily.                                                                                                                                                                 |

|    |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17 | [17] | <p>A tangible computer-server device comprising a processor and a memory and programmed to implement a method of directing electronic advertisements, the method comprising:</p> <p>for each of a multitude of different electronic visitors to a first media property:</p> <p>(a) automatically with the device directing, to a third-party server computer controlling advertising space on a second media property, indicia of a condition, which condition relates specifically to an electronic visitor, for display of an advertisement to an electronic visitor when the electronic visitor visits the second media property at a time after the electronic visitor visits the first media property, subject to determining that the condition has been met;</p> <p>(b) wherein directing the indicia is based on information indicating to the computer server device that at least one of a plurality of profile attributes is possibly applicable to the electronic visitor, which indicated profile attribute or attributes was received by the device as a result of the electronic visitor visiting the first media property; and</p> <p>(c) wherein the advertisement is correlated with the indicated profile attribute or attributes.</p> |
| 18 | [18] | <p>The device of claim 17 wherein the condition for display of the advertisement is that a price charged by the second media property is less than a profile-attribute-dependent price that an advertiser is willing to pay for display of the advertisement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 21 | [21] | <p>A system comprising one or more computers programmed to implement a method of directing electronic advertisements, the method comprising:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|    |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | <p>for each of a multitude of different electronic visitors to a first media property:</p> <p>(a) automatically directing, to a third-party server computer controlling advertising space on a second media property, indicia of a condition, which condition relates specifically to an electronic visitor, for display of an advertisement to an electronic visitor when the electronic visitor visits the second media property at a time after the electronic visitor visits the first media property, subject to determining that the condition has been met;</p> <p>(b) wherein directing the indicia is based on information indicating to the system comprising one or more computers that at least one of a plurality of profile attributes is possibly applicable to the electronic visitor, which indicated profile attribute or attributes was received by the system comprising one or more computers as a result of the electronic visitor visiting the first media property; and</p> <p>(c) wherein the advertisement is correlated with the indicated profile attribute or attributes.</p> |
| 22 | [22] | <p>22. The system of claim 21 wherein the condition for display of the advertisement is that a price charged by the second media property is less than a profile-attribute-dependent price that an advertiser is willing to pay for display of the advertisement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Viant Technology LLC and LiveIntent, Inc. (“Petitioners” or “Clients”) petition for *Inter Partes* Review (“IPR”) of claims 1-2, 5-9, 15-18, 21-22 (“the Challenged Claims”) of U.S. Patent No. 8,959,146 (“the ’146 Patent”). Compelling evidence presented in this Petition demonstrates a reasonable likelihood Petitioners will prevail with respect to at least one of the Challenged Claims.

## **I. REQUIREMENTS FOR IPR**

### **A. Grounds for Standing**

Petitioner certifies the ’146 Patent is available for IPR. This petition is being filed within one year of service of the complaints against Petitioners.<sup>1</sup> VLI-1010, VLI-1011. Petitioners are not barred or estopped from requesting review of the Challenged Claims on the below-identified grounds.

### **B. Challenge and Relief Requested**

Petitioners request an IPR of the Challenged Claims on the grounds noted below. Dr. Mitzenmacher provides supporting testimony in his Declaration. VLI-1003, ¶¶1-104.

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<sup>1</sup> The ’146 patent was first asserted in the first amended complaint against Viant. VLI-1010.

| Ground | Claim(s)                   | 35 U.S.C. §103  |
|--------|----------------------------|-----------------|
| 1      | 1, 2, 5-9, 16-18, 21-22    | Burdick         |
| 2      | 1, 2, 5, 8-9, 15-18, 21-22 | Burdick-Grannan |

| Reference | Filing Date | Publication Date |
|-----------|-------------|------------------|
| Burdick   | 5/2/2006    | 11/8/2007        |
| Grannan   | 4/18/2006   | 10/18/2007       |

### **C. Claim Construction**

Petitioner submits no formal claim constructions are necessary because “claim terms need only be construed to the extent necessary to resolve the controversy.” *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011). Petitioner reserves the right to respond to any constructions offered by Patent Owner or adopted by the Board. Petitioner is not conceding that each challenged claim satisfies all statutory requirements, nor waiving arguments/grounds that cannot be raised in this proceeding.

### **D. Level of Ordinary Skill in the Art**

A person of ordinary skill in the art (“POSITA”) relating to the subject matter of the ’146 Patent as of June 19, 2006 would have had (1) at least a bachelor’s

degree in computer science, computer engineering, electrical engineering, or a related field, and (2) at least two years of industry experience with e-commerce computing systems, including systems that support targeted advertising. VLI-1003, ¶¶76-79. Additional education could substitute for professional experience, and professional experience for education. *Id.*

## **II. THE '146 PATENT**

### **A. Brief Description**

The '146 Patent is directed to profile-based behavioral targeting advertisement placement methods. VLI-1001, 1:21-24; VLI-1003, ¶III.A. In the '146 Patent, an “automatic system facilitates selection of media properties on which to display an advertisement, responsive to a profile collected on a first media property.” VLI-1001, Abstract. The “[a]d space can be on a web site, in a TV program, in a text message, in a radio show, in any broadcasted material, in any streaming video or audio, etc.” VLI-1001, 3:48-51, 9:4-9. The '146 Patent provides no implementation details describing how selected ads are inserted into real-time media such as TV programs, radio shows, streaming video or audio, etc. VLI-1001, *generally*.

A “behavioral-targeting company calculates expected profit for an ad correlated with the profile and arranges for the visitor to be tagged with a tag readable by the selected media property.” *Id.* “[P]rofit can be calculated by deducting, from the revenues that are expected to be generated from an ad delivered based on

the collected profile, at least the price of ad space at a media property where the BT company might like to deliver ads to the profiled visitor,” and “[w]hen the calculated profit is positive (i.e., not a loss), the BT company arranges for the visitor to be tagged with a tag readable by the selected media property through which the BT company expects to profit.” *Id.* While the ’146 Patent specification asserts improved efficiency over prior art systems through a BT company filtering selected media properties for ad-placement based on profile-dependent profit calculations (5:43-6:35), the ’146 Patent’s claims are not limited to this alleged innovation, instead seeking much broader coverage untethered to particular profit calculations. In doing so and as shown below, the ’146 Patent’s broad claims run afoul of prior art.

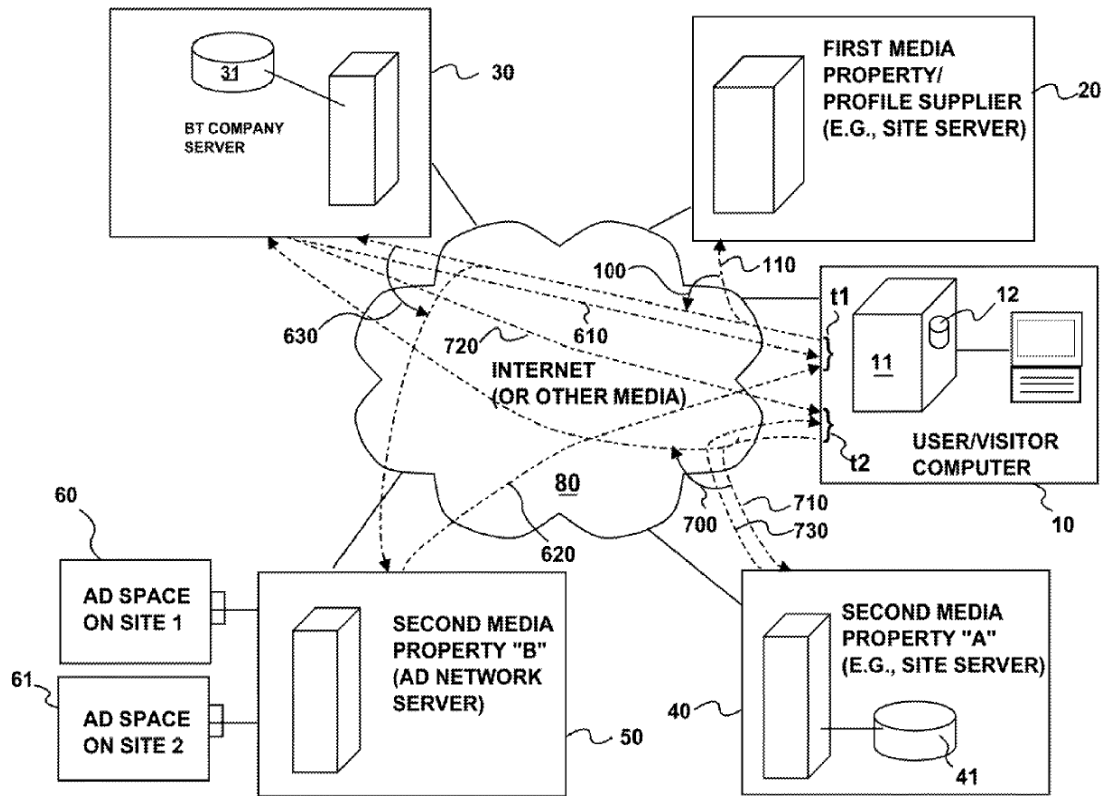


**FIG. 3**

VLI-1001, FIG. 3.

## **B. Prosecution History**

All claims in the application were initially rejected “because the claimed invention is directed to non-statutory subject matter” and for double patenting. VLI-1002, 131, 139-148. Claim 1 was further rejected “as being unpatentable over Brian O’Kelley (United States Patent Application Publication No. US 2006/0122879 A1) ... in view of Charles A. Eldering (United States Patent No. US 6,324,519 81).” VLI-1002, 136. Applicant initiated a telephonic interview, which

Applicants summarized as “Examiner proposed amendments for applicant's consideration by canceling claim 1 and re-writing claim 1 as new claim 37 that recites similar features from allowed parent case 13/491,454.” VLI-1002, 102. Examiner subsequently allowed the amended claims. VLI-1002, 76.

Regarding the parent case, Examiner wrote in the interview summary that “Examiner discussed the claims with Applicant, and indicated that upon a closer look at Haveliwala, the limitation of ‘subject to the second media property determining that a condition for display of the advertisement has been met,’ and ‘which condition is directed to the second media property’ is absent from Haveliwala, as it is not the third-party website 119 (formerly mapped to the claimed second media property), but rather the advertisement server 114 that determines the condition.” VLI-1009, 292. The parent case was allowed when “Examiner and Applicant reached an agreement to amend the claims to specify that an advertisement is automatically displayed to the electronic visitor only when a given condition has been met, and specifically that 1., ‘automatically with the computer system directing to a third-party server computer controlling advertising space on a second media property,’ and 2. ‘indicia of a condition for display of an advertisement’.” *Id.*

The Office never considered Burdick or Grannan, which are the basis for Grounds 1 and 2, and which, as described below, discloses the features that led to allowance. VLI-1002, *generally*.

### III. THE CHALLENGED CLAIMS ARE UNPATENTABLE

#### A. Ground 1: Burdick renders claims 1, 2, 5-9, 16-18 and 21-22 obvious

##### 1. Burdick

Burdick describes a “method of facilitating trading of advertising” where an exchange receives “an ask from a publisher broker for advertisement space on a webpage” and “a bid from an advertiser broker for the advertisement space,” pairs “the ask with the bid,” and places “appropriate advertisements” on “the page that is returned to the user.” VLI-1005, Abstract, [0006].

Burdick’s architecture, illustrated in FIG. 2, includes users, publishers, publisher brokers, an exchange, advertiser brokers, advertisers, and audience data brokers. VLI-1005, [0020]-[0046], FIG. 2.

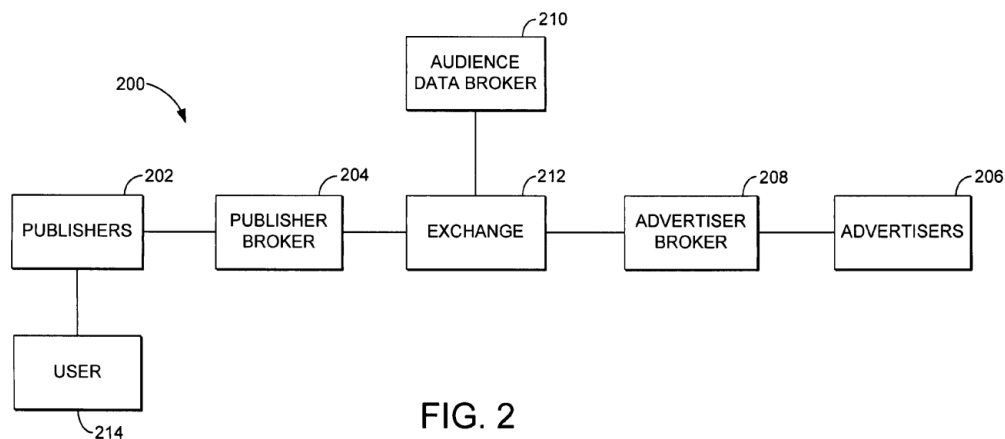


FIG. 2

VLI-1005, FIG. 2.

