UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FREEWHEEL MEDIA, INC.,
Petitioner,

v.

ALMONDNET, INC.,
Patent Owner.

Patent No. 7,861,260
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Title: TARGETED TELEVISION ADVERTISEMENTS BASED ON ONLINE BEHAVIOR

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DECLARATION OF DAVID B. LETT IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S. PAT. NO. 7,861,260

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3. Independent Claim 26: "A method implemented using computer equipment, the method comprising: (a) with the computer equipment, automatically electronically delivering electronic user profile information to a computer system that includes a server that electronically associates, for each of a multitude of users, an online access IP address of the user and a set-top box IP address of that user based on a common IP address, (b) wherein

network traffic is routed via the common IP address for both an online user interface device and a set-top box of that user, (c) wherein delivered user profile information of a first user of the multitude of users (i) is derived from online activity of the first user from a first online user interface device via a first online access IP address and (ii) includes identification of the first online access IP address and the time and date of the online activity, and (d) as a result of which delivery, a first television advertisement can be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box IP address that the server associates with the first online access IP address." 148

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presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box identifier that the server associates with the second online user interface device identifier of the second user's online user interface device, for selective presentation via that set-top box, and (g) wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively." 218

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

I. INTRODUCTION

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

2. I have been asked to provide a declaration with my opinions regarding certain matters pertaining to the patentability of U.S. Patent No. 7,861,260 ("the '260 Patent"). I understand that the '260 Patent is owned by AlmondNet, Inc. ("Patent Owner").

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

II. PROFESSIONAL BACKGROUND AND QUALIFICATIONS

4. I am a technical consultant and product development industry veteran with expertise in electronics, software, hardware, video, audio, and data communications, having led product development organizations in cable, satellite, consumer electronics, asset tracking, remote tank logistics, and alarm industries. My current curriculum vitae is attached as Exhibit 1003 and some highlights follow.

5. I earned my B.S. in Electrical Engineering (1982) with high honors from the University of Tennessee in Knoxville, Tennessee. I also attended the Georgia Institute of Technology from 1986 to 1987, completing 40% of the required degree hours for the M.S. Electrical Engineering program.

6. From 1982 to 1985, I worked at Scientific Atlanta as an Electrical Engineer designing video, audio, and data communications equipment for the cable television industry. I designed software and hardware including addressable data transmitters, video sync suppression scramblers, transaction format converters, and data channel monitors for addressable Cable Television systems and Set Top Boxes.

7. From 1983 to 1985, while working at Scientific Atlanta, I also worked as an Assistant Professor at DeVry Institute of Technology, teaching courses in electronics and microprocessor hardware/software.

8. From 1985 to 1990, I worked at Wegener Communications as a Senior Electrical Engineer, designing satellite communications equipment including forward error correction (FEC) coding systems, PSK modems, and analog control systems for RF modulators and PSK demodulators. I was promoted to the Hardware Engineering Manager, where I managed product development of video, audio, and data satellite receivers, modulators, graphics display systems, DSP-based compandors, FSK and PSK satellite modems, multiplexers, forward error correction

(FEC) codecs, RF upconverters and downconverters, and baseband analog and digital processing components.

9. In 1990, I returned to Scientific Atlanta, which was acquired by Cisco in 2006. I worked as Engineering Manager running the set top box engineering group where I was promoted to Director and Vice President during my tenure until 2011. I led the design of many cable set top boxes and systems through the evolution of analog video, addressability, downloadable software, electronic program guides, digital video, VOD, software applications, high-definition TV, DVR, DOCSIS, full spectrum tuners, and multiroom DVR. These systems implemented various technologies including DOCSIS 1/2/3 and hybrid gateways, 802.11, IPTV, DVR, cable modems, ADSL, VDSL, DVB-T/C/S, bootloaders, factory diagnostics, application frameworks, Nagra, DRMs, conditional access, secure microprocessors, device management, Android, Adobe Flash, Linux, DVD play/record, MPEG-4, MPEG-2, H.264, NTSC, PAL, DAVIC, MoCA, high-performance CPUs, cablecards, network processors, HDMI, multiple video/audio display interfaces, 2D/3D graphics, multiple RF tuners, and full spectrum tuners.

10. From 2011 to 2016, I worked for EchoStar Technologies, which served as the product development organization for sister company DISH Network. I served as Vice President of Engineering and was the Head of the Atlanta research and development center. I led the development of satellite set top boxes, consumer

electronic equipment, and a home automation and security system. Technologies used included video/audio, IoT, H.265, HEVC, 3D, Satellite, wireless, MoCA, transcoding, embedded C Linux applications, mobile applications (IOS and Android), SaaS, web applications (JavaScript, HTML), BSS/OSS, AWS cloud storage, 2-way video/audio streaming, authentication, and VoIP.

11. In 2016, I started an independent consulting business in technology and intellectual property projects. I have consulted in various technology areas and industries including consumer electronics, cable, satellite, television, and cryptocurrency.

12. From 2019 to 2022, I worked as Chief Technology Officer for Telular, an Ametek company. I was responsible for the development of Industrial Internet of Things (IIoT) recurring revenue solutions, combining wireless technologies, purpose-built hardware, and SaaS in the commercial telematics, security and home automation markets and sold under the SkyBitz and Telguard brands.

13. My record of professional service includes awards on products I designed and developed from several organizations in my field of expertise, including Best of Show, Technology Emmy, and Best of Innovations.

14. I am a named inventor on at least 87 issued patents and published patent applications corresponding to the areas of my professional work. The patents and

published applications involving television distribution systems, STBs, EPGs, Video on Demand (VOD), and content delivery systems include:

- U.S. Patent No. 9,615,139 titled "Determining Device That Performs Processing of Output Pictures"
- U.S. Patent No. 8,549,567 titled "Media Content Sharing Over a Home Network"
- U.S. Patent No. 8,161,388 titled "Interactive Discovery of Display Device Characteristics"
- U.S. Patent Nos. 8,120,924, 7,240,217, 6,785,817, 6,564,324, 6,212,278 and 5,440,632 titled "Reprogrammable subscriber terminal"
- U.S. Patent No. 7,908,625 titled "Networked Multimedia System"
- U.S. Patent Nos. 7,861,272 and 7,849,486 titled "Networked subscriber television distribution"
- U.S. Patent Nos. 7,774,820 and 7,069,578 titled "Settop cable television control device and method including bootloader software and code version table for maintaining and updating settop receiver operating system software"
- U.S. Patent No. 5,771,064 titled "Home communications terminal having an applications module"
- U.S. Patent No. 5,715,515 titled "Method and apparatus for downloading on-screen graphics and captions to a television terminal"
- U.S. Patent No. 5,657,414 titled "Auxiliary device control for a subscriber terminal"
- U.S. Patent No. 5,592,551 titled "Method and apparatus for providing interactive electronic programming guide"

- U.S. Patent No. 5,539,822 titled "System and Method for Subscriber Interactivity in a Television System"
- U.S. Patent No. 5,367,571 titled "Subscriber terminal with plug in expansion card"
- U.S. Patent No. 5,357,276 titled "Method of Providing Video On Demand with VCR Like Functions"
- U.S. Patent Application Publication No. 2004/0133911titled "Subscriber network in a satellite system"
- U.S. Patent Application Publication Nos. 2004/0068753 and 2008/0072272 titled "Video Transmission Systems and Methods for a Home Network"
- U.S. Patent Application Publication No. 2003/0192047 titled "Exporting data from a digital home communication terminal to a client device"

15. I have a general understanding of the U.S. patent prosecution process and of the novelty and non-obviousness requirements for patentability.

16. I believe that my extensive industry experience and educational background qualify me as an expert in the relevant field of data communication methods and topologies, including those methods and topologies specifically used for targeted advertising. I am knowledgeable of the relevant skill set that would have been possessed by a hypothetical person of ordinary skill in the art ("POSA") at the time of the claimed invention of the '260 Patent, which I have treated as April 17, 2007 for purposes of this proceeding.

III. MATERIALS REVIEWED

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

IV. UNDERSTANDING OF APPLICABLE LEGAL STANDARDS

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

19. I understand that, in this *inter partes* review (IPR), Petitioner is challenging the patentability of the claims of the ’260 Patent. I understand that Petitioner has the burden of proving that each challenged claim is unpatentable by a preponderance of the evidence.

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

21. I understand that a patent claim is unpatentable if, at the time of the invention, it would have been obvious to a POSA to combine the teachings of the prior art to yield the patent claim. I also understand that it is not required (although

it is acceptable) that each element/limitation of a patent claim be found in a single reference in order to find a patent claim obvious. For a patent claim to be found obvious, all the elements/limitations of the patent claim may be found in a combination of references at which a person of ordinary skill in the art would have been reasonably expected to arrive. I understand that a proper analysis of whether an invention is unpatentable for obviousness includes a review of the scope and content of the prior art, the differences between the patent claims at issue and the prior art, the level of ordinary skill in the field of the invention at the time of the invention, and other objective considerations identified below.

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

23. I understand that a showing of obviousness requires some articulated reasoning with a rational underpinning to support the combination of the references.

I understand that in consideration of the issue of obviousness it is important to identify whether a reason existed at the time of the invention that would have led a POSA to combine elements of the references in a way that yields the claimed invention.

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

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

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

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

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

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

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

(G) some teaching, suggestion, or motivation in the prior art that would have led a person of ordinary skill in the art to modify a prior art reference or

combine multiple prior art references or teachings to arrive at the claimed invention.

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

(A) the commercial success of the claimed invention;

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

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

(D) copying of the claimed invention;

(E) unexpected results of the claimed invention;

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

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

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

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

28. I further understand that a proper obviousness analysis focuses on what was known or obvious to a person of ordinary skill in the art, not just the patentee. Accordingly, it is my understanding that any need or problem known in the field at the time of invention and addressed by the patent can provide a reason for combining the limitations in the manner claimed.

V. OVERVIEW OF THE '260 PATENT

29. The '260 Patent describes "a method for delivering targeted television advertisements based on online behavior," where "[u]sing user profile information derived from online activity from one of the online access IP addresses, a television advertisement is selected . . . ." Ex. 1001, Abstract, 7:59-65; see also 1:7-11. The '260 Patent does not limit a "user" to a single individual, but rather broadly defines the term as "one or more persons receiving online access or television services at a delivery end-point within a household, office, business, or other site or establishment served by an online access provider or television service provider." Ex. 1001, 8:31-36. The user—which may be multiple individuals—may receive the online access

or television services in various types of locations, such as in a home via a home network or in a business or other site, e.g., via a wireless hotspot or other access point providing online access. Ex. 1001, 8:31-53, 17:15-22.