In Burdick’s architecture, users request webpages “from publishers 202,”

and each “webpage comprises content and advertisement space, which is filled with advertisement(s) from advertisers 206.” VLI-1005, [0035].

A publisher broker is “an entity that represents publishers 202 with the goal of maximizing ad revenue, ensuring quality ads, etc.” VLI-1005, [0021]. “Publisher broker 204 allows small and mid-size publishers [] to aggregate in order to drive higher yield for themselves.” VLI-1005, [0021]. A publisher broker can “calculate the ask for a given page view on the publisher's site, and potentially enrich the available user data in the request.” VLI-1005, [0022].

Burdick explains that an “advertiser purchases ad space on websites,” e.g., “a local businesswoman who operates a website for her small flower shop” and “a massive corporate entity such as General Motors.” VLI-1005, [0023].

Burdick’s “advertiser broker 208 is an aggregator of advertisers” and has “the goal of optimizing advertisers 206's spending and placing monetary values on displaying advertising of a particular format, on a particular website, to a particular audience.” VLI-1005, [0024].

In Burdick, an “audience data broker 210 is an aggregator of user data providers,” that “maintains any partial information that can be referred back to an individual user (such as one of users 214, discussed below) for advertising purposes,” such as “demographic, psychographic, and behavioral information.” VLI-1005, [0026]. Examples of user data include “age, gender, wealth index, interests,

shopping habits, etc.,” but “embodiments of the present invention are not limited to any specific type of user data.” VLI-1005, [0026].

The audience data broker receives user data from user data providers, which are entities “that maintain[] any partial information that can be referred back to an individual user (such as one of users 214, discussed below) for advertising purposes.” VLI-1005, [0026]. Burdick provides an example in which “[a]ny online store that collects user data can function as audience data broker 210 by providing user location level and user purchase pattern level information,” and this “information can be aggregated with demographic profiles from small web email providers to form more comprehensive user descriptions.” VLI-1006, [0026].

The audience data broker “enriches information regarding a user viewing one of publishers 202's webpages,” which “increases the value of the display of the ad to advertisers 206, helps produce more relevant ads to consumers, and creates a more complete picture of the user for ad serving purposes.” VLI-1005, [0027]. For example, the audience data broker 210 can append “known user attributes into [a] request for the consumption of advertiser broker 208.” VLI-1005, [0028].

Burdick's system also includes an exchange that is “a server or set of servers” that “routes traffic and facilitates transactions, e.g., auctions, between publisher broker 204, advertiser broker 208, and audience data broker 210.” VLI-1005, [0033]. The “exchange 212 is based on a CPI [cost per impression] model

between publisher broker 204 and advertiser broker 208, where, on each request, publisher broker 204 will set a minimum ask, i.e., reserve price, for their available ad space, and advertiser broker 208 will place a bid on the right to have their ads displayed on this request,” although “embodiments are not limited to CPI pricing only.” VLI-1005, [0040].

Additionally, the exchange “is the framework that allows publisher broker 204 to have its ads enriched with additional user data by audience data broker 210.” VLI-1005, [0033]. The exchange provides “base data, such as the user IP address, the URL of the publisher's page, and any other such information deemed relevant” to the advertiser brokers “so that the advertiser broker may attempt to extract additional information to provide value-added services to the advertisers they service.” VLI-1005, [0034].

Notably, Burdick’s system operates on a per-visitor-basis. For example, in response to a visitor visiting a web page of a publisher serviced by publisher broker 204, the publisher broker 204 communicates to the exchange 212 an ask price specific to that visitor (along with any known profile information for that visitor) and specific to a particular ad-space on the currently visited web page. VLI-1005, [0022](“ The publisher broker determines what the ask should be for a particular request, given the user information present, the inventory grouping that the request

falls into, and the rules the publisher has set up around that information.”<sup>2</sup> The exchange 212 may further enrich the ask based on information about that visitor collected from the audience data broker 210. VLI-1005, [0033](“Exchange 212 is the framework that allows publisher broker 204 to have its ads enriched with additional user data by audience data broker 210.”). For example, the exchange 212 may receive and provide information about the visitor related to a prior web page that the visitor previously visited and which is reflective of the visitor’s current interests/preferences. VLI-1005, [0027], [0033], [0036], [0044]-[0045]. An advertiser broker 208 may review the ask and associated profile information about the visitor and offer a bid at or above the ask price to display an ad in the particular ad-space of the web page currently being visited by the visitor. VLI-1005, [0006], [0034], [0036], [0040], [0047]. If the bid is the best (e.g., highest cost per impression) among all bidders, the exchange 212 arranges the corresponding advertisement associated with the bid to be displayed to the visitor in the corresponding ad-space of the web page currently being viewed by the visitor. VLI-1005, [0034], [0037], [0047], [0048].

Burdick further explains that “[t]o alleviate the concern that exchange 212

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<sup>2</sup> Unless otherwise noted, all underlining included in cited quotations has been added by Petitioner for emphasis.

will not be impartial both as hosting body and as a direct participant, in an embodiment, transparency will be built into exchange 212,” and the “exchange 212 does not have a way to identify brokers of any kind.” VLI-1005, [0043].

## 2. Analysis

### *[1.1]*

To the extent the preamble is limiting, Burdick renders it obvious. VLI-1003, ¶28, §VI.A[1.1].<sup>3</sup>

For example, Burdick describes a “method of facilitating trading of advertising (***method of directing electronic advertisements***)<sup>4</sup> [that] comprises receiving an ask from a publisher broker for advertisement space on a webpage, receiving a bid from an advertiser broker for the advertisement space, and pairing the ask with the bid.” VLI-1005, Abstract. The “advertiser broker represent[s] at least one advertiser” and manages “an advertiser's bid for the advertisement space” by receiving “the impression information along with whatever user data has been provided from those audience data brokers they are licensing from, and posts corresponding bids.”

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<sup>3</sup> The reference “§VI.A[1.1]” refers to element [1.1] in the table in §VI.A. Other claim elements are referenced similarly.

<sup>4</sup> All bold and italicized language found in parentheses within cited quotations has been added by Petitioner and identifies relevant claim language.

VLI-1005, Abstract, [0006].

Burdick further explains that the “invention may be practiced in a variety of system configurations, including ... general-purpose computers” (***performed by a computer system comprised of one or more computers***).” VLI-1005, [0015]. A POSITA would have understood that since the components of the invention can be practiced by general-purpose computers, Burdick’s advertiser broker (computer system) is a ***computer system comprised of one or more computers*** that executes ***a method of directing electronic advertisements***, as explained further below. VLI-1003, ¶54; §III.B.

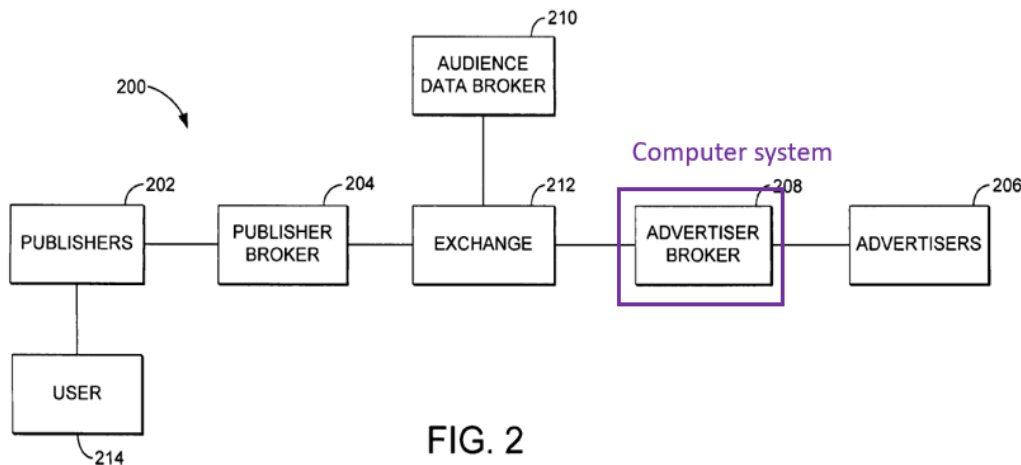


FIG. 2

VLI-1005, FIG. 2(annotated).

**[1.2]**

Burdick renders [1.2] obvious. VLI-1003, ¶¶29-31, §§III.A, VI.A[1.2].

For example, Burdick explains that “[f]or purposes of explanation only, only one user will be discussed herein,” but “embodiments of the present invention are not limited to a single user, as any number of users may exist” (***for each of a multitude of different electronic visitors***), including users that “request a webpage from publishers 202” (***to a first media property***, e.g., the webpage from the publisher of a first media property). VLI-1005, [0035]; VLI-1003, ¶31.

Burdick provides one example in which, “[f]or the ‘cheap Bali vacations’ ad, Expedia creates a targeting profile for **users** who: ‘bought a book on Bali in the last month,’ ..., ‘Have household income between \$30,000 and \$60,000,’ ‘Have been searching for vacation deals,’ and ‘Have ever clicked on ads,’” in which case “Expedia places a 20 cent base bid.” VLI-1005, [0045]. In this example, a POSITA would have found it obvious that “searching for vacation deals” includes visiting a particular vacation search media property (“vacation website,” for brevity) such as a search engine or website listing vacation deals because such media properties were commonly used to search for vacation deals. VLI-1003, ¶50 (citing VLI-1020, VLI-1021, VLI-1022).

Additionally, since Burdick’s uses the plural “users,” a POSITA would have understood that Burdick is describing multiple users (***multitude of different electronic visitors***), visiting the vacation website (***to a first media property***). VLI-1005, [0045]; VLI-1003, ¶31, 39. Similarly, Burdick states that “embodiments of

the present invention are not limited to a single user, *as any number of users may exist.*” VLI-1005, [0035]. Since Burdick’s “[u]sers 214 request a webpage from publishers 202,” and “[t]he webpage comprises content and advertisement space, which is filled with advertisement(s) from advertisers 206,” a POSITA would have understood that, in at least some implementations of Burdick’s system, the request for the web page includes requests from users for the vacation website (*first media property*), which itself may include ad space for targeted ads. VLI-1005, [0035]; VLI-1003, ¶31, 33, 39, §III.A. Further, since Burdick’s invention is directed at “any number of users,” a POSITA would have found obvious that steps (a)-(c) (i.e., [1.3]-[1.5]) would be performed separately for each of a multitude of visitors to, e.g., Burdick’s vacation website, with the information regarding the user’s interaction with the website being collected to build up a profile for the visitor for the purpose of enriching ad requests presented to the visitor at a later time. VLI-1005, [0035]; VLI-1003, ¶31. Indeed, a POSITA would have understood or found it obvious, in at least some implementations of Burdick’s system, to have Burdick’s audience data broker 210 store profiles for individual users that each include a collection of attributes specific to that user that are collected from different data providers, including websites, e.g., Burdick’s vacation website, that were previously visited by the user. VLI-1005, [0026]-[0027], [0029], [0046]-[0047]; VLI-1003, ¶¶29-30, 35-37. Such a configuration would have been obvious to enable

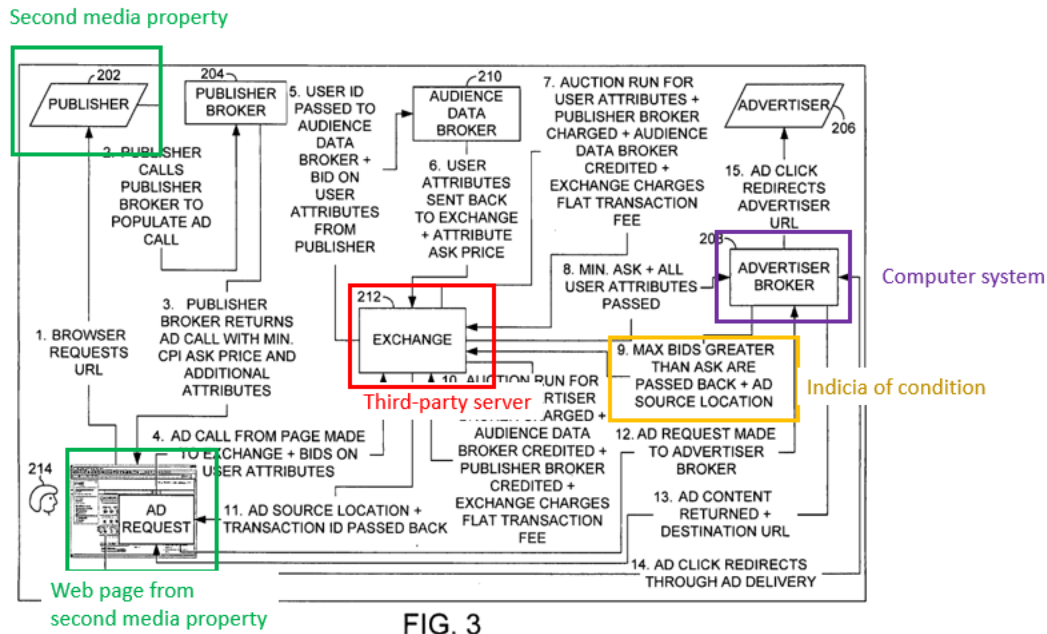
Burdick's system to better tailor its advertisements to each individual user based on that user's particular combination of attributes and prior consumption of website/webpage content. VLI-1003, ¶¶29-30, 35-37, 39, 49-51.

**[1.3.i]**

Burdick renders [1.3.i] obvious. VLI-1003, ¶¶15-27, 34 46, 49-51, 54-57, §§VI.A[1.3.i], III.A, III.B.

As described in [1.1], Burdick's advertiser broker is a **computer system**. §III.A.2[1.1].

Burdick's advertiser broker (**computer system**) directs (**directing**) a bid (**indicia of a condition**) to an exchange (**third-party server**). VLI-1003, ¶49-51. For example, as illustrated in Burdick's FIG. 3, step 9, "max bids (**indicia of a condition**) ... are passed back" to the exchange (**directing, to a third-party server computer**). VLI-1005, FIG. 3; VLI-1003, ¶¶49, 55-57, §III.B.



VLI-1005, FIG. 3 (annotated); VLI-1003, ¶49.

Further, Burdick explains that the “exchange (*third-party server computer*) 212 is based on a CPI model between publisher broker 204 and advertiser broker 208 (*computer system*), where, on each request, publisher broker 204 will set a minimum ask, i.e., reserve price, for their available ad space, and advertiser broker 208 will place a bid (*directing ... indicia of a condition*) on the right to have their ads displayed on this request.” VLI-1005, [0040]; VLI-1003, ¶46. The bid is an *indicia of a condition* because it indicates to the exchange 212 the condition set by the advertiser broker 208 for purchasing the advertising space, i.e., the advertiser broker 208 is willing to buy the advertising space on the condition that the price for

the advertising space is no more than the amount indicated by the bid.<sup>5</sup> VLI-1003, ¶51; VLI-1005, [0040].

Burdick further explains that “advertiser brokers (**computer system**) receive the impression information along with whatever user data has been provided from those audience data brokers they are licensing from, and posts corresponding bids” (**directs ... indicia of a condition**). VLI-1005, [0006]. Burdick additionally states that “if the advertiser broker has any ads that it would like to have displayed and that meet the ask (**automatically with the computer system**), it returns (**directing**) those ads, up to the number of ads requested, along with a CPI (cost per impression) bid (**indica of a condition**) on each.” VLI-1005, [0034].

Moreover, Burdick, like the ‘146 Patent, contemplates **automatically...directing** the **indicia of a condition**. VLI-1003, ¶15, 54. For example, Burdick states that “in the general context of computer code or machine-useable instructions, including computer-executable instructions such as program modules, being executed by a computer or other machine, such as a personal data assistant or other

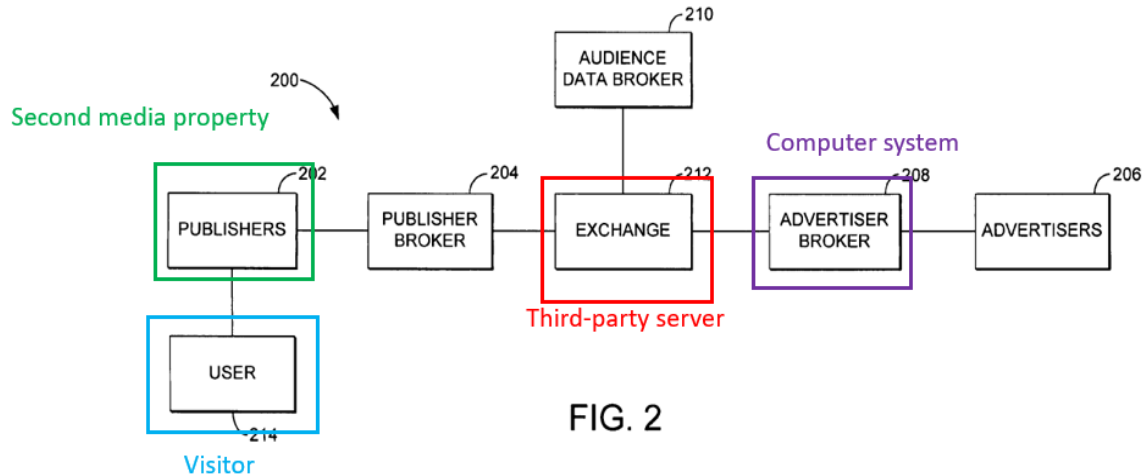
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<sup>5</sup> Since Burdick explains that a second-price auction can be used “to facilitate aggressive bidding,” the actual price paid can be less than the bid but will not exceed the bid. VLI-1005, [0038]; VLI-1003, ¶52.

handheld device” and describes “an exemplary operating environment for implementing embodiments of the present invention is shown and designated generally as computing device.” VLI-1005, [0015]-[0016]. Therefore, a POSITA would have understood or found obvious that Burdick’s invention is described as being performed with computers, computer systems, browsers, etc. which a POSITA would have understood to all be automatically done by programmed software and hardware. VLI-1003, ¶15, 54. Additionally, Burdick contemplates ***automatically...directing the indicia of a condition*** by failing to disclose any need for manual intervention in communicating the bid to the server controlling the advertising space. VLI-1003, ¶15, 54. A POSITA also would have found such automatic communication and subsequent populating of the targeted ad to be obvious, given the need to quickly present the ad to a visitor upon and in response to detecting that a visitor is visiting a particular website having ad space. VLI-1003, ¶15, 54, §III.A (citing VLI-1024).

Burdick’s exchange 212 (***third party server computer***) ***controls advertising space on a second media property***. VLI-1003, ¶¶44-45. For example, Burdick explains that the “exchange 212 proxies a display of the ads on the publisher website (***second media property***).” VLI-1005, [0037]. Additionally, Burdick explains that once the exchange 212 selects a winning bidder, the “[e]xchange 212 passes the ad source location and transaction identifier back (11)” to the browser. VLI-1005,

[0047]; VLI-1003, ¶¶44-45.



VLI-1005, FIG. 2(annotated)

Since the exchange proxies the display of ads on websites and causes the browser to load the ad by passing the ad source location (without involvement by the publisher 202 or publisher broker 204), a POSITA would have understood that the exchange 212 **controls advertising space** on those publisher websites. VLI-1003, ¶¶44-45.

Notably, the **control** of the **advertising space** of a publisher 202's website exercised by Burdick's exchange 212 is similar to the temporary control of an advertisement space exercised by the second media property (ad network server) 50 of the advertising space 60 of a website 1 and the advertising space 61 of a website 2 described by the 146 Patent. VLI-1001, 3:56-4:3, 9:65-10:20, FIG. 3. In more detail, the '146 Patent describes an example in which "a second media property

controls ad space with prices that fall within a range,” and, in response to receiving an amount that an advertiser is willing to pay for an ad-space controlled by the second media property (ad network server) 50, the second media property (ad network server) 50 identifies an ad space that it controls on websites 1 and 2 with a corresponding price and arranges for an advertisement to be inserted into that ad space. VLI-1001, 9:65-10:20. This is analogous to Burdick’s exchange 212 controlling the ad space on a publisher 202 by identifying the ad space of publisher 202 as corresponding to the winning bid and arranging for the ad corresponding to that bid to be inserted into that ad space. VLI-1003, ¶¶44-45.

A POSITA would have understood that the exchange is a *third-party server*. VLI-1003, ¶¶16-27, 55-57. For example, Burdick explains that the advertiser broker “is an entity that represents advertisers 206 with the goal of optimizing advertisers 206's spending and placing monetary values on displaying advertising of a particular format, on a particular website, to a particular audience.” VLI-1005, [0024]; VLI-1003, ¶34. In contrast, the exchange “acts as a mediator among publisher broker 204, advertiser broker 208, and audience data broker 210,” and “creates a system in which audience data broker 210 can monetize its data and in which advertiser broker 208 can reach a larger audience of more highly targetable traffic.” VLI-1005, [0033]. Burdick further explains that “[t]o alleviate the concern

that exchange 212 will not be impartial both as hosting body and as a direct participant, in an embodiment, transparency will be built into exchange 212,” e.g., “exchange 212 does not have a way to identify brokers of any kind.” VLI-1005, [0043]. Since the exchange acts as a “mediator” between publisher brokers and advertiser brokers, not as a principal in the transaction, a POSITA would have understood or found obvious that the exchange is, at least in some embodiments, a **third party**, controlled by neither a publisher broker nor an advertiser broker. VLI-1005, [0024]; VLI-1003, ¶¶16-25.

**[1.3.ii]**

Burdick renders [1.3.ii] obvious. VLI-1003, ¶¶35, 39, 44, 46-47, 49, 51, 68, §§VI.A[1.3.ii], III.A.

Burdick explains that an “[a]dvertiser broker 208 can base its bids on any targeting attributes provided by audience data broker 210.” VLI-1005, [0036]. Burdick similarly explains that “advertiser brokers receive the impression information along with whatever user data has been provided from those audience data brokers they are licensing from, and posts corresponding bids.” VLI-1005, [0006].

The user data can include “partial information that can be referred back to an individual user (**electronic visitor**) (such as one of users 214, discussed below) for advertising purposes,” e.g., “demographic, psychographic, and behavioral information,” and specifically “age, gender, wealth index,” etc. VLI-1005, [0026]. In

Burdick, examples include “users who have a history of purchasing vacations, users who recently have purchased books on vacations and users who perform searches related to travel.” VLI-1005, [0044]. Thus, a POSITA would have recognized that at least some user data *relates specifically to an electronic visitor*. VLI-1003, ¶¶35, 39, 49, 68.

Burdick provides a further example in which “Expedia as an advertiser has an ad for ‘cheap vacations in Bali’,” and determines “that the best way to target vacation ads is around users who have a history of purchasing vacations, users who recently have purchased books on vacations and users who perform searches related to travel.” VLI-1005, [0044]. Expedia’s bid to display the “cheap vacations in Bali,” depends on the user data (*relates specifically to an electronic visitor*) provided to the advertiser broker, e.g., a “20 cent base bid,” plus “a 5 cent incremental bid for the first attribute, a 10 cent incremental bid for the second attribute,” etc. VLI-1005, [0045]; VLI-1003, ¶¶35, 39, 49, 68; §III.A.

Since the bid corresponds to the user data, and the user data relates specifically to an individual user (*electronic visitor*), a POSITA would have understood that the bid corresponds to the individual user. VLI-1003, ¶¶35, 39, 49, 68.

Continuing Burdick’s example, “Borders as a publisher has a user requesting the page on the ‘Lonely Planet Guide to Indonesia’ and they would like to show ads on that page.” VLI-1005, [0045]. In response, based on user data information

(e.g., “bought a book on Bali in the last month,” “Have ever clicked on ads” and “Have traveled to a tropical location in the last two years”), “Expedia might place an aggregate bid of 24 cents, and after subtracting the licensing fees, their base bid would be equal to 20 cents.” VLI-1005, [0046]. Since Expedia’s bid depends on user data specific to the user visiting Border’s page (e.g., Border’s web page “Lonely Planet Guide to Indonesia”), a POSITA would have understood that the bid *relates specifically to an electronic visitor*. VLI-1005, [0045]-[0046]; VLI-1003, ¶¶35, 39, 49, 68.

As explained further in §III.A.2[1.3.iv], in one example, the *indicia of the condition* is the bid price (offered by the advertiser broker for displaying an ad to a user visiting a particular web page) because it indicates that the advertiser broker is willing to buy the advertising space on the condition that the price for the advertising space is no more than the amount indicated by the bid. §III.A.2[1.3.iv]; VLI-1005, [0037], [0040]; VLI-1003, ¶¶46, 51.

Since the bid (which depends on user data) corresponds to an individual user (*relates specifically to an electronic visitor*) and indicates the *condition* for purchasing the ad space (e.g., the price for the advertising space is no more than the amount indicated by the bid), a POSITA would have understood that the *condition relates specifically to an electronic visitor*. VLI-1003, ¶¶35, 39, 49, 68. For example, if Expedia’s bid (which *relates specifically to an electronic visitor* based on

that user's specific user data) for displaying the ad is the winning bid (the **condition** is that the price for the advertising space is no more than Expedia's bid, which is the case when Expedia's bid wins), then Expedia's ad will be displayed on the page visited by the user (e.g., Borders's "Lonely Planet Guide to Indonesia" page). VLI-1003, ¶¶44, 47.

**[1.3.iii]**

Burdick renders [1.3.iii] obvious. VLI-1003, ¶¶29-30, 32, 34-36, 42-44, 46, 49, §§VI.A[1.3.iii], III.A.

In Burdick, the bid is directed **for display of an advertisement to the electronic visitor**. VLI-1003, ¶¶34, 36, 43-44, 46, 49. For example, Burdick explains that the "advertiser broker 208 will place a bid on the right to have their ads displayed on this request" (**for display of an advertisement to the electronic visitor**). VLI-1005, [0040]; VLI-1003, ¶46. Further, the "exchange 212 then ranks all ads across all advertiser brokers and chooses the best one," and if "these ads meet or exceed the publisher ask, then exchange 212 proxies a display of the ads on the publisher website" (**for display of an advertisement to the electronic visitor**). VLI-1005, [0037]. Additionally, "[e]xchange 212 provides a call back to the winning advertiser broker(s) telling it which ads were displayed" (**for display of an advertisement to the electronic visitor**). VLI-1005, [0034].