30. The ’260 Patent admits that its method is implemented using a variety of well-known devices and technologies. See, e.g., Ex. 1001, 1:12-6:40. For example, the ’260 Patent describes devices and technologies such as a set-top box (STB) (“a device that connects a television and a signal source”), a central ad server (CAS) (“a computer server that manages delivery of online advertisements to visitors of online sites”), and profiles or partial profiles that “can contain any quantity of profile information, such as, in one example, just an online access IP address used by a person at the time his profile was collected and the identity of the profile provided,”) as part of the background for the alleged invention. *Id*., 1:29-53, 2:61-3:3, 4:40-61, 5:46-67.

31. Although the ’260 Patent broadly describes “a method for delivering targeted television advertisements based on online behavior,” much of the specification specifically relates to obvious methods of associating internet protocol (IP) addresses of user devices and/or associating identifiers with user devices to facilitate delivery of said targeted television advertisements. See, e.g., Ex. 1001, 8:54-9:8, 9:35-10:45, 12:27-40, 14:62-15:43. For example, the ’260 Patent describes that known devices, such as a computer (i.e. “user online access device”)

and a STB, may both correspond to a user and connect to the Internet via a common modem. Ex. 1001, 1:29-53, 9:28-32, 9:35-50, 10:16-29.

32. The ’260 Patent describes associating the IP address of a user online access device with the IP address of a STB based on both devices having a common IP address based on a shared/common modem. Ex. 1001, 1:29-53, 2:61-3:3, 9:28-32, 9:35-50, 10:16-29, 12:54-13:15. The ’260 Patent explains that when a user online access device accesses the Internet through a modem, a dynamic IP address (i.e. “online access IP address”) “is allocated to the user’s modem 32 for online access, typically through DHCP.” Ex. 1001, 9:35-39. The online access IP address is then reported to a known device, such as a CAS, that manages delivery of online ads. Ex. 1001, 9:52-64. The ’260 Patent confirms in the background section of the specification that CASs, such as third-party ad servers, were known in the prior art. Ex. 1001, 4:40-61 (“Examples of third-party ad servers include DoubleClick’s DART for Publishers central ad server (also known as DFP) and DoubleClick’s DART for Advertisers central ad server (also known as DFA)”).

33. The ’260 Patent explains that “[w]hen the user’s STB 36 is used to access a web-based server (for accessing an online programming guide, for example, through the cable television transmission system or through a connection to the Internet)” the IP address of the STB is transmitted to the CAS as well. Ex. 1001, 10:20-24. Because the STB accesses the Internet through the same modem as the

user online access device, the CAS associates the STB's IP address "with the pseudonym previously associated with the user's modem 32," where the pseudonym was assigned to the user's online access IP address (i.e., modem IP address) when the user connected to the Internet via their online access device. Ex. 1001, 10:16-45.

34. The '260 Patent discusses utilizing the above-described associations to deliver targeted television advertisements to the user's STB based on user profiles. For example, indications of the user's online activity from a particular IP address can be electronically communicated to the CAS. Ex. 1001, 10:46-54. The '260 Patent describes that this, in turn, "can cause a television advertisement to be directed to the STB IP address that is associated with [the] online IP address" of the user. Ex. 1001, 10:54-57.

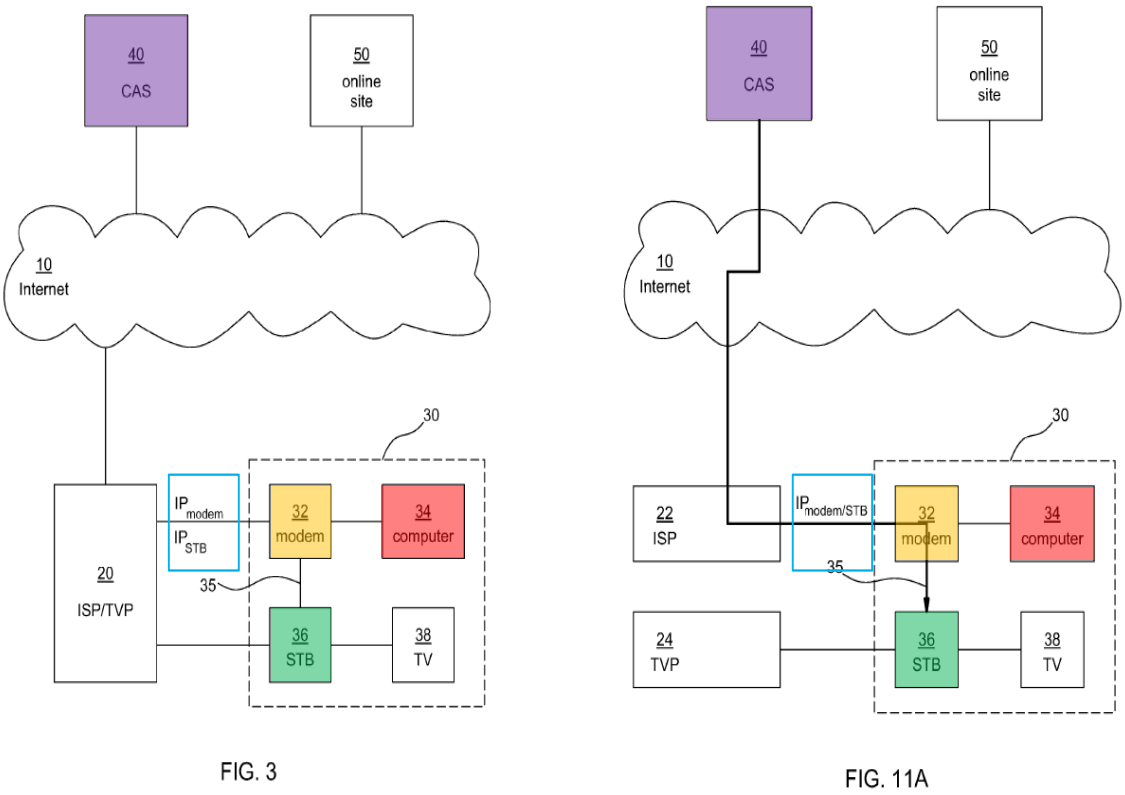
35. The '260 Patent explains that the targeted ads are "selected for delivery to the user's STB 36 based on the user's online behavior (e.g., merely accessing the online site 50, viewing a particular web page, performing a particular search, clicking on a particular link or ad, online shopping or purchases, or other activity). Information about observed online behavior (i.e., indications of online activity) or collected demographic information can be used by the CAS or by the profile provider to direct a targeted TV ad." Ex. 1001, 11:19-27. The user's online behavior can be gathered from profile providers that send electronic communications to the CAS

which contain "information derived from the interaction of the user with an online site." Ex. 1001, 11:36-47.

36. The '260 Patent further explains that, once an ad has been selected or requested, "the television advertisement can be transmitted to the user's STB in a variety of ways." Ex. 1001, 12:4-5. For example, the ad can be transmitted to the user directly from the CAS based on the CAS previously storing the ad, received by the CAS "from the accessed online site, from another online site, or from another ad server and stored on the CAS as part of the transmission request from the accessed online site, and then transmitted to the user's STB." Ex. 1001, 12:4-12, Fig. 6A. Additionally or alternatively, the ad "can be transmitted directly to the user's STB from the accessed online site" or "from another online site or ad server." Ex. 1001, 12:12-14, Figs. 6B-6C.

37. The '260 Patent describes its methods as being used in configurations where online access and television services are provided by a common provider, and in configurations where online access and television services are provided by different providers. See, e.g., Ex. 1001, 8:13-20. As shown in Figures 3 and 11A (below, annotated), the '260 Patent describes both configurations as including a CAS (**purple**), a modem (**yellow**), a computer (i.e., user online access device) (**red**), and a STB (**green**). Ex. 1001, Figs. 3, 11A, 9:9-34, 10:38-40, 12:44-48. In both configurations, the user online access device and the STB access the Internet through

the same modem and the modem IP address is shared with both devices (**blue**) as described above. *Id*. Nothing about this topology/system is new; nor does the ’260 Patent purport to provide any new hardware or connection within the overall system/topology. *Id.*; see also Ex. 1001, 1:12-6:40.



Ex. 1001, Figs. 3 and 11A (annotated)

38. As shown in the annotated figures above, the only structural difference between the two configurations is that the internet service provider (ISP) and television provider (TVP) are separate devices in the arrangement of Fig. 11A. Ex. 1001, Figs. 3, 11A, 8:13-20. The ’260 Patent explains that regardless of which configuration is used, the online access IP address is assigned to the modem as

described above, the STB obtains online access via the same IP address as the user's online access device, and user profile information is gathered based on the user's online activity. Ex. 1001, 12:39-13:15, 13:56-14:50. Even if the ISP and TVP are separate devices, said user profile information is used to deliver targeted television ads to the STB based on an association between the STB IP address and the modem/user online access IP address (i.e., a "common IP address") as described above. Ex. 1001, 12:36-43.

39. The '260 Patent also describes an example implementation of the methods described above where "the user's STB 36 can be assigned an identifier," that the CAS may place "on the STB the first time it is in contact with the STB and read or amend the identifier every time afterwards the STB and the CAS are in contact." Ex. 1001, 14:62-15:5. The '260 Patent explains that the identifiers can be used "[w]hen an online site 50 is accessed from the common IP address, [and] online site 50 requests that a television advertisement be transmitted to the STB having the common IP address," in order to identify whether the television advertisement was correctly directed. Ex. 1001, 15:23-33. The '260 Patent admits that "[s]uch an identifier is an analogy of a 'cookie' used by online servers to recognize visitors' computers." Ex. 1001, 15:5-7. Cookies were known in the prior art, as described in the background of the '260 Patent. Ex. 1001, 6:21-36.

40. In summary, the ’260 Patent claims a method of using well-known devices and technologies to gather user information of user online activity by obvious methods and subsequently use the gathered user information to deliver targeted ads to STBs, based on similarly obvious methods of associating IP addresses of devices used to perform the online activity and of the STB.

VI. PROSECUTION HISTORY

41. The ’260 Patent was filed as U.S. App. No. 11/736,544 (“the ’544 Application”) on April 17, 2007, as the first application in a larger patent family.

42. The Examiner issued the first Office Action in the ’544 Application on August 18, 2009. Ex. 1004, pp. 245-91. In the Office Action, the Examiner rejected all 51 pending claims on the grounds of non-statutory double patenting over claims in a co-pending patent application. *Id*., p. 247. The Examiner explained that “[a]lthough the conflicting claims are not identical, they are not patentably distinct from each other because the claims are directed to targeted advertisement based on online behavior.” *Id*., p. 247.

43. The Examiner further rejected claims 1-11, 14-16, 19, and 21-51 under pre-AIA 35 U.S.C. § 102(e) as anticipated by U.S. Pat. Pub. No. 2007/0294721 to Haeuser et al. (“Haeuser”), claim 12 under pre-AIA 35 U.S.C. § 103 as obvious over Haeuser in view of U.S. Pat. No. 6,463,533 to Calamera et al. (“Calamera”), and claims 13, 17-18, and 20 under pre-AIA 35 U.S.C. § 103 as obvious over Haeuser

in view of U.S. Pat. Pub. No. 2003/0187949 to Bhatt et al. ("Bhatt"). *Id*. at 247-63. Among other things, the Office Action found that Haeuser disclosed (1) "electronically associating online access IP addresses and received set-top box IP addresses for each of a multitude of users," (2) "using user profile information derived from online activity from a first one of the online access IP addresses to automatically cause a first television advertisement to be directed to the set-top box indicated by the set-top box IP address associated with the first online access IP address," (3) "a server, which electronically associates a multitude of online access IP addresses and IP addresses indicating corresponding television set-top boxes . . . causes direction of a select television advertisement to the set-top box indicated by the set-top box IP address associated with the first online access IP address," and (4) "a revenue amount is received." *Id*., pp. 248-49.

44. The applicant responded to the first Office Action on February 18, 2010. *Id*., pp. 291-322. In the response, the applicant added 101 additional claims resulting in a total of 152 pending claims, including 4 independent claims (claims 1, 30, 69, and 134), upon entry of the response. In the response, the applicant amended independent claims 1 and 30 "to include the limitation that the association between online access and set-top box IP addresses is 'based on a common IP address, wherein network traffic is routed via the common IP address for both an online user interface device and a set-top box' for each user," a limitation that appeared

originally in dependent claim 14. Ex. 1004, pp. 312-13. The applicant stated that "[t]he common IP address enables direction of a television advertisement for presentation to a set-top box of the user based on the user's profile information." *Id*., p. 313.

45. With respect to claims 1 and 30, as amended, the applicant argued that Haeuser "merely states that online access and set-top box may each use an IP address, but it does not disclose that they share a <u>common</u> IP address," and that "Fig. 1 of Haeuser clearly shows user set-top boxes 116 and 124 connected to access network 166 (operated by a television provider), and computer 168 *connected separately* to public network 112 (e.g., the Internet)." *Id*., p. 313 (emphasis in original). The applicant further explained that:

> Other amendments of claims 1 and 30 are proposed to clarify wording without substantially altering scope or adding new matter. The phrase "for each of a multitude of multitude of users" has been moved, and the phrase "of the user" added in several places to emphasize that the electronic associations are established on a user-by-user basis. An online user interface device is now recited to make more clear how the user profile information is generated. The phrase "directed to a set-top box for presentation via that set-top box, selectively," is now recited to describe direction of the television advertisement to make clear that the

television advertisement is not broadcast universally for presentation to all users.

Id., p. 315.

46. With respect to the newly-added independent claims 69 and 134, the applicant explained that "claims 69 and 134 parallel but generalize claims 1 and 30, respectively, in that more general identifiers replace the IP addresses for associating a user's online user interface device and set-top box." *Id*., p. 315. The applicant further noted that claims 69 and 134 "include[] the same limitation discussed above, namely that an association between an online user interface device identifier and a set-top box identifier is 'based on a common IP address, wherein network traffic is routed via the common IP address for both the online user interface device and the set-top box' for each user." *Id*., p. 315.

47. On August 9, 2010, the Examiner issued a Notice of Allowance that allowed all 152 of the pending claims. Ex. 1004, pp. 365-414. The Notice of Allowance included an Examiner's Amendment, authorized by the applicant, and amending multiple claims. *Id*., pp. 369-75. Among other amendments, the Examiner amended each of independent claims 1, 30, 69, and 134. *Id*., pp. 369-74.

48. With respect to claim 1, the Examiner replaced claim 1's preamble with "[a] method implemented using a programmable hardware computer system, the method comprising:," added "with the computer system" before "electronically

associating" in limitation (a), and added "with the computer system" before "automatically causing" in limitation (b). *Id*., p. 369. With respect to claim 30, the Examiner replaced claim 30's preamble with "[a] method implemented using computer equipment, the method comprising:," added "with the computer equipment" before "automatically electronically delivering" in limitation (a), and added "and" after "online activity" in limitation (c). *Id*., p. 371. With respect to claim 69, the Examiner replaced claim 69's preamble with "[a] method implemented using a programmed hardware computer system, the method comprising:," added "with the computer system" before "electronically associating" in limitation (a), and added "with the computer system" before "automatically causing a first" in limitation (b). *Id*., p. 372. With respect to claim 134, the Examiner replaced claims 134's preamble with "[a] method implemented using computer equipment, the method comprising:," added "with the computer equipment" before "automatically electronically" in limitation (a), and added "and" after "activity" in limitation (c). Ex. 1004, p. 374. Additionally, the Examiner replaced the preambles for each independent claim to recite "[a] method implemented using" a computer system/computer equipment. *Id*., pp. 369, 371-72, 374.

49. The Notice of Allowance additionally included an Examiner's Statement for reasons for allowance. *Id*., pp. 375-76. The Examiner stated:

> [T]he instant invention is directed to a method which involves electronically associating online access internet protocol (IP) addresses and received set-top box IP addresses for a number of users. User profile information derived from online activity from the online access IP addresses is used to cause a TV advertisement to be directed to a set-top box IP address associated with the online access IP address, where the online activity comprises requesting a search. Electronic associations are stored between the online access IP addresses and the received set-top box IP addresses.

Id., p. 375. The Examiner further stated that none of Haeuser, Calamara, Bhatt, or "any of the cited references teach or suggest, alone or in combination, the feature of '…electronically associating an online access IP address of a user and a set-top box IP address of that user based on a common IP address, wherein the network traffic is routed via the common IP address to both an online user interface device and a set-top box of that user…'." *Id*., pp. 375-76.

50. On August 10, 2010, the applicant filed a Rule 312 Amendment after Notice of Allowance. *Id*., pp. 414-441. The Rule 312 Amendment included amendments to multiple claims, including the independent claims 1, 69, and 134. Ex. 1004, pp. 414-36. The applicant amended the preamble of claim 1 to replace "programmable" with "programmed," in reference to the "programmed hardware

computer system." *Id*., p. 415. The applicant amended claims 69 and 134 to fix commas. *Id*., pp. 423, 431-32, 436.

51. The Rule 312 Amendment additionally included applicant's comments on the Notice of Allowance. *Id*., p. 437. The applicant commented that the Notice of Allowance generally described claim 1 but does not describe exactly the other independent claims. *Id*. The Applicant commented that:

> Specifically, independent claims 30 and 134 do not "involve "electronically associating" affirmatively but rather involve delivery of data to a server that performs such associating, and independent claims 69 and 134 do not involve associating "IP addresses" but rather involve associating "identifiers" that may or may not be "IP addresses," albeit based on a "common IP address."

and:

> Also, the reasons for allowance say that "the online activity comprises requesting a search." Although that is true, strictly speaking, because "requesting a search" is an "online activity" that can fall within the term "online activity," the independent claims do not require "requesting a search" or mention the word "search in any way.

Id., p. 437 (emphasis in original). The Examiner entered the Rule 312 amendment on September 13, 2010. Ex. 1004, pp. 444-71.

52. The ’260 Patent issued on December 28, 2010. Ex. 1001, Cover Page.

VII. RELATED LITIGATION

53. I understand that the ’260 Patent is the subject of pending litigation involving Petitioner: *AlmondNet, Inc. and Intent IQ, LLC v. Freewheel Media, Inc. and Beeswax.io Corp.*, Case No. 1:23-cv-00220 (D. Del.). I understand that Patent Owner sued Petitioner for alleged infringement of the’260 Patent. Ex. 1041.

54. I understand that the ’260 Patent has or its related patents have been involved or is currently involved in other litigations:

- *AlmondNet, Inc. v. Viant Technology Inc.*, 1-23-cv-00174 (D. Del.)
    - I understand that this case is currently pending and that claim construction briefing has not occurred and that a claim construction ruling has not been issued.
- *AlmondNet, Inc. v. Samsung Electronics Co., Ltd.*, 4-22-cv-07515 (N.D. Cal.) (“7515 N.D. Cal. case”)
    - I understand that this case is currently pending, but stayed, and that claim construction briefing has not occurred and that a claim construction ruling has not been issued.
- *AlmondNet, Inc. v. Meta Platforms, Inc. f/k/a Facebook, Inc.*, 6-22-cv-01205 (W.D. Tex.)

- I understand that this case was transferred to the 8911 N.D. Cal. case.

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

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

- *AlmondNet, Inc. et al v. Amazon.com, Inc. et al.*, 6-21-cv-00898 (W.D. Tex.) ("898 W.D. Tex. case")
    - I understand that this case is currently pending. I further understand that the claim construction briefing and the claim construction order issued in this case and the 897 W.D. Tex. case are the same.
- *AlmondNet, Inc. et al. v. Samsung Electronics Co., Ltd. et al.*, 6-21-cv-00891 (W.D. Tex.)
    - I understand that this case was transferred to the 7515 N.D. Cal. case.
- *Roku, Inc. v. AlmondNet, Inc. et al.*, 1-21-cv-01035 (D. Del.)
    - I understand that this case is currently pending. I further understand that the claim construction briefing was submitted, but that a claim construction order has not issued.