The bids are directed when the electronic visitor **visits the second media**

**property.** VLI-1003, ¶29-30, 44. For example, Burdick explains that when “user 214 opens a browser and requests a URL of a webpage from publisher” (***visits the second media property***), and “the webpage has some advertisement space available, which publisher 202 desires to sell to an advertiser,” the publisher “calls publisher broker 204 to populate the ad call,” the exchange 212 runs an auction using the user attributes, and “[a]dvertiser broker 208 responds with all of the bids that are greater than the ask, along with the ad source location.” VLI-1005, [0047]. For example, “Borders as a publisher has a user requesting the page on the ‘Lonely Planet Guide to Indonesia’ (***second media property***) and they would like to show ads on that page.” VLI-1005, [0045].

Further, directing the bid occurs at ***a time after the electronic visitor visits the first media property*** since Burdick teaches that “that the best way to target vacation ads is around users who have a history of purchasing vacations...and users who perform searches related to travel.” VLI-1005, [0044]; VLI-1003, ¶42, 49; §III.A. A POSITA would have understood from the word “history” that the searches related to travel occur before placement of the ad on the second media property. VLI-1003, ¶42, 49. Further, since Burdick expressly discloses targeting vacation ads to users who have a history of purchasing vacations and users who perform searches related to travel, a POSITA would have found it obvious that such prior searches and purchasing could, in some implementations, be performed

on a vacation website because such websites were known to provide these services to visitors (*after the electronic visitor visits the first media property*). VLI-1003, ¶¶49-50 (citing VLI-1020, VLI-1021, VLI-1022), §III.A.

Burdick further explains that “[a]ny online store that collects user data can function as audience data broker 210 by providing ... user purchase pattern level information.” VLI-1005, [0026]. A POSITA would have understood that “user purchase pattern level information” at an online store (*first media property*) is both part of the browsing history of the user and occurs before the auction (e.g., the auction for the ad space on the second media property such as the ad space on the ‘Lonely Planet Guide to Indonesia’ page on Border’s website). VLI-1005, [0045]-[0046]; VLI-1003, ¶¶32, 35, 42, 50. When such data are later used to target ads at a second media property, the use is *at a time after the electronic visitor visits the first media property*. VLI-1003, ¶¶¶29, 32, 34-36, 42-44, 46, 49; §III.A.

**[1.3.iv]**

Burdick renders [1.3.iv] obvious. VLI-1003, ¶¶44, 46-47, 51-52, §VI.A[1.3.iv].

In Burdick, the advertisement is displayed *subject to determining that the condition has been met*. VLI-1003, ¶¶46, 51. For example, Burdick explains that “publisher broker 204 will set a minimum ask, i.e., reserve price, for their available ad space, and advertiser broker 208 will place a bid on the right to have their ads

displayed on this request.” VLI-1005, [0040]. Further, in a Burdick embodiment, “where multiple advertiser brokers exist, exchange 212 then ranks all ads across all advertiser brokers and chooses the best one,” and “[i]f these ads meet or exceed the publisher ask, then exchange 212 proxies a display of the ads on the publisher website.” VLI-1005, [0037]. Since Burdick explains that the exchange “proxies a display of the ads on the publisher website” for the ad with the highest bid (as measured by CPI), a POSITA would have understood that the advertisement is displayed only if the ad is the winning bid (***subject to determining that the condition has been met***, where the condition is, e.g., that the price for the advertising space is no more than provided bid, which is the case when the provided bid wins). VLI-1005, [0037]; VLI-1003, ¶¶44, 47, 52 (citing VLI-1023).

Notably, Burdick’s exchange 212 displaying an advertisement when a condition is met (***subject to determining that the condition has been met***) is similar to the displaying of an advertisement in either the advertising space 60 of website 1 or advertising space 61 of website 2 performed by the second media property (ad network server) 50 of the ‘146 patent. VLI-1001, 3:56-4:3, 9:65-10:20, FIG. 3.. In more detail, the ‘146 Patent describes an example in which “a second media property controls ad space with prices that fall within a range,” and, in response to determining that the price for one of its advertising spaces is not more than the price the advertiser is willing to pay (***subject to determining that the condition has been***

**met**), the second media property (ad network server) 50 identifies an ad space that it controls on websites 1 and 2 with a corresponding price and arranges for an advertisement to be displayed in that ad space. VLI-1001, 9:65-10:20. This is analogous to Burdick's exchange 212 arranging for an advertisement associated with a bid to be displayed in an ad space on publisher 202 in response to determining that the bid is the winning bid (*subject to determining that the condition has been met*, where the **condition** is that the price for the advertising space is no more than the bid, which is the case when the bid wins).

**[1.4.i]**

Burdick renders [1.4] obvious. VLI-1003, ¶¶39, 41-42, 47-49, §VI.A[1.4.i].

In Burdick, the exchange 212 provides **profile attributes... possibly applicable to the electronic visitor** to the advertiser broker 208 (**computer system**). VLI-1003, ¶¶14 (citing VLI-1025), 39, 41-42, 48-49. For example, Burdick explains that the exchange “provides collection symbols related to the category of the publisher's page, the meaningful keywords in it, as well as geo-location information extracted from the user's IP address,” and “base data, such as the user IP address, the URL of the publisher's page, and any other such information deemed relevant should also be provided to each advertiser broker (**plurality of profile attributes is possibly applicable to the electronic visitor**) so that the advertiser broker may at-

tempt to extract additional information to provide value-added services to the advertisers they service.” VLI-1005, [0034]. Burdick further explains that “when publishers 202 have an impression that they are willing to sell (with an optional ask), they can provide a URL and any targetable values to exchange 212,” and “[e]xchange 212 passes this data and possible additional user data (**plurality of profile attributes is possibly applicable to the electronic visitor**) from audience data broker 210 to advertiser broker 208 (**computer system**),” where such user data includes “demographic, psychographic, and behavioral information,” e.g., “age, gender, wealth index, interests, shopping habits, etc.,” although “embodiments of the present invention are not limited to any specific type of user data.” VLI-1005, [0026], [0037].

Further, in Burdick, directing the bid (**indicia**) is based on information indicating to the computer system that at least one of a plurality of profile attributes is possibly applicable to the electronic visitor. VLI-1003, ¶¶39, 41-42, 47-49. For example, Burdick explains that “[a]dvertiser 208 can base its bids (**directing the indicia**) on any targeting attributes (**based on information indicating to the computer system that at least one of a plurality of profile attributes is possibly applicable to the electronic visitor**) provided by audience data broker 210.” VLI-1005, [0036]. As Dr. Mitzenmacher explains, a POSITA would have understood or found obvious that “possibly applicable” includes “is applicable,” e.g., based “on

any targeting attributes provided by audience data broker.” *Id.*; VLI-1003, ¶47 n.5.

Burdick provides an example in which “Expedia might place an aggregate bid of 24 cents,” and “place a 5 cent incremental bid (*directing indicia of the condition*) for the first attribute (*that at least one of a plurality of profile attributes is possibly applicable to the electronic visitor*), a 10 cent incremental bid for the second attribute, a 2 cent incremental bid for the third attribute, 1 cent incremental bid for the fourth attribute, and a 2 cent incremental bid for the fifth attribute to express their bidding preference.” VLI-1005, [0045]-[0046]; VLI-1003, ¶49. Burdick provides an example where an advertiser can place a base bid, and increase the bid based on attributes of the user who will view the ad. VLI-1005, [0045]-[0046]. Burdick gives an example of “Expedia plac[ing] a 20 cent base bid,” and “[t]o express their bidding preference, they also place a 5 cent incremental bid for the first attribute, a 10 cent incremental bid for the second attribute, a 2 cent incremental bid for the third attribute, 1 cent incremental bid for the fourth attribute, and a 2 cent incremental bid for the fifth attribute to express their bidding preference.” VLI-1005, [0045]. In this example, if none of the attributes are present, the bid would be the 20-cent base bid. If only the first attribute was present, the bid would be 25 cents – the 20-cent base bid, plus the 5-cent incremental bid for the first attribute. If all five attributes are present, the bid would be 40 cents – 20 cents from the base bid and another 20-cents for the five attributes (valued at 5, 10, 2, 1 and 2

cents). VLI-1003, ¶49.

**[1.4.ii]**

Burdick renders [1.4.ii] obvious. VLI-1003, ¶¶35-37, 41-44, 47, 47 n.5, §VI.A[1.4.ii].

In Burdick, at least some of the profile attributes are received by the advertiser broker 208 (*computer system*) as a result of the *electronic visitor visiting the first media property*. VLI-1003, ¶¶35-36. Burdick provides an example in which:

“For the ‘cheap Bali vacations’ ad, Expedia creates a targeting profile for users who: ‘bought a book on Bali in the last month,’ ‘Have traveled to a tropical location in the last two years,’ ‘Have household income between \$30,000 and \$60,000,’ ‘Have been searching for vacation deals,’ and ‘Have ever clicked on ads.’ Expedia places a 20 cent base bid.” VLI-1005, [0045].

A POSITA would have found obvious that “searching for vacation deals” can, in some implementations, include visiting a first media property (e.g., visiting the vacation website or an online store), as explained above. See [1.2] and [1.3iii]. VLI-1003, ¶¶35-36.

Further, in Burdick, *profile attributes* (e.g., viewer visited the vacation website) are received by the advertiser broker 208 (*computer system*) *as a result of the electronic visitor visiting the first media property* (e.g., vacation website). VLI-

1003, ¶¶35-36. For example, in Burdick, an audience data broker collects user data such as “demographic, psychographic, and behavioral information.” VLI-1005, [0026]. Since Burdick describes targeting based on browsing history (e.g., “[has] been searching for vacation deals”), a POSITA would have understood or found obvious that behavioral information collected by an audience data broker includes browsing history, which is the result of the user having visited prior websites (*as a result of the electronic visitor visiting the first media property*). VLI-1005, [0045]; VLI-1003, ¶¶35-36. Burdick defines an “audience data broker” broadly as “any entity that maintains any partial information that can be referred back to an individual user” and explains that “[a]ny online store that collects user data can function as audience data broker 210 by providing user location level and user purchase pattern level information.” VLI-1005, [0026].

In another example, Burdick explains that “[a]ny online store that collects user data can function as audience data broker 210 by providing user location level and user purchase pattern level information.” VLI-1005, [0026]. A POSITA would have understood or found obvious that in an online store, user purchase pattern level information is a *profile attribute or attributes* and are *received by the computer system* (from the audience data broker) *as a result of the electronic visitor visiting the first media property* (purchase(s) at the online store). VLI-1005, [0026]; VLI-1003, ¶¶35-36. Since such profile attributes relate to a particular

user's purchases, the ***profile attributes are possibly applicable to the electronic visitor***. See [1.3.iii]; VLI-1003, ¶¶35-36, 47 n.5.

Further, in Burdick, user data is passed from the audience data broker 210 to the advertiser broker 208 during auctions (***received by the computer system***). VLI-1005, [0006], [0028], [0033]; VLI-1003, ¶¶29, 35-37, 41-44. For example, Burdick explains that “advertiser brokers receive (***received by the computer system***) the impression information along with whatever user data (***profile attributes ... possibly applicable to the electronic visitor***) has been provided from those audience data brokers they are licensing from” and “[a]udience data broker 210 appends known user attributes (***profile attributes ... possibly applicable to the electronic visitor***) into this request for the consumption of advertiser broker 208 (***the computer system***).” VLI-1005, [0006], [0028]; VLI-1003, 47 n.5.

The audience data broker 210 provides user data to advertiser broker 208 via the exchange 212. VLI-1005, FIGS. 2, 3; VLI-1003, ¶¶36-37, 44, 47. For example, Burdick explains that the exchange “is the framework that allows publisher broker 204 to have its ads enriched with additional user data by audience data broker 210,” and the “exchange 212 routes traffic and facilitates transactions, e.g., auctions, between publisher broker 204, advertiser broker 208, and audience data broker 210.” VLI-1005, [0033]. Burdick further explains that the audience data broker “enriches information regarding a user viewing one of publishers 202's

webpages” which “increases the value of the display of the ad to advertisers 206, helps produce more relevant ads to consumers, and creates a more complete picture of the user for ad serving purposes.” VLI-1005, [0027]. Therefore, in Burdick **profile attributes** (e.g., visiting the vacation website) are received by the advertiser broker 208 (**computer system**) (e.g., during an auction mediated by the exchange) as a result of the electronic visitor visiting the **first media property** (e.g., the vacation website or online store). VLI-1005, [0006], [0028], [0033]; VLI-1003, ¶¶35-37, 41-44, 47, 47 n.5.

**[1.5]**

Burdick renders [1.5] obvious. VLI-1003, ¶¶28, 36-37, 44, §VI.A[1.5].