- *AlmondNet, Inc. et al v. Oath Holdings Inc.*, 1-19-cv-00247 (D. Del.) ("247 D. Del. Case")
    - I understand that this case was terminated on Mar. 4, 2019 and that prior to termination a claim construction ruling was not issued.
- *AlmondNet, Inc. et al v. Yahoo! Inc.*, 1-16-cv-01557 (E. D. N.Y.)
    - I understand that this case was transferred to the 247 D. Del. case.

55. As discussed in more detail below, I understand the '260 Patent has no litigation history before the PTAB. However, the '260 Patent is part of a larger patent family as shown in the family tree in Appendix B. I understand that, as shown in the family tree, the '260 Patent is related to US Patent No. 8,677,398 ("the '398 Patent"), US Patent No. 10,715,878 ("the '878 Patent"), US Patent No. 8,566,164 ("the '164 Patent"), US Patent No. 8,595,069 ("the '069 Patent"), US Patent No. 10,321,198 ("the '198 Patent"), and US Patent No. 11,564,015 ("the '015 Patent").

56. As discussed in more detail below, I understand that the '398 Patent was the subject of a petition for IPR filed by third parties Amazon.com, Inc., Amazon Web Services, Inc., and Amazon.com Services LLC, Amazon.com, Inc. et al. v. Intent IQ, LLC, et al., Case No. IPR2023-00227, in which institution was denied as time-barred. I understand that Petitioner had no involvement in the Amazon petition, and I had no involvement in that proceeding.

57. As discussed in more detail below, I understand that the ’398 Patent was the subject of a petition for IPR filed by third party Meta Platforms, Inc. (“Meta Petition”), Meta Platforms, Inc. f/k/a Facebook, Inc. v. Intent IQ, LLC et al., Case No. IPR2022-00773 (“Meta IPR”), which was jointly terminated after institution was granted. Ex. 1005, pp. 84, 115, 117-120. I understand that Petitioner had no involvement in the Meta petition, and I had no involvement in that proceeding.

58. As discussed in more detail below, I understand that the ’398 Patent was the subject of a petition for IPR filed by third parties Microsoft Corporation, Samsung Electronics America, Inc., and Samsung Electronics Co., Ltd., Microsoft Corporation et al. v. Intent IQ, LLC, Case No. IPR2022-01420, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand that Petitioner had no involvement in the Microsoft petition, and I had no involvement in that proceeding.

59. As discussed in more detail below, I understand that the ’398 Patent was the subject of a petition for IPR filed by third party Roku, Inc., Roku, Inc. v. Intent IQ, LLC et al., Case No. IPR2022-01236, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim and in which Director Review was

denied. I understand that Petitioner had no involvement in the Roku petition, and I had no involvement in that proceeding.

60. As discussed in more detail below, I understand that the ’398 Patent was the subject of a petition for IPR filed by third party Yahoo! Inc., Yahoo! Inc. v. Intent IQ, LLC et al., Case No. IPR2017-01299, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand that Petitioner had no involvement in the Yahoo petition, and I had no involvement in that proceeding.

61. As discussed in more detail below, I understand that the ’878 Patent was the subject of a petition for IPR filed by third party Roku, Inc., Roku, Inc. v. Intent IQ, LLC, Case No. IPR2022-01315, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand that Petitioner had no involvement in the Roku petition, and I had no involvement in that proceeding.

62. As discussed in more detail below, I understand that the ’878 Patent was the subject of a petition for IPR filed by third party Samsung Electronics Co., Ltd., Samsung Electronics Co., Ltd. v. AlmondNet, Inc. et al., Case No. IPR2022-01505, in which institution was denied. I understand that Petitioner had no involvement in the Samsung petition, and I had no involvement in that proceeding.

63. As discussed in more detail below, I understand that the ’878 Patent is the subject of a petition for IPR filed by third party Meta Platforms, Inc., Meta Platforms, Inc. f/k/a Facebook, Inc. v. Intent IQ, LLC et al., Case No. IPR2023-01281, which was filed on August 4, 2023, in which institution was granted. I understand that Petitioner had no involvement in the Meta petition, and I had no involvement in that proceeding.

64. As discussed in more detail below, I understand that the ’164 Patent was the subject of a petition for IPR filed by third party Samsung Electronics Co., Ltd., Samsung Electronics Co., Ltd. v. Intent IQ, LLC, Case No. IPR2022-01506, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand that Petitioner had no involvement in the Samsung petition, and I had no involvement in that proceeding.

65. As discussed in more detail below, I understand that the ’164 Patent was the subject of a petition for IPR filed by third party Roku, Inc., Roku, Inc. v. Intent IQ, LLC, Case No. IPR2022-00953, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand that Petitioner had no involvement in the Roku petition, and I had no involvement in that proceeding.

66. As discussed in more detail below, I understand that the ’069 Patent was the subject of a petition for IPR filed by third party Roku, Inc., Roku, Inc. v. Intent IQ, LLC, Case No. IPR2022-00959, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand that Petitioner had no involvement in the Roku petition, and I had no involvement in that proceeding.

67. As discussed in more detail below, I understand that the ’198 Patent was the subject of a petition for IPR filed by third party Roku, Inc., Roku, Inc. v. Intent IQ, LLC, Case No. IPR2022-00960, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand Petitioner had no involvement in the Roku petition, and I had no involvement in that proceeding.

68. As discussed in more detail below, I understand that the ’198 Patent was the subject of a petition for IPR filed by third party Samsung Electronics Co., Ltd., Samsung Electronics Co., Ltd. v. Intent IQ, LLC, Case No. IPR2022-01507, in which institution was denied because the petitioner in that case did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand that Petitioner had no involvement in the Samsung petition, and I had no involvement in that proceeding.

A. ’398 IPRS

69. I understand that Meta Platforms, Inc. (“Meta”) filed a petition for IPR on March 28, 2022 challenging claims 36 and 37 of the ’398 Patent. Ex. 1005, pp. 1-82. I understand that in a first ground claims 36 and 37 were alleged to be unpatentable under pre-AIA U.S.C. § 103(a) as being obvious over U.S. Patent App. Pub. No. 2008/0113674A1 to Baig (“Baig”), Building Internet Firewalls (2d ed. 2000) by Elizabeth D. Zwicky et al. (“Zwicky”), U.S. Patent No. 7,356,045 to Satapati et al. (“Satapati”), and The Internet Complete Reference (2d ed. 1996) by Harley Hahn (“Hahn”). *Id*., p. 9. I understand that in a second ground claims 36 and 37 were alleged to be unpatentable under pre-AIA U.S.C. § 103(a) as being obvious over Baig, Zwicky, Satapati, and Hahn, further in view of U.S. Patent No. 7,899,862 to Appelman et al. (“Appelman”). *Id*. I understand that in a third ground claims 36 and 37 were alleged to be unpatentable under pre-AIA U.S.C. § 103(a) as being obvious over U.S. Patent App. Pub. No. 2007/0067549 to Baal-Haness (“Baal-Haness”) in view of Appelman. *Id*. I understand that in a fourth ground claim 37 was alleged to be unpatentable under pre-AIA U.S.C. § 103(a) as being obvious over Baal-Haness and Appelman, further in view of Zwicky and Satapati. *Id*. I understand that Meta did not propose any constructions for any claim terms. *Id*., p. 13. Patent Owner did not file a Preliminary Response and thus also did not propose any constructions for any claim terms. *Id.*, p. 84.

70. I understand that the PTAB initially granted institution in a decision issued on October 21, 2022, but later issued a decision on June 2, 2023, terminating IPR due to settlement after institution of trial. *Id*., pp.117-120.

71. I understand that Amazon.com, Inc., Amazon Web Services, Inc., and Amazon.com Services LLC (collectively "Amazon") filed a petition for IPR on November 18, 2022 challenging claims 36 and 37 of the '398 Patent. I understand that Amazon asserted substantially the same grounds as the Meta '398 IPR. I understand that the PTAB issued a decision denying institution of IPR on June 5, 2023, because the petition was time-barred. I understand that the PTAB did not reach the merits of petitioner's substantive arguments, but rather denied institution because the Petition was not filed within the time period set forth in 35 U.S.C. § 315(b).

72. I understand that the Microsoft, Roku, and Yahoo! IPRs for the '398 Patent were all denied institution. I understand that the Yahoo! IPR for the '398 Patent asserted grounds involving U.S. Patent App. Pub. No. 2006/0271690 to Banga *et al.* ("Banga690"), used in the current Petition supported by this Declaration. I understand that no other references used in the current Petition were applied during the Microsoft, Roku, or Yahoo! IPRs for the '398 Patent. I understand that Petitioner was not involved in the petitions for IPR of the '398 Patent.

B. ’878 IPRS

73. I understand that the petition for the Meta ’878 IPR was filed on August 4, 2023, challenging claims 1-4 and 6-23 of the ’878 patent. I understand that the Meta ’878 IPR alleged that each of the challenged claims was unpatentable under pre-AIA U.S.C. § 103(a) as being obvious over Baig and a combination of other references not used in the current Petition. I understand that the Patent Owner filed a Preliminary Response on November 24, 2023, and the PTAB has granted Institution on February 21, 2024. I understand that Petitioner is not involved in the Meta ’878 IPR.

74. I understand that institution was denied for the Roku and Samsung IPRs of the ’878 Patent. I understand that no references used in the current Petition were applied during the Roku or Samsung IPRs of the ’878 Patent. I understand that Petitioner was not involved in the petitions for IPR of the ’878 Patent.

C. ’164, ’069, AND ’198 IPRS

75. I understand that each of the respective IPRs for the ’164, ’069, and ’198 Patents were denied institution because the petitioners in those cases did not establish a reasonable likelihood of prevailing on at least one challenged claim. I understand that no references used in the current Petition were applied during the IPRs of the ’164, ’069, or ’198 Patents. I understand that Petitioner was not involved in the petitions for IPR of the ’164, ’069, or ’198 Patents.

VIII. TECHNICAL BACKGROUND

76. As discussed in more detail below, all technical aspects of the claims were well-known, including targeting of advertisements, information sharing between devices in a network, and network address translation.

A. TARGETED DIGITAL ADVERTISING

77. It is my opinion that targeted digital advertising was well known prior to the ’260 Patent.

78. The concept of providing targeted advertisements to users (e.g., via the Internet-connected devices and/or other devices providing digital advertisemetns) was known at least by the 1990s. In 1997, Robbin Zeff and Brad Aronson authored *Advertising on the Internet* (“Zeff,” Ex. 1037), which describes method of providing digital advertisements over the Internet, including targeted advertisements. Ex. 1037, pp. 144, 163-188. As the authors noted, advertisers “dreamed of delivering the right ad to the right person at the right time” (i.e., providing targeted advertisements) since the inception of the Internet. Ex. 1037, p. 144. The authors further provide an example of the benefits of targeted digital advertising when compared to earlier advertising methods, describing that:

> In a broadcast television campaign, advertisers can target by geographic location, time of day, and the audience watching a particular show. With a direct mail campaign, marketers can target as finely as Fortune

> 500 employees who have attended safety and health conferences. **Internet advertising can offer an advertiser all the targeting capabilities of other media plus a lot more. Indeed, on the Internet an advertiser can finally target every ad so that it goes out to just the right prospective customer at precisely the right time**.

Ex. 1037, p. 144 (emphasis added).

79. It is my opinion that a POSA would have been aware of the technologies and techniques required to perform targeted digital advertising as described by Zeff. Specifically, it was well known that products and/or services could be advertised to users based on user preferences, derived from user's online activities, habits, purchase histories, and other interactions over the Internet. For example, Burner (Ex. 1032) discloses that online advertisers would select web pages that they believe their target audience is likely to visit and discusses issues relating to determining on which sites an advertiser should place their advertisements to maximize user views/interactions. Ex. 1032, 1:42-58. Burner describes methods of determining where to provide targeted advertisements, such as developing a user profile. Ex. 1032, 1:59-61. Burner gives an example of such a process, disclosing:

> [W]hen the user first visits a web site running [targeted advertising] software, the server requests that the user's browser software permanently record an identifying string of characters (called a

> ‘cookie’) in a file local to the user’s personal computer. The server then records each web page visited on that site by the user and associates this usage trail with the cookie. The server software **can then customize content (including advertising content) according to the interests evinced by the user’s habits**.

Ex. 1032, 1:62-2:4 (emphasis added). Heckel (Ex. 1033) describes a similar method, “for advertising over a computer network utilizing virtual environments of games.” Ex. 1033, Title. Heckel’s method includes implementing user/visitor profiles, achieved by retrieving a “demographic profile…of the user” from an ad server database or a user database to “locate appropriate advertising for the [user].” Ex. 1033, 4:2-9, 4:43-58.

80. Petitioner itself disclosed methods of targeted digital advertising before the priority date of the ’260 Patent. Black (Ex. 1034) describes a method of providing digital advertisements (e.g., via video distribution systems for video-on-demand (VOD)) that “match[] content and target audience,” and which “solves the problem of advertising effort being wasted on uninterested viewers . . . by providing selected advertisements to VOD viewers.” Ex. 1034, ¶ [0015]. Black discloses that advertisers can set rules that identify which targeted digital ads should be presented to users based on various parameters, including demographics, geographic location, timing, and other parameters. Ex. 1034, ¶¶ [0025], [0036].

81. It was also known that one aspect of targeted digital advertising is the ability for platforms displaying targeted advertisements to receive revenue based on providing the targeted advertisements. As Zeff recognized, from its inception, Internet advertising was focused on generating revenue for the websites that displayed digital advertisements. Ex. 1037, p. 163 ("[w]hen advertising on the Web first began, no one knew how to price. The only known figure was the fee HotWired decided to charge for its first ads in 1994: $30,000 for banner advertising that ran for 12 weeks."). In John Hagel and Marc Singer's *Net Worth* (Ex. 1036), the authors show that as early as 1999 it was known that advertisers would pay for the opportunity to specifically provide targeted advertisements to users (e.g., "as they're considering a purchase"). Ex. 1036, pp. 35-37, 44-45, 149-151. *Net Worth* notes that the revenue for providing targeted advertisements can go to the platform displaying the targeted advertisement, or even to the users who provided the information used to provide the targeted advertisements. Ex. 1036, pp. 35-37, 41, 44-45, 149-151. It was known that advertisers and entities receiving revenue for displaying targeted advertisements could use various pricing models to generate and receive revenue, such as models that "range from flat-fee to paying for the number of times an ad is seen . . . to paying on a cost-per-lead or cost-per-purchase basis." Ex. 1037, p. 164; *see also id.*, pp. 163-188.

82. Therefore, it was well known to use technologies such as those described above to identify advertisements of interest to specific user/visitors, provide those advertisements as targeted ads, and receive revenue as a result of providing the targeted advertisements.

B. METHODS FOR DELIVERY OF TARGETED ADVERTISEMENTS

83. As I discussed above at Section VIII.A, providing targeted digital advertising was well-known prior to the alleged invention of the ’260 Patent. In addition to the general concepts of identifying advertisements of interest to specific user/visitors, providing those advertisements as targeted ads, and receiving revenue as a result of providing the targeted advertisements, specific methods of delivering targeted advertisements from one device to another were also well-known. Ex. 1045, ¶¶ [0002], [0006], [0017]-[0019]; Ex. 1048, pp. 188-189; Ex. 1050, ¶¶ [0041], [0045]-[0046], [0074]; Ex. 1043, Abstract, 6:37-39, 6:50-57, 7:10-15, 9:2-10, 13:10-25; Ex. 1049, p. 2; Ex. 1047, pp. 3-5. In delivering targeted advertisements, advertisers essentially had two common-sense options: either sending the advertisements to a device in response to a request for the ad or sending the advertisements to a device without a prior request. Methods and techniques for performing either option were well-understood by a POSA by at least the late 1990s and early 2000s.

84. Serving targeted ads to a device without a request by the device was well-known by the early 2000s. Traditional television ad delivery involved broadcasting commercials during scheduled programming, without any input from the viewer. Ex. 1045, ¶ [0002]. Collecting characteristics of viewers in order to refine and "target" ads was also well-understood (*see* Section VIII.A, above). Jennings (Ex. 1050), for example, describes targeting media based on "sex, age, hobbies, historical viewing habits, and other data the viewer would provide." Ex. 1050, ¶ [0041]; *see also* Ex. 1045, ¶ [0027] ("formation of groups for targeted advertising … subgroups may be based (1) geographic segmentation, (2) demographic segmentation, (3) psychological segmentation," etc.); Ex. 1046, ¶¶ [0016]-[0017] (building subscriber profiles based on information "collected from subscribers during the subscription registration process" and "behavioral data" for subscribers comprising "website viewing behaviors, emails, electronic purchases over the internet" and selecting subscribers for ads based on the profile information). Putting the concepts together and delivering targeted advertisements based on viewer characteristics without a specific device or user request was also known in the art as of at least 2006. *See* (Ex. 1045, ¶ [0006] (describing delivery of "targeted advertisements to the set-top boxes (STB)"); Ex. 1046, Abstract (describing system and method for sending "inserting the targeted advertisement data into video data; sending the video data from the IPTV server to … selected segment of the IPTV

subscriber population"); Ex. 1051, ¶¶ [0024], [0030] (application for "targeting advertisements" to consumers by sending targeted ads to a STB or PVR over cable TV networks based on consumer profiles). For example, Flickinger445 (Ex. 1045) describes a "a method for delivering targeted advertisements to the set-top boxes (STBs)," where the ad could be served over analog cable or digital television networks. Ex. 1045, Abstract, ¶¶ [0006], [0017]-[0019]. Howcroft742 (Ex. 1046) further describes a method for determining a subscriber group to send a targeted advertisement to, inserting the targeted advertisement into video data, and sending the "video data from the IPTV server to client devices associated with members of the selected segment." Ex. 1046, ¶ [0013]. These advertisements were delivered to the client device by inserting the targeted advertisement into the video data sent to the client device, without a user or device request for that targeted advertisement.

85. Similarly, targeted advertising was also a well-known strategy in Internet and web-based environments. Fabos (Ex. 1048), for example, describes that banner ads were common examples of targeted ads displayed to a device, oftentimes without a user specifically choosing and requesting an advertisement. Ex. 1048, p. 189. By 1998, content-rich pages supporting banner advertising had become the primary sources of revenue in the Internet industry, and this method of delivering advertisements would have been well-known to a POSA. Ex. 1048, p. 189. Search engine sponsored links were another example of a targeted ad delivered without a

user/user's device selecting and asking for a specific advertisement. Ex. 1047, p. 188. As Fabos explains, "the advertiser pays the search engine to be affiliated with certain key words; the search company provides the sponsored links…." Ex. 1048, p. 188.

86. Serving targeted ads to a device based on a request from the device was similarly well-known. For example, a POSA would have known that users may interact (e.g., via a device) with displayed advertisements to receive further information about the ad and/or additional advertisements. If an advertisement was delivered to a television (e.g., via a set-top box) the television could display ads which users could choose to click on and interact with, receiving more information (*i.e.*, advertisements) about the advertised product. Ex. 1043, Abstract, 6:37-39, 6:50-57, 7:10-15, 9:2-10, 13:10-25. In the context of web-based delivery of targeted advertisements, client devices could similarly request ads by a user interacting with (e.g., clicking on) a displayed advertisement, or by simply loading a webpage in which a targeted advertisement link is embedded. Ex. 1020, ¶¶ [0002], [0032]. Clients could also answer surveys providing information to a content provider indicating the types of advertisements that match the client's demographics, activities, and/or other characteristics. Ex. 1051, ¶¶ [0026], [0132], [0141]; Ex. 1014, ¶ [0063]-[0064]; Ex. 1047, p. 2 (noting that Amazon.com supports the ability for users to request email notifications when new books by an author are available for

purchase). This allows the advertiser to tailor ads according to the client's preferences and deliver the ad to the client's device, as requested.

87. Various system architectures for implementing targeted advertisement delivery were also common knowledge by the mid-2000s. For example, a POSA at that time would have recognized that targeted advertisements could be delivered to devices by a content provider's system (*e.g.*, a provider of the content through which the advertisement would be displayed), or by an independent (*i.e.*, third-party) system. As discussed above, content providers may deliver targeted advertisements directly to a set-top box, IPTV, and/or other television systems. Ex. 1050, ¶¶ [0045]-[0046] (noting that the network owner may "stream media to its employees or customers directly"); Ex. 1046, Abstract, ¶¶ [0011] (receiving, at the IPTV provider's server, the targeted advertisement, inserting the targeted advertisement data into video data, and sending the video data to subscribers), [0013]-[0014], [0024]-[0025]; Ex. 1045, ¶¶ [0017] (serving targeted advertisements to subscribers from a "head end or central office 22 via a cable network 23," where a subscriber's STB receives the cable stream), [0019]-[0020], [0030].