Burdick explains that “advertiser brokers receive the impression information along with whatever user data (**the indicated profile attribute or attributes**) has been provided ... and posts corresponding bids.” VLI-1005, [0006]. The exchange “matches the asks with the bids, and the appropriate **advertisements** are placed on the page that is returned to the user.” VLI-1005, [0006]. A POSITA would have understood or found obvious that since bids correspond to profile attributes (user data, e.g., visiting the vacation website, visiting a search website, etc.) and determine the displayed advertisement, the advertisement is correlated with the profile attribute. VLI-1005, [0044]-[0045]; VLI-1003, ¶¶28, 36-37, 44.

[2]

Burdick renders [2] obvious. VLI-1003, ¶¶46, 49, 51, 52 (citing VLI-1023), §VI.A[2].

In Burdick, the advertiser broker's bid that wins the auction to display an advertisement on a publisher's page is a ***profile-attribute-dependent price***. VLI-1003, ¶49. For example, Burdick provides an example where:

“For the ‘cheap Bali vacations’ ad, Expedia creates a targeting profile for users who: ‘bought a book on Bali in the last month,’ ‘Have traveled to a tropical location in the last two years,’ ‘Have household income between \$30,000 and \$60,000,’ ‘Have been searching for vacation deals,’ and ‘Have ever clicked on ads.’ Expedia places a 20 cent base bid.” VLI-1005, [0045].

A POSITA would have recognized that the bid is a ***profile-attribute-dependent price*** because it depends on search history, travel history, income, etc., which are profile attributes. VLI-1005, [0045]; VLI-1003, ¶49.

In a first example, the ***condition for display*** of the advertisement is that the winning bid (which is a ***profile-attribute-dependent price***, as described above) exceeds the reserve price, which is set by the advertiser broker. VLI-1005, [0040] (“in an embodiment, exchange 212 is based on a CPI model between publisher broker 204 and advertiser broker 208, where, on each request, publisher broker 204

will set a minimum ask, i.e., reserve price, for their available ad space, and advertiser broker 208 will place a bid on the right to have their ads displayed on this request”); VLI-1003, ¶46, 51. The reserve price is ***the price charged by the second media property*** since the reserve price is the minimum ask set by the publisher (***second media property***) for display of an advertisement. *Id.*

Burdick further explains that “[i]n an embodiment, exchange 212 runs an auction for the ad, charges advertiser broker 208, credits audience data broker 210 and publisher broker 204, and holds back a flat transaction fee (10).” VLI-1005, [0047]. Since the exchange holds back a transaction fee, a POSITA would have understood that the publisher broker receives less than the amount paid by the advertiser broker. VLI-1003, ¶51. Therefore, Burdick teaches or renders obvious that ***condition for display of the advertisement is that a price charged by the second media property*** (reserve price) ***is less than a profile-attribute-dependent price that an advertiser is willing to pay for display of the advertisement*** (the winning bid submitted by the advertiser broker) since the exchange holds back a “flat transaction fee” from the winning bid, which, therefore, must exceed the reserve price by at least the flat transaction fee. VLI-1003, ¶51. For example, if the reserve price is 25 cents (***price charged by the second media property***), and the exchange charges a flat fee of 1 cent, the winning bid (***profile-attribute-dependent price that an advertiser is willing to pay for display of the advertisement***) must be at least 24

cents. Therefore, in Burdick, the price charged by the second media property (reserve price) is always less than a profile-attribute-dependent price that an advertiser is willing to pay for display of the advertisement (winning bid). VLI-1005, [0047]; VLI-1003, ¶51.

In a second example, the ***condition for display*** of the advertisement is that the bid placed by the advertiser broker (which is a ***profile-attribute-dependent price***, as described above) exceeds the winning bid's price paid to the publisher. VLI-1003, 51. As described above, since the exchange holds back a flat transaction fee, the bid placed by the advertiser broker that wins the auction will exceed the price charged by (and paid to) the publisher (***second media property***) by the fixed fee. VLI-1005, [0047]; VLI-1003, ¶51. Therefore, ***the price charged by the second media property*** (the portion of the winning bid paid to the publisher) ***is less than a profile-attribute-dependent price that an advertiser is willing to pay*** (the bid made by the advertiser broker) ***for display of the advertisement***. VLI-1003, ¶51.

***[5]***

Burdick renders [5] obvious. VLI-1003, ¶¶28-29, 35-39, 42, 46, 49, 65, §VI.A[5].

Notably, the claim does not identify or limit what entity receives an elec-

tronic redirect of a visitor computer. VLI-1003, ¶38. For example, the claim is silent on whether the computer system directly receives the electronic redirect or, alternatively, whether the computer system directs the indicia responsive to some other entity in the system receiving an electronic redirect. VLI-1003, ¶38. In the latter example, some other entity that directly receives the redirect can provide information to the computer system, causing the computer system to direct the indicia, and therefore, the computer system directs the indicia responsive to (some other entity) receiving an electronic redirect. VLI-1003, ¶38.

With that context, Burdick discloses or renders obvious ***directing the indicia by the computer system responsive to receiving an electronic redirect of a visitor computer***. VLI-1003, ¶37. For example, Burdick explains that “when the audience data broker has contact with a user that they know something about ... the audience data broker can redirect the current user request (***receiving an electronic redirect of a visitor computer***) to the exchange, along with the information and a destination URL for the exchange to redirect the user to afterwards.” VLI-1005, [0029]. The “[e]xchange 212 passes [a URL and any targetable values] and possible additional user data from audience data broker 210 to advertiser broker,” and the “[a]dvertiser broker 208 can base its bids (***directing the indicia by the computer system***) on any targeting attributes provided by audience data broker 210,” e.g., “incrementally bid[ding] for any attribute values exposed to them.” VLI-

1005, [0036]-[0037]. Additionally, Burdick explains that the “advertiser brokers receive the impression information along with whatever user data (***profile-attribute information about the electronic visitor***) has been provided from those audience data brokers they are licensing from, and posts corresponding bids (***directing the indicia***).” VLI-1005, [0006]. Burdick further explains that the bid can vary based on the user data, providing an example in includes “a 5 cent incremental bid for the first attribute, a 10 cent incremental bid for the second attribute, a 2 cent incremental bid for the third attribute, 1 cent incremental bid for the fourth attribute, and a 2 cent incremental bid for the fifth attribute.” VLI-1005, [0045]; VLI-1003, ¶49.

Burdick further teaches or renders obvious that the redirect is ***accompanied by profile-attribute information about the electronic visitor***. VLI-1003, ¶37, 39. For example, Burdick explains that “audience data broker 210 comprises a user data recorder to record user information into the exchange (discussed below) and a user data delivery system to respond to requests for the user information.” VLI-1005, [0029]. Burdick further explains that “the user data recorder informs the exchange that the audience data broker knows something about a user, through whatever means that may be,” e.g., “audience data broker can redirect the current user request to the exchange, along with the information and a destination URL.” VLI-1005, [0029]. Since Burdick states that audience data broker redirects the user request to the exchange with the information, and a POSITA would have understood

or found obvious that the “the information,” refers to “user information,” described immediately above. VLI-1005, [0029]; VLI-1003, ¶37, 39.

Further, a POSITA would have understood or found obvious that Burdick’s “user data,” which are redirected from the audience data broker to the exchange and provided to the advertiser broker (*computer system*), are ***profile-attribute information about the electronic visitor***. VLI-1003, ¶39, 42. For example, Burdick explains that “user data may comprise demographic, psychographic, and behavioral information,” and can include “age, gender, wealth index, interests, shopping habits, etc.” and is “not limited to any specific type of user data.” VLI-1005, [0026]. At least since the ’149 patent similarly describes “profile information” as including, for example, “behavioral information, demographic information, etc.,” a POSITA would have understood or found obvious that Burdick’s user data, e.g., “demographic” and “behavioral information” is ***profile-attribute information about the electronic visitor***. VLI-1001, 2:25-26; VLI-1005, [0026]; VLI-1003, ¶35-36, 39, 65. Burdick further explains that “[h]oles in a user ***profile***” can be filled “using data from other user data providers,” and thus “it might be possible to generate such [ground truth] data by creating data functions based on different providers and choosing the consensus opinion for each ***attribute***.” VLI-1005, [0032]; VLI-1003, ¶39.

Additionally, Burdick explains that “the audience data broker can redirect

the current user request to the exchange along with the information and a destination URL for the exchange to redirect the user to afterwards,” and “whatever information or data key (***profile-attribute information about the electronic visitor***) the audience data broker wishes to receive back is expected to be enough so that the audience data broker can answer user data delivery system requests for the use.” VLI-1005, [0029]. Further, the exchange “will set a cookie to the user's browser with the name of the cookie identifying the audience data broker, and the cookie value being the information provided.” *Id.* Then, “[i]n an embodiment, when the exchange receives an ad request from a user (the user having been sent to the exchange from a publisher broker), if there are any user data attributes that the publisher is willing to pay an additional amount for, then the cookies for all audience data brokers are read from the user's browser,” and “[f]or each audience data broker identified by a cookie, if the audience data broker is currently live, the exchange will send a request to that audience broker with the cookie value and any unknown data attributes which the publisher is willing to pay to have provided.” *Id.* “The audience data broker then responds back, including the information for as many attributes as they know, along with the price they are asking for to allow it to be used.” *Id.* A POSITA would have understood or found obvious that Burdick’s “data key” is ***profile-attribute information about the electronic visitor*** since the data key enables the audience data broker to provide user data (“answer user data

delivery system requests for the use”), which is **profile-attribute information about the electronic visitor**. VLI-1005, [0029]; VLI-1003, ¶¶35-36, 39, 65. As described above, the advertiser broker (computer system) makes a bid in response to user data. VLI-1005, [0006], [0045]; VLI-1003, ¶¶28-29, 46, 49.

Therefore, in summary, a POSITA would have understood or found obvious that the advertiser broker (**computer system**) places a bid (**directing the indicia**) when the audience data broker redirects a user request (**responsive to receiving an electronic redirect of a visitor computer**) to the exchange, which passes user data and/or a data key (**accompanied by profile-attribute information about the electronic visitor profile-attribute information about the electronic visitor**) to the advertiser broker (**computer system**). VLI-1005, [0006], [0029], [0036]-[0037], [0045]; VLI-1003, ¶¶28-29, 35-39, 42, 46, 49, 65, §VI.A[5].

**[6]**

Burdick renders [6] obvious. VLI-1003, ¶¶36, 49, §VI.A[6].

Burdick provides an example in which “[f]or the ‘cheap Bali vacations’ ad, Expedia creates a targeting profile for users who ... ‘[h]ave been **searching** for vacation deals,’ (**responsive to recognizing an action** (search) **conducted on the first media property** (vacation website) **by the electronic visitor**),” for which “Expedia places a 20 cent base bid (**directs the indicia**).” VLI-1005, [0045]. In the example, Expedia also “place[s] a 5 cent incremental bid for the first attribute, a 10 cent

incremental bid for the second attribute, a 2 cent incremental bid for the third attribute, 1 cent incremental bid for the fourth attribute, and a 2 cent incremental bid for the fifth attribute.” VLI-1005, [0045]. Burdick provides a specific example in which Expedia's 5 cent incremental bid is for “bought a book on Bali in the last month;” their 2 cent incremental bid for “Have ever clicked on ads;” and their 10 cent incremental bid is for “Have traveled to a tropical location in the last two years.” VLI-1005, [0046]. Thus, Expedia places a full bid (*directs the indicia*) of 37 cents (20 cent base bid, plus increments of 5 cents, 2 cents and 10 cents). VLI-1003, ¶49.

Burdick further explains that the targeting profile can include a user search action, e.g., “searching for vacation deals.” VLI-1005, [0045]. For example, Burdick states that “Expedia creates a targeting profile for users who: ‘bought a book on Bali in the last month,’ ‘Have traveled to a tropical location in the last two years,’ ‘Have household income between \$30,000 and \$60,000,’ ‘Have been searching for vacation deals,’ and ‘Have ever clicked on ads.’” VLI-1005, [0045].

Since Burdick explains that a targeting profile can include user search actions (e.g., “searching for vacation deals”), and, at least in some cases, a specific bid (*indicia of a condition*) depends on that user search action (e.g., an incremental bid of 3 cent depends on the presence of that search action), a POSITA would have

understood or found obvious that ***directing the indicia*** (e.g., a specific bid that includes an increment determined by a search action) is performed by the ***computer system*** (advertiser broker) ***responsive to recognizing an action*** (e.g., “searching for vacation deals”). VLI-1005, [0045]; VLI-1003, ¶¶36, 49. Further, that search action is ***performed on the first media property*** (e.g., the search action is performed on the vacation website). VLI-1003, ¶¶36, 49.