88. It was also well-known that targeted advertisements could be delivered—as web-based and/or television advertisements—by third party providers. In May of 2000, Susan Young authored Getting the Message: How the Internet is Changing Advertising (Ex. 1049), where she discussed how technology

called "DART (for dynamic advertising reporting and targeting) … tracks 26 criteria—from keywords in searches, to purchases, to time-of-day surfing, to domain name—in order to develop a user profile." Ex. 1049, p. 2. One early ad serving firm, DoubleClick, built a business matching Web users with advertisers and "sell[ing] ad space on the Web sites it represents" to deliver targeted ads on these sites, based on the user profiles. *Id*. Leigh (Ex. 1020) describes the use of an "Ad Content Server" to request and insert targeted advertisements from third parties at specified locations on web pages. Ex. 1020, ¶¶ [0022]-[0024]; *see also* Ex. 1033, 3:37-44, 4:50-58 (third-party advertisement server delivering targeted advertisements via code plug-ins in Internet-enabled games).

89. Therefore, methods of delivering targeted advertisements from one device to another, with or without a prior request, were well-known prior to the priority date of the '260 Patent.

C. NETWORK ADDRESS TRANSLATION

90. Network Address Translation (NAT) was a well-known method of mapping multiple IP addresses inside a network (e.g., private addresses) to a common public IP address at least as of May 1994, when a Request for Comments (RFC) detailing NAT was published by the Internet Engineering Task Force (IETF). Ex. 1035. NAT was created to solve the problems of IP address depletion and scaling in routing by reusing IP addresses in a network for multiple devices (e.g.,

stub routers using NAT). Ex. 1035, pp. 1-2. IP addresses are divided into reusable addresses, that can be used by multiple devices, and globally unique addresses that no other devices (e.g., other routers) can use. Ex. 1035, pp. 2-4. By utilizing reusable addresses and globally unique addresses, systems such as a local network conserve resource by assigning reusable IP addresses to devices and/or domains within a local network that rarely communicate externally and translating the reusable IP address into a globally unique address when communications need to be sent outside of the network. Ex. 1035, pp. 1-4.

91. Various methods of performing NAT were known prior to the ’260 Patent. For example, and as described in further detail below, Zwicky (Ex. 1012) discloses methods of performing network address translation (NAT), allowing a network to use one set of network addresses (such as IP addresses) internally and a different set when dealing with external networks, as outlined by the RFC. Ex. 1012, p. 114. Specifically, Zwicky discloses an implementation of NAT that translates both router ports and IP addresses to allow multiple clients connected to a router to share a single (i.e., common) IP address. Ex. 1012, Fig. 5-4, pp. 114-16.

92. Therefore, it was well-known to use technologies and methods such as NAT to cause multiple devices and/or domains to share a common IP address for some communications while using different IP addresses for other communications.

IX. OVERVIEW OF THE RELIED UPON PRIOR ART

A. US PAT. APP. PUB. NO. 2008/0113674 ("BAIG")

93. Baig (Ex. 1007, Ex. 1040) is a U.S. Patent Application Publication filed on October 31, 2007. I understand that this date is after the '260 Patent priority date, but Baig claims priority to and incorporates-by-reference an earlier provisional (Ex. 1008, "Baig Provisional") filed on November 10, 2006. Ex. 1007, ¶ [0001]. I understand that Baig qualifies as prior art under 35 U.S.C. § 102(e) as of its provisional filing date.[1] I further understand that Baig is prior art under § 102(e) as of the filing date of its provisional because (1) the invalidating disclosures from Baig are supported by the Baig Provisional and (2) the Baig Provisional provides § 112 support for at least one claim appearing in Baig. *See also* Ex. 1007 (annotated to show support from the Baig Provisional).

94. I understand that claims originally filed with an application can be relied upon for written description purposes, and here the Baig Provisional's claims 1-3, 8-16, and 18-22 are identical to claims in Baig. These originally-filed claims thus provide sufficient written description support for their corresponding claims in Baig. Additionally, as has been explained to me, this supporting description must be "in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use

[1] Citations to 35 U.S.C. §§ 102 and 103 refer to the pre-AIA versions.

the same." 35 U.S.C. § 112. As I explain in the below table showing an element-by-element analysis for Baig claim 1, it is my opinion that a POSA would have found the Baig Provisional satisfies this standard as it pertains to at least claim 1.

	PG Pub Claim Language	Baig (2008/0113674)	Baig Provisional (App. No. 60/858,204)
1.pre	A method for providing vicinity-based community services at a wireless access location by a public network service provider, comprising the steps of:	Baig describes a method and apparatus for "providing a vicinity-based community at a wireless access location, such as a hotspot," including "creating a vicinity-based community in real time allowing end-users accessing the public network service provider from the wireless access point to connect to other users in their vicinity." Ex. 1007, ¶¶ [0006], [0038]-[0040].	The provisional describes a method and apparatus for "providing vicinity-based community services at a wireless access location, such as a hotspot, by a public network service provider," including "providing the vicinity-based community services in real time to end-users accessing 10 the public network service provider from the wireless access point." Ex. 1008, p. 2, ll. 3-11. "In particular, the present nvention is directed to a method and apparatus for providing vicinity-based community services over the Internet by a vicinity-based community service provider (VCSP) to wireless mobile devices of end-users that have accessed the VCSP via a wireless access point at a wireless hotspot. A vicinity-based community service is a service provided by the VCSP which discovers (i.e., identifies) and connects wireless users within physical vicinity (i.e., proximity) of each other at a hotspot. Once a "vicinity-based community" at a physical location (i.e., a hotspot) is created, the users can potentially interact physically or non-physically with each other. The VSCP identifies a group of users at a wireless hotspot

	PG Pub Claim Language	Baig (2008/0113674)	Baig Provisional (App. No. 60/858,204)
			based upon their common public IP address and interconnect them, thereby creating a vicinity-based user group. The VSCP can then requests end-user profile information and the physical location of the hotspot to correlate the vicinity-based group to a specific geographical location. For example, end-users connected to a hotspot provided by a coffee shop (e.g., STARBUCKS), illustratively located at 100 Madison Avenue, NY, NY, are asked to provide such location information, and optionally other profiling data. As the public IP addresses of each hotspot are unique, the VCSP is able to build a database that associates the unique public IP addresses of each hotspot with a physical location. Once the end-users at a particular access point log into the website of the VCSP, they are able to view other members of the VCSP who have also logged in from the same access point associated with a particular wireless hotspot. The VCSP can offer a variety of services to the logged-in end users, all of whom now form the vicinity-based community at the wireless access point." Ex. 1008, p. 5, ll. 5-25.
1.A	receiving over a public network, at least one request for vicinity-based	Baig describes a VCSP server 224 receiving a login request from a user connected to a public	Baig's provisional application also describes a VCSP system receiving, through a hotspot, a request from a user

	PG Pub Claim Language	Baig (2008/0113674)	Baig Provisional (App. No. 60/858,204)
	community services from at least one end-user accessing said wireless access point;	network, such as a hotspot, for accessing services hosted by the server. For example, Baig discloses a method 300 that "starts at step 301, where at least one user located at each of one or more hotspots have established wireless 25 connectivity with the Internet. That is, the users at each hotspot are provided with Internet connectivity via an associated access point 106 as discussed above. ***At step 302, the at least one server 224 of the VCSP 202 receives a login request from a user that is connected to a particular WiFi access point (hotspot)***." Ex. 1007, ¶ [0055]. Baig further teaches that by logging in, users may access various web pages for various services offered by the VCSP. For example, Baig states "At step 312, the server 224 forms a vicinity-based user group at each hotspot 110. ***A vicinity-based user group allows the VCSP***	device to access vicinity-based services. *See* Ex. 1008, pp. 8-10. Baig describes a VCSP server 224 receiving a login request from a user connected to a hotspot. For example, Baig discloses that "[t]he method 300 starts at step 301, where at least one user located at each of one or more hotspots have established wireless 25 connectivity with the Internet. That is, the users at each hotspot are provided with Internet connectivity via an associated access point 106 as discussed above. At step 302, the at least one server 224 of the VCSP 202 receives a login request from a user that is connected to a particular WiFi access point (hotspot)." Ex. 1008, p. 8, ll. 22-28; *see also* p. 8, ll. 13-21. Baig also states "[i]n particular, when a user at a hotspot logs into the website of the VCSP 202, the user automatically becomes part of the vicinity-based user group. The user can then access various web pages from the VCSP website to participate or receive particular service offered by the VCSP 202. The services include receiving particular advertisements, a goods and services exchange program, sharing of files (e.g., music) as permissible under law, a chat room, a message board for blogs and the like, among other services, as discussed below with respect to FIGS. 4-23. Thus, users

	PG Pub Claim Language	Baig (2008/0113674)	Baig Provisional (App. No. 60/858,204)
		202 to provide services to the member users of the group. In particular, when a user at a hotspot logs into the website of the VCSP 202, the user automatically becomes part of the vicinity-based user group. The user can then access various web pages from the VCSP website to participate or receive particular service offered by the VCSP 202. The services include receiving particular advertisements, a goods and Services exchange program, sharing of files (e.g., music) as permissible under law, a chat room, a message board for blogs and the like, among other services, as discussed below with respect to FIGS. 4-23. Thus, users accessing a hotspot and who have logged into the website of the VCSP 202 can receive and participate in the services offered by the VCSP 202, as well as communicate with each other (e.g., chat room)." Ex. 1007, ¶ [0059].	accessing a hotspot and who have logged into the website of the VCSP 202 can receive and participate in the services offered by the VCSP 202, as well as communicate with each other (e.g., chat room)." Ex. 1008, p. 9, ll. 20-28. *See also* p. 19, l. 19-p. 20, l. 26.

	PG Pub Claim Language	Baig (2008/0113674)	Baig Provisional (App. No. 60/858,204)
		See also Ex. 1007, ¶¶ [0107]-[0113] (describing various services such as online games, searching, and blogging services that a user may request form the VCSP site)	
1.B	grouping end-users accessing common wireless access points; and	Baig describes VCSP server 224 grouping users based on the hotspot through which the user accesses the VCSP. "The server 224 includes at least one processor, memory and Support circuitry for running programs that, for example, identify users that are originating from a particular access point 106 and then groups those users having a common IP address to the same hotspot 110. Accordingly, since each hotspot 110 has a unique static IP address, and the range of wireless communications for any given hotspot is limited, any users accessing the hotspot are deemed to be in vicinity of each other. For example, any users of mobile devices accessing	Baig's provisional application further discloses a VCSP system and method that groups users based on vicinity by determining whether the users are connected to the network through a common access point. *See, e.g.,* "The network 200 of FIG. 2 further includes a vicinity-based community service provider 30 (VCSP) 202 having at least one content server 224 coupled to the Internet 122 in a conventional manner. The server 224 includes at least one processor, memory and support circuitry for running programs that, for example, identify users that are originating from a particular access point 106 and then groups those users having a common IP address to the same hotspot 110. Accordingly, since the each hotspot 110 has a unique static IP address, and the range of wireless communications for any given hotspot is limited, any users accessing the hotspot are deemed to be in vicinity of each other. For example, any users of mobile devices accessing a hotspot 110 illustratively provided by a public library are deemed to be, and are in

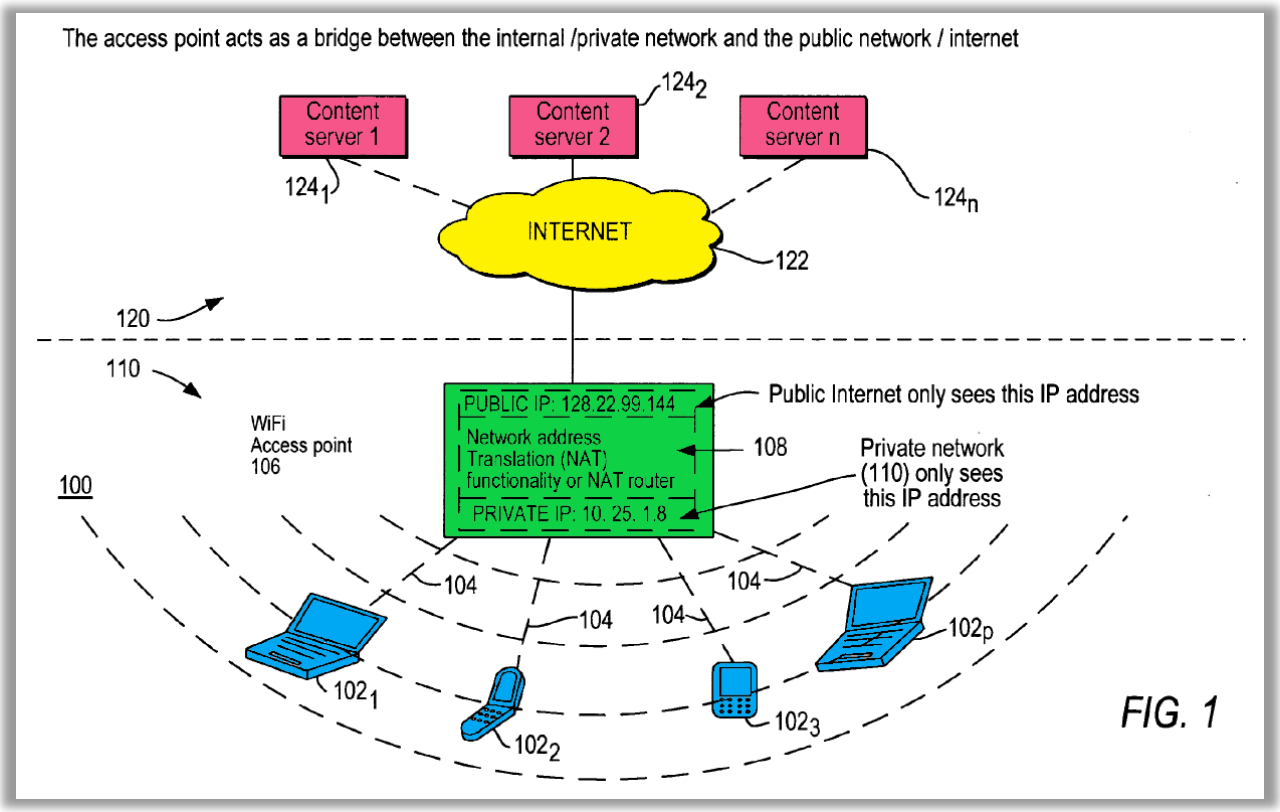
	PG Pub Claim Language	Baig (2008/0113674)	Baig Provisional (App. No. 60/858,204)
		a hotspot 110 illustratively provided by a public library are deemed to be, and are in fact, in vicinity to each other." Ex. 1007, ¶ [0052]. "At step 312, the server 224 forms a vicinity-based user group at each hotspot 110. A vicinity-based user group allows the VCSP 202 to provide services to the member users of the group. In particular, when a user at a hotspot logs into the website of the VCSP 202, the user automatically becomes part of the vicinity-based user group." Ex. 1007, ¶ [0059]. "The server 224 of the VCSP 202 includes programming which determines that WiFi mobile devices accessing a single hotspot are connected to the same WiFi access point, and therefore must be in close vicinity to one-another. Accordingly, all devices 102 originating from the same WiFi access point are clustered in the same	fact, in vicinity to each other." Ex. 1008, p. 7, l. 29-p. 8, l. 7. "A vicinity-based community service is a service provided by the VCSP which discovers (i.e., identifies) and connects wireless users within physical vicinity (i.e., proximity) of each other at a hotspot. Once a "vicinity-based community" at a physical location (i.e., a hotspot) is created, the users can potentially interact physically or non-physically with each other. The VSCP identifies a group of users at a wireless hotspot based upon their common public IP address and interconnect them, thereby creating a vicinity-based user group." Ex. 1008, p. 5, ll. 8-14. "At step 312, the server 224 forms a vicinity-based user group at each hotspot 110. A vicinity-based user group allows the VCSP 202 to provide services to the member users of the 20 group. In particular, when a user at a hotspot logs into the website of the VCSP 202, the user automatically becomes part of the vicinity-based user group." Ex. 1008, p. 9, ll. 18-21. "The server 224 of the VCSP 202 includes programming which determines that WiFi mobile devices accessing a single hotspot are connected to the same WiFi access point, and therefore must be in close

	PG Pub Claim Language	Baig (2008/0113674)	Baig Provisional (App. No. 60/858,204)
		vicinity-based group." Ex. 1007, ¶ [0063].	vicinity to one-another. Accordingly, all devices 102 originating from the same WiFi access point are clustered in the same vicinity-based group." Ex. 1008, p. 10, ll. 19-22.
1.C	providing said vicinity-based community services in real time to end-users accessing said public network service provider from said wireless access point.	Baig describes VCSP server 224 providing, in real-time, services such as advertising, online gaming, and searching to users connected to a hotspot. "In another embodiment, real-time advertising is provided at one or more physical locations (e.g., billboard at Times Square, NY) based on real-time bidding between advertising entities. In particular, advertisement entities, e.g., businesses competing for the right to exclusively advertise in real-time at a particular location, send bids to the VCSP for such rights. The winner of the bidding can then advertise, for example, on the billboard at Times Square in real time, for a predetermined time period (e.g., 1 hour). For example, if advertisers competing for business	Baig's provisional application further discloses a method including "providing the vicinity-based community services in real time to end-users accessing the public network service provider from the wireless access point." Ex. 1008, p. 2, ll. 6-11; *see also* p. 2, ll. 16-31 (describing various type of vicinity-based services that may be provided in real time). "In another embodiment, the vicinity-based community services comprise an advertising service. One or more advertising entities can bid to provide advertising to the at least one enduser based on end-user profiling." Ex. 1008, p. 2, ll. 25-27. "In another embodiment, real-time advertising is provided at one or more physical locations (e.g., billboard at Times Square, NY) based on real-time bidding between advertising entities. In particular, advertisement entities, e.g., businesses competing for the right to exclusively advertise in real-time at a particular location, send bids to the VCSP for such rights. The winner of the bidding can then advertise, for example, on the billboard at Times

	PG Pub Claim Language	Baig (2008/0113674)	Baig Provisional (App. No. 60/858,204)
		from young adults between the age of 21 and 27 at Times Square, multiple advertisers could compete by bidding against each other for the right to advertise in real time on one of the billboards for an hour duration, illustratively between 8-9pm." Ex. 1007, ¶¶ [0105]-[0106].	Square in real time, for a predetermined time period (e.g., 1 hour). For example, if advertisers competing for business from young adults between the age of 21 and 27 at Times Square, multiple advertisers could compete by bidding against each other for the right to advertise in real time on one of the billboards for an hour duration, illustratively between 8-9 pm." Ex. 1008, p. 19, ll. 9-18.

95. For at least the reasons shown in the above table, it is my opinion that the Baig Provisional describes the elements of Baig's claim 1.

96. Baig discloses an apparatus and method for providing vicinity-based communication services to devices (**blue**) connected to content servers (**pink**) over the Internet (**yellow**) via the same wireless access point (**green**), such as an access point for a WiFi hotspot. Ex. 1007, Figs. 1, 2, [0042]-[0043], [0052], [0055]-[0060].