Additionally, Burdick describes directing a particular indicia (bid) in response to one or multiple factors (actions taken by the user, properties of the user, etc.), and not considering other factors. VLI-1003, ¶49. Burdick provides an example in which “Expedia places a 20 cent base bid. To express their bidding preference, they also place a 5 cent incremental bid for the first attribute, a 10 cent incremental bid for the second attribute, a 2 cent incremental bid for the third attribute, 1 cent incremental bid for the fourth attribute, and a 2 cent incremental bid for the fifth attribute to express their bidding preference.” VLI-1005, [0045]. In this example, the first attribute, which can reflect an action on the first media property (e.g., “[h]ave been searching for vacation deals”) results in an incremental bid of 5 cents (which is “an indicia of a condition” that is directed to the exchange by the advertiser broker 208 “responsive to” the advertiser broker 208 “recognizing [that] action”, i.e., recognizing that the user has been searching for vacation deals on a

website), while the second through fifth attributes, which can similarly reflect actions that might occur on the media property (e.g., “bought a book on Bali in the last month”) result in additional bid increments (which are distinct “indicia of conditions” that are directed to the exchange by the advertiser broker 208 “responsive to” the advertiser broker 208 “recognizing [the respective] actions”). VLI-1005, [0045]; VLI-1003, ¶49.

Further, a POSITA would have understood or found obvious, that other actions do not influence the directing the indicia. VLI-1003, ¶49. For example, the user might have booked a business trip to Washington D.C. on the first media property (e.g., Expedia), but since such a trip does not match any characteristic of the targeting profile (as listed in Burdick’s example), recognizing that action does not influence the process of directing the indicia (submitting a bid). VLI-1005, [0045]; VLI-1003, ¶49.

**[7]**

Burdick renders [7] obvious. See analysis of [6] where “search” is an action. VLI-1003, ¶¶49, 51, §VI.A[7]; *supra* §III.A.2[6].

**[8]**

Burdick renders [8] obvious. VLI-1003, ¶49, §VI.A[8].

For example, Burdick provides an example in which “[f]or the ‘cheap Bali vacations’ ad, Expedia creates a targeting profile for users who ‘bought a book on

Bali in the last month,’ ‘Have traveled to a tropical location in the last two years,’ ‘Have household income between \$30,000 and \$60,000,’ (*responsive to receiving information about a characteristic of the electronic visitor*)” for which “Expedia places a 20 cent base bid (*directs the indicia*)” VLI-1005, [0045]. Thus, the bid (20 cents) is directed in response to receiving the income characteristic of the electronic visitor. VLI-1003, ¶49.

**[9]**

Burdick renders [9] obvious. VLI-1003, ¶¶40-41, 41 n.4, §VI.A[9].

Notably, the claim does not identify or limit what entity categorizes the profile attribute within at least one of a plurality of predefined categories. VLI-1001, *generally*; VLI-1003, ¶41, n.4. However, as Dr. Mitzenmacher explains, in the context of Burdick’s disclosure, there are technical benefits to performing the categorization at the computer system. VLI-1003, ¶41. For example, Burdick explains that data brokers (plural) “can choose to provide their information about the user,” “embodiments of the present invention are not limited to a single audience data broker, as any number of audience data brokers may exist,” “[o]verlapping data could be used to calculate ground truth predictions as well as verify the data provided by individual audience data brokers,” VLI-1005, [0006], [0026]; VLI-1003, ¶41. Therefore, from Burdick’s teachings, a POSITA would have understood that

advertiser brokers can receive profile attributes from multiple audience data brokers. VLI-1003, ¶41. If each data broker independently performed a profile attribute categorization, and provided only the categorization, advertiser brokers will, in some circumstances receive ambiguous information, such as if one audience data broker categorized “income \$40,000” as “income \$25,000 to \$50,000,” while a second audience data broker categorized that same income as “income \$40,000 to \$75,000.” VLI-1003, ¶41. In such a case, the advertiser broker could not accurately determine whether Burdick’s advertiser targeting profile of “income between \$30,000 and \$60,000” is satisfied. VLI-1005, [0045]; VLI-1003, ¶41. In another example, an income of \$25,000 satisfies the first category “income \$25,000 to \$50,000,” but not the targeting profile, “\$30,000 and \$60,000,” while an income of \$40,000 satisfies both. VLI-1003, ¶41. Therefore, a POSITA would have found it obvious that, in at least some implementations, it would be preferable for the advertiser broker (**computer system**) to receive some types of profile information (e.g., income and age) and then the advertiser broker itself performing the categorization as part of relating that profile information to advertiser targeting profiles. VLI-1003, ¶41. Such a configuration would ensure that the profile information for certain attributes provided by the audience data brokers is used as effectively as possible with respect to matching that profile attribute information to advertiser targeting profiles.

With that context, as described in §III.A.2[1.4.i], profile attributes (user data) can include “demographic, psychographic, and behavioral information,” e.g., “age, gender, wealth index, interests, shopping habits, etc.,” although “embodiments of the present invention are not limited to any specific type of user data.” VLI-1005, [0026].

For example, Burdick provides an example in which “[f]or the ‘cheap Bali vacations’ ad, Expedia creates a targeting profile for users who: ‘bought a book on Bali in the last month,’ ‘Have traveled to a tropical location in the last two years,’ ‘Have household income between \$30,000 and \$60,000,’ ‘Have been searching for vacation deals,’ and ‘Have ever clicked on ads.’ (*categorizing the profile attribute within at least one of a plurality of predefined categories*).” VLI-1005, [0045].

A POSITA would have recognized or found obvious that the income range (\$30,000 to \$60,000), “traveled to a tropical location in the last two years,” “ever clicked on ads,” etc., are predefined categories in which the profile attribute is categorized. VLI-1003, ¶¶40-41.

As Dr. Mitzenmacher explains, using such categories also has the technical benefit of reducing the memory space necessary to store bids in the advertiser broker. VLI-1003, ¶41. For example, Burdick states that an “[a]dvertiser broker 208 can base its bids on any targeting attributes provided by audience data broker 210.”

VLI-1005, [0036]. A POSITA would have understood or found obvious that, absent categories, the advertiser broker would need bidding rules for each possible value of an attribute, e.g., income of \$30,000, \$30,001, \$30,002, etc. VLI-1003, ¶41. Similarly, Burdick states that “advertiser broker 208 maintains a user interface through which it interacts with advertisers 206, and through which it manages advertisers 206's preferences, such as preferences for particular user data attributes,” which would be grossly impractical in practice if preferences for each particular value of each user data attributes must be enumerated individually instead of in categories. VLI-1005, [0024]; VLI-1003, ¶41.

**[16]**

In that context, Burdick renders [16] obvious.<sup>6</sup> VLI-1003, ¶¶44-45, §VI.A[16].

As explained in §III.A.2[1.3], Burdick’s server computer controls advertising space.

In Burdick, the exchange “facilitate[s] a transaction for the advertisement

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<sup>6</sup> Since the term “the server computer” has no antecedent basis, this analysis is directed to Burdick’s exchange, which is a “third-party server computer” that controls ad space, as described in §III.A.2.[1.3]. VLI-1003, ¶45, 55-57.

space between the publisher broker and the advertiser broker.” VLI-1005, Abstract. “The exchange [] matches the asks with the bids, and the appropriate advertisements are placed on the page that is returned to the user.” VLI-1005, [0006]. A POSITA would have found it obvious to have Burdick’s exchange (**server computer**) control **ad space only temporarily**. VLI-1003, ¶¶44-45. For example, Burdick explains that the “publisher broker 204 will set a minimum ask, i.e., reserve price, for their available ad space.” VLI-1005, [0040]. A POSITA would have deemed it obvious for the exchange (**server computer**) to cede control of the advertising space if the exchange fails to garner a bid that meets the publisher broker’s minimum ask. VLI-1003, ¶45. This would allow the publisher and/or publisher broker to then reassume control of the advertising space for their own purposes, such as to allow them to insert their own advertisements into that space. Therefore, a POSITA would have found it obvious for the exchange (**server computer**) to **control the ad space only temporarily**, e.g., when the exchange is able to at least meet the reserve price. VLI-1003, ¶¶44-45.

**[17]**

*Supra*, §III.A.2[1]. VLI-1003, ¶¶15 (citing VLI-1024), 53, §VI.A[17].

In addition, Burdick discloses or renders obvious a tangible computer-server device comprising a processor and a memory and programmed to implement a method of directing electronic advertisements, the method. For example, Burdick

describes a “system to facilitate trading of advertising comprises a publisher broker representing at least one publisher and to determine an ask for an advertisement space on the publisher's webpage, an advertiser broker representing at least one advertiser and to manage an advertiser's bid for the advertisement space, and an exchange to facilitate a transaction for the advertisement space between the publisher broker and the advertiser broker.” VLI-1005, Abstract. Burdick further states that its “invention may be practiced in a variety of system configurations, including hand-held devices, consumer electronics, general-purpose computers, more specialty computing devices, etc.” (*tangible computer-server device*) and “[t]he invention may also be practiced in distributed computing environments where tasks are performed by remote-processing devices that are linked through a communications network” (*tangible computer-server device*). VLI-1005, [0015]. Burdick’s servers include “memory 112 [and] one or more processors 114.” VLI-1005, [0016], FIG. 1. In Burdick’s system, “exchange 212 proxies a display (*directing electronic advertisements*) of the ads on the publisher website.” VLI-1005, [0037].

**[18]**

*Supra*, §III.A.2[2]; VLI-1003, §VI.A[18].

**[21]**

*Supra*, §III.A.2[1]; VLI-1003, ¶¶15 (citing VLI-1024), 53, §VI.A[21].

In addition, Burdick discloses or renders obvious a system comprising one or more computers programmed to implement a method of directing electronic advertisements. For example, Burdick describes a “**system** to facilitate trading of advertising comprises a publisher broker representing at least one publisher and to determine an ask for an advertisement space on the publisher's webpage, an advertiser broker representing at least one advertiser and to manage an advertiser's bid for the advertisement space, and an exchange to facilitate a transaction for the advertisement space between the publisher broker and the advertiser broker.” VLI-1005, Abstract. Burdick further states that its “invention may be practiced in a variety of system configurations, including hand-held devices, consumer electronics, general-purpose computers, more specialty computing devices, etc,” and “[t]he invention may also be practiced in distributed computing environments where tasks are performed by remote-processing devices that are linked through a communications network.” VLI-1005, [0015]. In Burdick’s system, “exchange 212 proxies a display (**directing electronic advertisements**) of the ads on the publisher website.” VLI-1005, [0037].

**[22]**

*Supra*, §III.A.2[2]; VLI-1003, §VI.A[22].

**B. Ground 2: Burdick-Grannan renders claims 1, 2, 5, 8-9, 15-18 and 21-22 obvious**

**1. Burdick-Grannan**

**(a) Burdick**

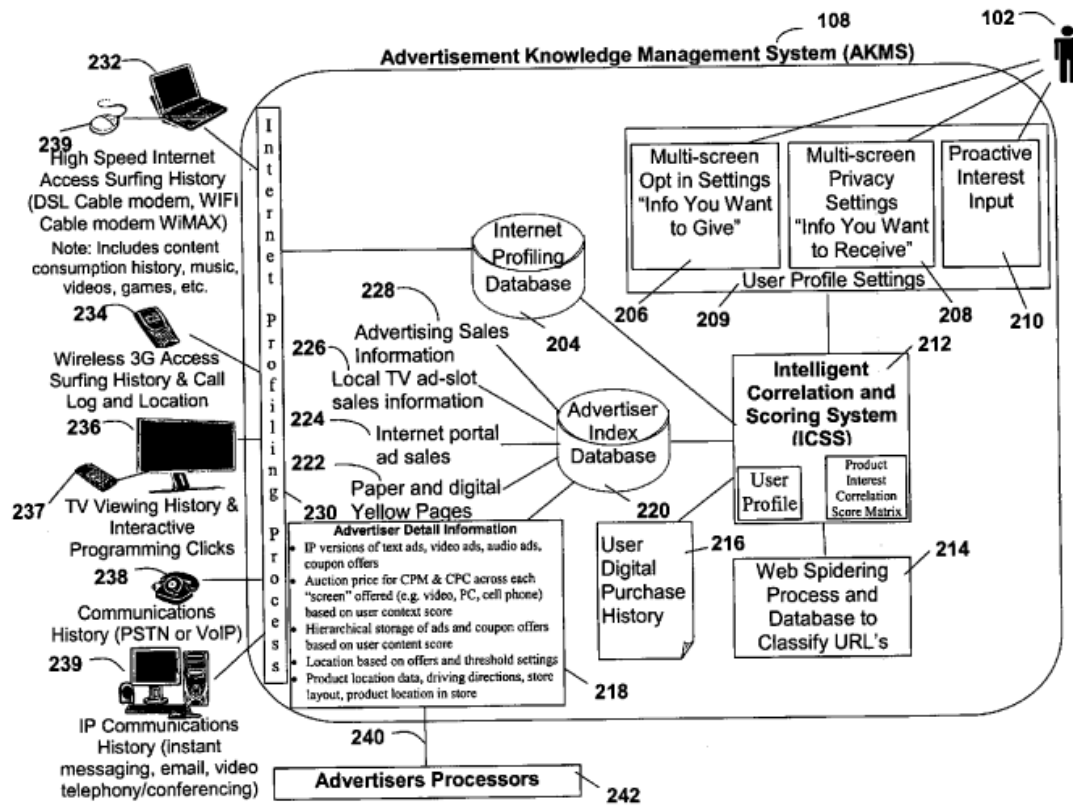
*Supra*, §III.A.1.

**(b) Grannan**

Grannan explains that “[t]argeted advertising selects an advertisement and sends the advertisement to selected individuals who are targeted to receive the advertisement,” so that “only those individuals selected by an advertiser receive the targeted advertisement in hope that the targeted recipients will be more responsive on a per capita basis than a general broadcast population.” VLI-1006, [0004], VLI-1003, ¶59. As a result, “[a]dvertisers can potentially save advertising dollars by selecting who will receive their advertisements rather than indiscriminately broadcasting their advertisements to a general population of recipients.” VLI-1006, [0004].

Grannan describes an advertising knowledge management system (AKMS) that acts “as an intermediary between the subscriber 102 and a host of providers including advertisers, content companies and application service providers.” VLI-1006, [0061], VLI-1003, ¶59. AKMS “provides targeted advertisements to subscribers using modalities including but not limited to TV commercials, banner advertisements in web browsers, multimedia IP based advertisements via web

browser plug-ins such as flash, instant messaging, multimedia messaging service (MMS) and short messaging service (SMS) messages sent to a cellular telephones.” VLI-1006, [0055].



VLI-1006, FIG. 1.

AKMS “monitors and compiles a subscriber's event data including but not limited to current session and the device characteristics of the access device 104 being used to access IP-based services over an IP network 106, along with previous usage history to assist service providers and advertisers in evaluating the potential appeal of their services and advertisements to the particular subscriber.”

VLI-1006, [0061]. The “subscriber event data” can include “selecting a television station, selecting [an] interactive television menu option, selecting content for an internet protocol (IP) access device, accessing a resource indicated by a uniform resource indicator (URI), browsing a web site, creating a user profile, carrying out a digital purchase transaction, internet chatting, internet blogging, placing a telephone call, sending an instant message, receiving an instant message, receiving an email and sending an electronic mail message.” VLI-1006, [0021]. This breadth enables targeting “advertising to consumers across all access devices and mediums.” VLI-1006, [0054]. AKMS can obtain “product interest information for each subscriber” using “subscriber via single sign-on (SSO) credentials” and by “receiving subscriber event data indicating subscriber surfing history from independent network service providers, including wireless 3G cellular, DSL, ..., and IPTV.” VLI-1006, [0085]-[0086].

Using AKMS, “[a]dvertisers can place advertisements in multiple media and formats, including text only, audio, HTML, and video that can be rendered to multiple access devices used by the subscriber.” VLI-1006, [0074]. For example, when “the subscriber selecting ‘Travel Channel’ to watch on the IPTV service,” and the “channel is broadcasting a show on the ruins of Rome,” that “information is communicated to AKMS.” VLI-1006, [0090]. AKMS can further review “historic behavior 412 of the subscriber relative to the subject—in this case traveling,”

e.g., “did the subscriber recently shop for tickets or hotels on the web or via the phone?” VLI-1006, [0094]. As a result, the “subscriber's history of use may have resulted in a high product category score for something totally unrelated to the ‘Travel Channel,’ for which an advertiser is willing to pay an acceptable price for delivering the advertisement in a format that the subscriber's current access device characteristics 402 are best suited for.” VLI-1006, [0094].

Using this information, AKMS determines whether “there [is] a high bidder who wants to deliver an advertisement well suited for the current access device.” VLI-1006, [0095]; VLI-1003, ¶62. AKMS then selects “which advertisement from which advertiser to place and in which format to send the advertisement to the subscriber access device (and on which access device) within the commercial spot (advertisement window) during the show or otherwise,” which can include “automated negotiation with advertisers in real time (or more likely a software agent defining bid rules and criteria for approving the sale of the advertisement) to dynamically negotiate auction bids for one advertiser or between two competing advertisers bidding against each other, etc.” VLI-1006, [0096].

The selected “advertisement is then presented.” VLI-1006, [0097], VLI-1003, ¶63. Further, “[a]ny interaction 422 resulting from the advertisement is captured and stored.” *Id.*

(c) **Burdick-Grannan Combination**

Burdick describes a “method of facilitating trading of advertising” where an exchange receives “an ask from a publisher broker for advertisement space on a webpage” and “a bid from an advertiser broker for the advertisement space,” pairs “the ask with the bid,” and places “appropriate advertisements” on “the page that is returned to the user.” VLI-1005, Abstract, [0006]; VLI-1003, ¶64. The advertiser broker uses “whatever user data has been provided from [the] audience data brokers they are licensing from, and posts corresponding bids.” VLI-1005, [0006].

An “audience data broker 210 is an aggregator of user data providers,” and a “user data provider is any entity that maintains any partial information that can be referred back to an individual user (such as one of users 214, discussed below) for advertising purposes.” VLI-1005, [0026]. In Burdick, “user data may comprise demographic, psychographic, and behavioral information,” e.g., “age, gender, wealth index, interests, shopping habits, etc.,” but “are not limited to any specific type of user data.” VLI-1005, [0026].

Further, Burdick explains that an advertiser broker “can base its bids on any targeting attributes provided by audience data broker 210,” and the “exchange 212 could require a linear value function, and advertisers 206 would specify a base bid and a bid increment for each attribute value.” VLI-1005, [0036], [0043]. Therefore, since bid amounts increase if more relevant attribute values are present, a

POSITA would have found it desirable to enhance Burdick's system by increasing the number of attributes available to Burdick's system for targeting advertisements. Indeed, increasing the number of attributes improves the targeting of the advertisements, thereby making the advertisements more effective and allowing the publishers to receive higher fees from advertisers. VLI-1003, ¶66.

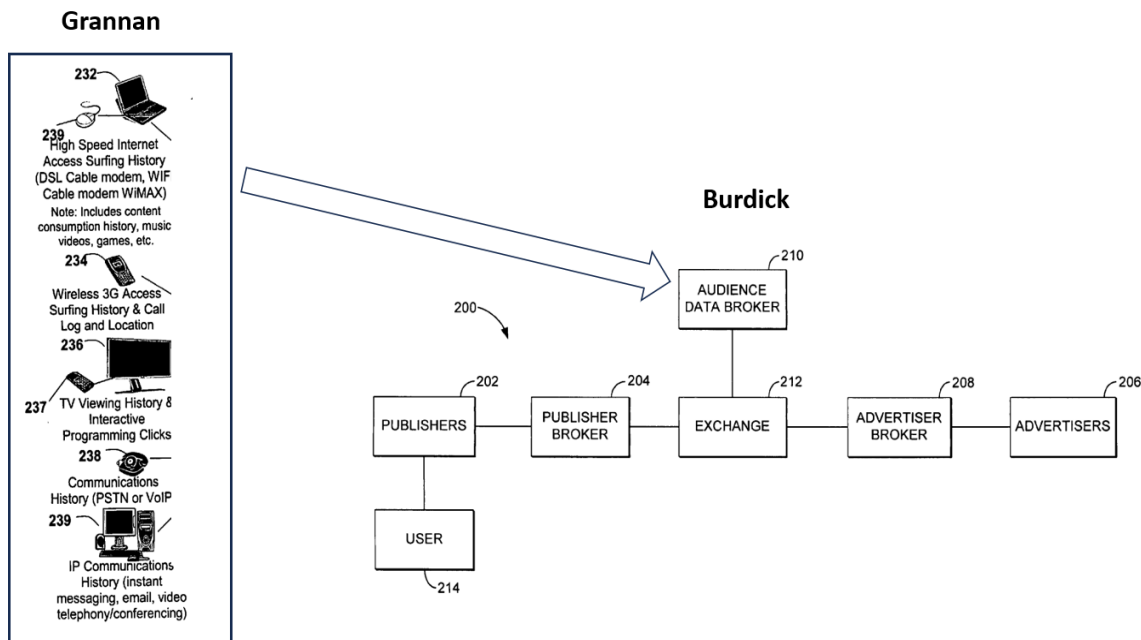
In seeking to enhance Burdick's system, a POSITA would have found Grannan, which teaches additional attributes for use in targeting advertisements. Since Burdick provides only non-limiting examples of user data, a POSITA would have naturally looked to related prior art, such as Grannan, that offers additional details. VLI-1005, [0026]; VLI-1003, ¶67. Grannan complements Burdick's attributes of "age, gender, wealth index, interests, shopping habits, etc." with additional attributes such as "selecting a television station, selecting [an] interactive television menu option, selecting content for an internet protocol (IP) access device, accessing a resource indicated by a uniform resource indicator (URI), browsing a web site, creating a user profile, carrying out a digital purchase transaction, internet chatting," etc. VLI-1005, [0026]; VLI-1006, [0021]; VLI-1003, ¶68. In fact, both Burdick and Grannan provide travel-related examples. VLI-1003, ¶68. A POSITA would have understood or found obvious that a user watching a show on the ruins of Rome indicates interest in travel to Rome (per Grannan) is much like buying a book on Bali (per Burdick). VLI-1005, [0045]; VLI-1006, [0093]; VLI-

1003, ¶68. Therefore, a POSITA would have understood or found obvious to use information about TV viewing activity (per Grannan) as part of a targeting profile (per Burdick), thereby increasing the number of factors considered in the bidding process, which allows an advertiser to target advertisements more precisely. *Id.*

A POSITA would have found relevant solutions within Grannan and would have expected success in incorporating Grannan's teachings. VLI-1003, ¶69. For instance, as described above, Burdick's audience data brokers are "aggregator[s] of user data providers," and a "user data provider is any entity that maintains any partial information that can be referred back to an individual user (such as one of users 214, discussed below) for advertising purposes." VLI-1005, [0026]. A POSITA would have understood that Grannan's subscriber access devices, e.g., "a cell phone, personal digital assistant (PDA), [laptop] computer, stationary personal computer, IPTV remote control, web tablet, laptop computer, pocket PC, a television set capable of receiving IP based video services and mobile IP device," are examples of Burdick's "any entity" that "maintains any partial information that can be referred back to an individual user." VLI-1005, [0026]; VLI-1006, [0022]; VLI-1003, ¶69.

Therefore, the Burdick-Grannan combination (BGC) includes users, publishers, publisher broker(s), an exchange, audience data broker(s), advertiser broker(s)

and advertisers, per Burdick. VLI-1003, ¶70; §III.A.1. Audience data brokers collect user data from “any entity” that “maintains any partial information that can be referred back to an individual user” (per Burdick), which includes, e.g., data from “IPTV receiver[s],” “a television set capable of receiving IP based video services,” etc. (per Grannan). VLI-1005, [0026]; VLI-1006, [0030]; VLI-1003, ¶70.



VLI-1005, FIG. 2 (modified, annotated); VLI-1006, FIG. 2 (modified, annotated);

VLI-1003, ¶70.

In BGC, when users access content (e.g., “selecting a television station”) using a first access device (e.g., “a television set capable of receiving IP based video services” (per Grannan), the access is monitored and collected by an audience data

broker 210 (per Burdick). VLI-1005, [0006]; VLI-1006, [0020]-[0021], [0030]; VLI-1003, ¶71. Subsequently, when a “user requests a page impression from a publisher who is represented by a publisher broker,” per Burdick, the audience data broker 210 provides the profile data to advertiser brokers 208 via the exchange 212. VLI-1005, [0006], [0037]; VLI-1003, ¶71. The advertiser brokers “base [their] bids on any targeting attributes provided by audience data broker.” VLI-1005, [0036]; VLI-1003, ¶71.

Collecting user profile data from user data providers (per Burdick), including data from access devices (per Grannan) would have required only routine programming knowledge well within the skill of a POSITA prior to the earliest effective filing date. VLI-1005, [0026]; VLI-1006, [0020], [0030]; VLI-1003, ¶73. Indeed, the change would have amounted to nothing more than the use of a known technique (collecting user-specific data from user access devices as taught by Grannan) to improve similar techniques (improve the quality and quantity of data collected by Burdick’s audience data brokers) in a similar way according to known methods (known ways to collect user-specific data from entities) to yield predictable results (an improved Burdick system having more robust and detailed user profiles to improve the targeting of advertisements). *KSR v. Teleflex*, 550 U.S. 398, 417 (2007); VLI-1003, ¶73.

Furthermore, the elements of the resulting combination would each perform

functions they had been known to perform prior to the combination—the audience data broker collects data from various sources configured to provide such data (per Burdick) and the data sources continue to provide user data (per Burdick and Grannan). VLI-1003, ¶74. Accordingly, a POSITA would have naturally expected success when incorporating Grannan’s teachings into Burdick. *Id.*

## 2. Analysis

### *[1.1]*

To the extent the preamble is limiting, BGC renders it obvious. *Supra*, §III.A.2[1.1]; VLI-1003, §VI.B[1.1].<sup>7</sup>

.

### *[1.2]*

BGC renders [1.2] obvious. VLI-1003, ¶¶61, 65-68, 71-72, §§III.A, VI.B[1.2].

In accordance with Grannan’s teachings, the BGC system “monitor[s] the access devices and send[s] targeted advertisements to the access devices of subscribers.” VLI-1006, [0054]. Since Grannan describes “subscribers” (plural), a POSITA would have understood that these operations are performed by the BGC

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<sup>7</sup> The reference “§VI.B[1.1]” refers to element [1.1] in the table in §VI.B. Other claim elements are referenced similarly.

system ***for each of a multitude of different electronic visitors***. VLI-1003, ¶71.

In accordance with Grannan's AKMS teachings, the audience data broker 210 of the BGC system "monitors and compiles a subscriber's event data," where subscriber event data includes "selecting a television station." VLI-1006, [0021], [0061]; §III.B.1(b)-(c). Since "media property" in the '146 patent includes "a web site, TV channel, radio show, or the like, using a computer, a mobile device, a TV set, a TV set top box, or any other device," a POSITA would have understood that Grannan's "TV channel" is ***a first media property***. VLI-1001, 3:24-26; VLI-1003, ¶¶71-72. Therefore, BGC discloses ***electronic visitors to a first media property***, e.g., a TV channel. VLI-1006, [0021]; VLI-1003, ¶¶61, 68, 71-72.

Further, as taught by Grannan, the BGC system monitors "subscribers" (plural), and, therefore, a POSITA would have found it obvious that steps (a)-(c) (i.e., [1.3]-[1.5]) would be performed by the BGC system separately for each of a multitude of visitors to, e.g., Grannan's TV channel, with the monitored information collected to build up a profile for the visitor for the purpose of enriching ad requests presented to the visitor at a later time as taught by both Grannan and Burdick. VLI-1005, [0035]; VLI-1003, ¶71. Indeed, a POSITA would have found it obvious, in at least some implementations of BGC, to have Burdick's audience data broker 210 store profiles for individual users that each include a collection of attributes specific to that user that are collected as a result of the user previously

visiting different media properties, including (per Grannan) TV channels and (per Burdick and Grannan) websites. VLI-1005, [0026]-[0027], [0029], [0046]-[0047]; VLI-1006, [0021]; VLI-1003, ¶¶65-68, 71. Such a configuration would have been obvious to thereby enable BGC to better tailor its advertisements to each individual user based on that user's particular combination of attributes and prior consumption of media. VLI-1003, ¶68.

**[1.3.i]**

BGC renders [1.3.i] obvious. VLI-1003, ¶¶28, 32, 34, 65, 67-68, 71-72, §VI.B[1.3.i]. *Supra*, §III.A.2[1.3.i]. Notably, in one example, the ***first media property*** recited in [1.2] corresponds to Grannan's TV channel while the ***second media property*** recited in [1.3.i] corresponds to Burdick's publisher website. VLI-1003, ¶¶28, 32, 34, 65, 67-68, 71-72.

**[1.3.ii]**

BGC renders [1.3.ii] obvious. VLI-1003, §VI.B[1.3.ii]. *Supra*, §III.A.2[1.3.ii].

**[1.3.iii]**

BGC renders [1.3.iii] obvious. VLI-1003, ¶¶49-50, §VI.B[1.3.iii]. *Supra*, §III.A.2[1.3.iii].

Burdick discloses displaying an ***advertisement to the electronic visitor when the electronic visitor visits the second media property***. *Supra*, III.A.2[1.3.iii].

Directing the bid occurs at *a time after the electronic visitor visits the first media property* (e.g., a TV station) since Grannan teaches that an advertisement is selected based on previously-collected event data. VLI-1006, [0034] (“storing subscriber event data from at least a first access device and a second access device for use in calculating the plurality of correlation scores in the plurality of product categories”), [0061] (“AKMS 108 monitors and compiles a subscriber's event data including but not limited to current session and the device characteristics of the access device 104 being used to access IP-based services over an IP network 106, along with previous usage history to assist service providers and advertisers in evaluating the potential appeal of their services and advertisements to the particular subscriber”); VLI-1003, ¶49.

Burdick similarly teaches that “that the best way to target vacation ads is around users who have a history of purchasing vacations...and users who perform searches related to travel.” VLI-1005, [0044]; VLI-1003, ¶49. A POSITA would have understood from the word “history” that the searches related to travel occur before placement of the ad on the second media property. VLI-1003, ¶49. Further, since Burdick expressly discloses targeting vacation ads to users who have a history of purchasing vacations and users who perform searches related to travel, a POSITA would have found it obvious that such prior searches and purchasing

could, in some implementations, be done on a vacation website because such websites were known to provide these services to visitors (*after the electronic visitor visits the first media property*). VLI-1003, ¶49. 50 (citing VLI-1020, VLI-1021, VLI-1022).

**[1.3.iv]**

BGC renders [1.3.iv] obvious. VLI-1003, §VI.B[1.3.iv]. *Supra*, §III.A.2[1.3.iv].

**[1.4.i]**

BGC renders [1.4] obvious. VLI-1003, §VI.B[1.4.i]. *Supra*, §III.A.2[1.4.i].

**[1.4.ii]**

BGC renders [1.4.ii] obvious. VLI-1003, ¶¶35-36, 60, 61, §VI.B[1.4.ii].

Per Burdick and Grannan, at least some of the profile attributes are received by the advertiser broker 208 (*computer system*) as a result of the *electronic visitor visiting the first media property*. VLI-1003, ¶¶35-36, 60, 71. For example, Grannan's AKMS "monitors and compiles a subscriber's event data," where subscriber event data includes "selecting a television station." VLI-1006, [0021], [0061]; §III.B.1(b)-(c). Such access is monitored and collected by an audience data broker 210 (per Burdick). VLI-1005, [0006]; VLI-1003, ¶¶70-71; §III.B.1(c). Subsequently, when a "user requests a page impression from a publisher who is represented by a publisher broker," per Burdick, the audience data broker 210 provides

the profile data to advertiser brokers 208 (**computer server**) via the exchange 212. VLI-1005, [0006], [0037]. The advertiser brokers “base [their] bids on any targeting attributes provided by audience data broker.” VLI-1005, [0036].

Therefore, in BGC, **profile attributes** (e.g., selecting a television station) are received by the advertiser broker 208 (**computer system**) (e.g., during an auction mediated by the exchange) as a result of the electronic visitor visiting the **first media property** (e.g., television station). VLI-1005, [0006], [0028], [0033]; VLI-1006, [0021], [0061]; VLI-1003, ¶¶35-36, 60, 61.

**[1.5]**

BGC renders [1.5] obvious. VLI-1003, §VI.B[1.5]. *Supra*, §III.A.2[1.5].

**[2]**

BGC renders [2] obvious. VLI-1003, §VI.B[2]. *Supra*, §III.A.2[2].

**[5]**

BCG renders [5] obvious. VLI-1003, §VI.B[5]. *Supra*, §III.A.2[5].

**[8]**

BGC renders [8] obvious. VLI-1003, §VI.B[8]. *Supra*, §III.A.2[8].

**[9]**

BGC renders [9] obvious. VLI-1003, §VI.B[9]. *Supra*, §III.A.2[9].

**[15]**

BGC renders [1.3] obvious. VLI-1003, ¶¶44, 47, 61, 72, §VI.B[15].

In BGC, the exchange (*server computer*<sup>8</sup>) controls ad space on a website. VLI-1003, ¶¶44-45, *supra* §III.B.2[1.3.i]. For example, Burdick explains that the “exchange 212 proxies a display of the ads on the publisher website (*second media property*).” VLI-1005, [0037]. Additionally, Burdick explains that once the exchange 212 selects a winning bidder, the “[e]xchange 212 passes the ad source location and transaction identifier back” to the browser. VLI-1005, [0047]; VLI-1003, ¶¶44, 47.

The first media property is a television station. *Supra*, §III.B.2[1.2].

A POSITA would have understood that a website and a television station are different mediums. VLI-1003, ¶¶61, 72. For example, the ’146 patent lists “web sites” and “TV channels” as alternative types of media properties. VLI-1001, 3:24-26.

**[16]**

*Supra*, §III.A.2[16]; VLI-1003, §VI.B[16].

**[17]**

*Supra*, §III.A.2[17]; VLI-1003, §VI.B[17].

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<sup>8</sup> “Server computer” lacks antecedent basis and is interpreted as the “third-party server computer.” VLI-1003, ¶45, 55-57.

**[18]**

*Supra*, §III.A.2[2]; VLI-1003, §VI.B[18].

**[21]**

*Supra*, §III.A.2[21]; VLI-1003, §VI.B[21].

**[22]**

*Supra*, §III.A.2[2]; VLI-1003, §VI.B[22].

#### **IV. TRIAL SHOULD BE INSTITUTED**

Petitioner believes that discretionary denial is unwarranted, and yet, Petitioner intends to utilize the bifurcated briefing process contemplated by the March 26, 2025, Stewart Memorandum to rebut contentions if offered by Patent Owner to the contrary. VLI-1013.

#### **V. CONCLUSION AND FEES**

The Challenged Claims are unpatentable. Petitioner authorizes charge of fees to Deposit Account 06-1050.

#### **VI. MANDATORY NOTICES UNDER 37 C.F.R § 42.8(a)(1)**

##### **A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)**

Viant Technology LLC, LiveIntent, Inc., Zeta Global Holdings Corp., and Zeta Global Corp. are the real parties-in-interest.

##### **B. Related Matters Under 37 C.F.R. § 42.8(b)(2)**

The '146 Patent is the subject of civil actions:

- *AlmondNet, Inc. et al v. Connatix Native Exchange, Inc.*, 1-24-cv-01296 (DDE), filed November 27, 2024
- *AlmondNet, Inc. et al v. LiveIntent, Inc.*, 1-24-cv-00831 (DDE), filed July 18, 2024
- *AlmondNet, Inc. et al v. LinkedIn Corporation*, 1-23-cv-01373 (DDE), filed December 1, 2023
- *AlmondNet, Inc. et al v. Freewheel Media, Inc. et al.*, 1-23-cv-00220 (DDE), filed March 1, 2023
- *AlmondNet, Inc. et al v. Viant Technology Inc. et al.*, 1-23-cv-00174 (DDE), filed February 16, 2023
- *AlmondNet, Inc. et al v. Meta Platforms, Inc.*, 4-23-cv-00438 (NDCA), filed January 31, 2023
- *AlmondNet, Inc., et al. v. Samsung Electronics Co., Ltd., et al.*, 4-22-cv-07515 (NDCA), filed November 30, 2022
- *AlmondNet, Inc. v. Roku, Inc.*, 1-22-cv-01540 (DDE), filed November 28, 2022
- *AlmondNet, Inc. et al v. Amazon.com, Inc. et al.*, 6-22-cv-01204 (WDTX), filed November 18, 2022
- *AlmondNet, Inc. et al v. Meta Platforms, Inc. f/k/a Facebook, Inc.*, 6-

22-cv-01205 (WDTX), filed November 18, 2022

- *AlmondNet, Inc. et al v. Microsoft Corporation et al.*, 6-22-cv-01206 (WDTX), filed November 18, 2022
- *Meta Platforms, Inc. f/k/a Facebook, Inc. v. AlmondNet, Inc. et al.*, IPR2022-01480 (PTAB), filed September 1, 2022
- *AlmondNet, Inc. et al v. Facebook, Inc.*, 6-21-cv-00896 (WDTX), filed August 27, 2021
- *AlmondNet, Inc. et al v. Microsoft Corporation*, 6-21-cv-00897 (WDTX), filed August 27, 2021
- *AlmondNet, Inc. et al v. Amazon.com, Inc. et al.*, 6-21-cv-00898 (WDTX), filed August 27, 2021
- *AlmondNet, Inc. et al v. Samsung Electronics Co., Ltd. et al.*, 6-21-cv-00891 (WDTX), filed August 26, 2021
- *AlmondNet, Inc. v. Roku, Inc.*, 6-21-cv-00876 (WDTX), filed August 20, 2021
- *AlmondNet, Inc. et al v. Oath Holdings Inc.*, 1-19-cv-00247 (DDE), filed February 6, 2019
- *Yahoo! Inc. v. ALMONDNET, INC.*, CBM2017-00056 (PTAB), filed June 2, 2017

- *AlmondNet, Inc. et al v. Yahoo! Inc.*, 1-16-cv-01557 (EDNY), filed March 30, 2016

Petitioners are not aware of any other disclaimers, reexamination certificates, or current IPR petitions addressing the '146 Patent.

**C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)**

Petitioner provides the following designation of counsel.

| Lead Counsel                                                                                                                                                                                                                                     | Backup counsel                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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**D. Service Information**

Please address all correspondence and service to the address listed above.

Petitioner consents to electronic service by email at [IPR00035-0033IP1@fr.com](mailto:IPR00035-0033IP1@fr.com)

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Respectfully submitted,

Dated 6-20-25

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**CERTIFICATION UNDER 37 CFR § 42.24**

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for *Inter Partes* Review totals 13,982 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated 6-20-25

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**CERTIFICATE OF SERVICE**

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on June 20, 2025, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided by Federal Express, to the Patent Owner, by serving the correspondence address of record as follows:

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