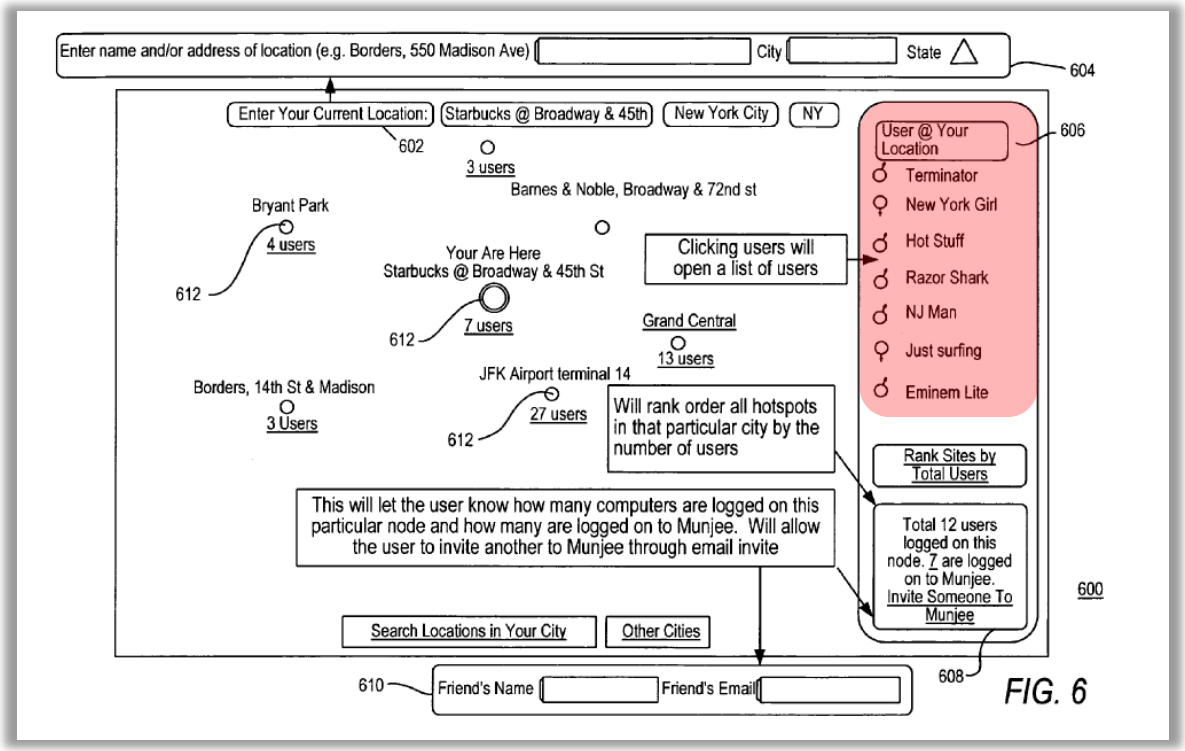


Ex. 1007, Fig. 1 (annotated)

97. I note that Baig discusses both an access point 106 and a hotspot 110 and explains that an access point (AP) provides the hotspot that wireless devices use to connect to an external network (e.g., the Internet). *See* Ex. 1007, [0003] ("Wireless "hotspots" are locations with wireless connectivity where users having mobile devices, such as laptops, PDA, mobile phones and the like, can connect to a public network (e.g., the Internet) using standard WiFi technology (often referred to as Wireless LAN or WLAN technology)."), [0004] ("A WiFi hotspot is enabled by a wireless device known as an "access point" (AP), which emits a wireless signal in a limited geographical area, and connects mobile devices to the public network."),

[0042] ("Referring to FIG. 1, a block diagram is shown illustrating how one or more mobile devices 102 at **a public WiFi hotspot 110** interact with the public network 120. In particular, a communications network 100 includes **a public WiFi hotspot 110** communicably coupled to a public network 120 via **an access point 106**."), [0043] ("the mobile devices 102 at **the hotspot 110** form a local network 104 with the **access point 106**"), [0045], [0047], [0049]-[0052], Figs. 1-2; Ex. 1008, 1, 5-8, Figs. 1-2. I also note, as seen from certain excerpts from Baig that I provide below, that Baig appears to use the term, "access point," and "hotspot" interchangeably.

98. Baig provides the communication services through a vicinity-based service provider (VCSP), hosted by a server, that provides web pages for users of the devices to access information and services on the Internet. Ex. 1007, [0053], [0055]-[0060], [0063]-[0064], [0074]. Baig allows users to access the VCSP through a common public internet protocol (IP) address, at the access point, using a NAT router to send information from the Internet to the appropriate device. Ex. 1007, [0044]-[0046], [0049]-[0052]. In doing so, Baig's VCSP identifies all the users logging in via that common hotspot and access point, forms a user group at the hotspot, and stores a list of the users that have logged into the VCSP (**red**). Ex. 1007, [0038], [0056], [0059], [0075]-[0076], Fig. 6.



Ex. 1007, Fig. 6 (annotated)

99. Baig's VCSP maintains user profiles of users that access the Internet through a common public IP address based on the users' online activity, such as their responses to profile questions as well as their traffic patterns on the Internet. Ex. 1007, [0061], [0066], [0076], [0081], [0093], Figs. 5, 6, 14-18. Among the services Baig provides through the VCSP is the ability to supply targeted vicinity-based advertisements to an audience at a particular WiFi hotspot based on the user profiles maintained by the VCSP. Ex. 1007, [0058]-[0059], [0093]-[0094]. Specifically, Baig shares user information stored in the user profiles to advertisers on an anonymous basis, and targeted advertisements are provided to the users sharing the

common public IP address through their user devices. Ex. 1007, Fig. 22, [0096]-[0101].

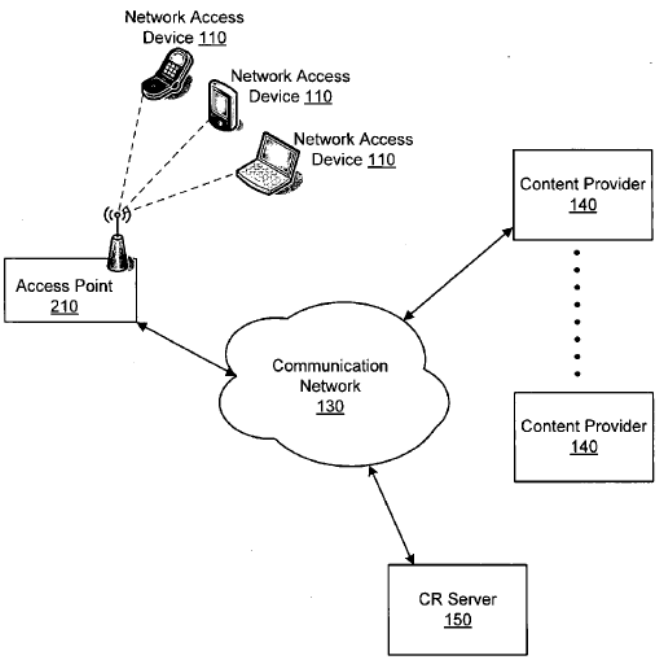
100. Therefore, it is my opinion that Baig is analogous art to the '260 Patent. I will provide more detail about Baig in my discussion of the claim limitations below. It also is my opinion that a POSA would have found that various combinations of Baig's teachings, particularly Baig's teachings of various vicinity-based community services, were predictable variations of such teachings notwithstanding Baig's description of each service as an "embodiment." *See*, e.g., Ex. 1007, [0007]-[0012], [0041]; *see also id.* [0076]-[0077] (referring to "embodiment[s]" with reference to Figure 6), [0079]-[0080] (referring to "embodiment[s]" with reference to Chat service shown in Figure 7), [0085] (referring to "embodiment" with reference to Barter service shown in Figure 8), [0090] (referring to "embodiment[s]" with reference to Share service shown in Figure 9), [0091] (referring to "embodiment" with reference to Blog service shown in Figure 10), [0092] (referring to "embodiment" with reference to Location Forum service shown in Figure 11), [0093] (referring to "embodiment" with reference to Lost & Found service shown in Figure 12), [0107]-[0108] (referring to "embodiment[s]" with reference to Gaming service), [0111]-[0112] (referring to "embodiment[s]" with reference to Search service shown in Figure 13). In view of Baig's reference to these multiple "embodiments," the fact that such features are disclosed adjacent to one another, as

well as in different tabs of Baig's VCSP website (*see* e.g., Ex. 1007, [0079], Figs. 6-13), POSA would have recognized that a leap of inventiveness was not required to combine them with each other as I explain below. *See* Ex. 1007, [0131] (suggesting a POSA would recognize variations to the disclosed embodiments). I will provide more detail about Baig in my discussion of the claim limitations below.

B. US PAT. APP. PUB. NO. 2006/0271690 ("BANGA690")

101. Banga690 (Ex. 1014) is a U.S. Patent Application Publication filed on May 11, 2006 and published on November 30, 2006. I understand that Banga690 qualifies as prior art under 35 U.S.C. §§ 102(a) and 102(e).

102. Banga690 discloses a system for providing a user profile that is based off of access information gathered from user devices at an access point. Ex. 1014, ¶¶ [0013], [0028], [0046]-[0047], [0059]. Banga690's system includes multiple network access devices connected to an access point of a communication network, content providers that provide information to the users of the network access devices, and a "client relationship server" (CR server) that generates a device record and corresponding user profile. Ex. 1014, Fig. 2, ¶¶ [0023]-[0031].



Ex. 1014, Fig. 2

103. The CR server connects to the communication network but is separate from the content providers and tracks user access activity irrespective of whether the user registers or logs into the content provider. Ex. 1014, ¶¶ [0006]-[0007], [0028], [0059]. Banga690 discloses that the CR server may include an information collection engine, a profile engine, and a profile storage system for generating and storing profiles of user activity. Ex. 1014, Fig. 3, ¶¶ [0041]-[0048]. Specifically, Banga690's CR server receives access information of devices at the access point in the form of device records for use in generating user profiles that include identifiers of the devices, the IP address associated with the device identifiers, access information, and other information associated with the network access devices. Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0028], [0041]-[0048], [0059]. The CR server in

Banga690 stores a record of which access point was used to access the communication network each time the CR server receives the same device identifier and includes that information in the user profile. Ex. 1014, ¶¶ [0034], [0038], [0046]-[0047], [0056].

104. The profile engine generates the user profiles that include the information associated with the network access devices and individual or group characteristics of the users of the network access devices. Ex. 1014, ¶¶ [0047]-[0048], [0057]-[0058]. Banga690 discloses that one use for these user profiles is to provide user preferences to an advertisement server or content provider to assist third parties in providing advertisements to the users based on user preferences. Ex. 1014, ¶¶ [0059]-[0060].

105. Therefore, it is my opinon that Banga690 is analogous art to the '260 Patent. It also is my opinion that a POSA would have found that various combinations of Banga690's teachings were predictable variations of such teachings given Banga690's similar reference to multiple, plural embodiments when describing them. *See*, e.g., Ex. 1014, [0009] (summarizing Banga690's disclosures with reference to multiple, plural "embodiments"); *see also id.*, [0022]-[0029] (referring to "embodiments" with reference to Figure 1), [0030]-0040] (referring to "embodiments" with reference to Figure 2), [0043]-[0051] (referring to "embodiments" with reference to Figure 3), [0053]-[0060] (referring

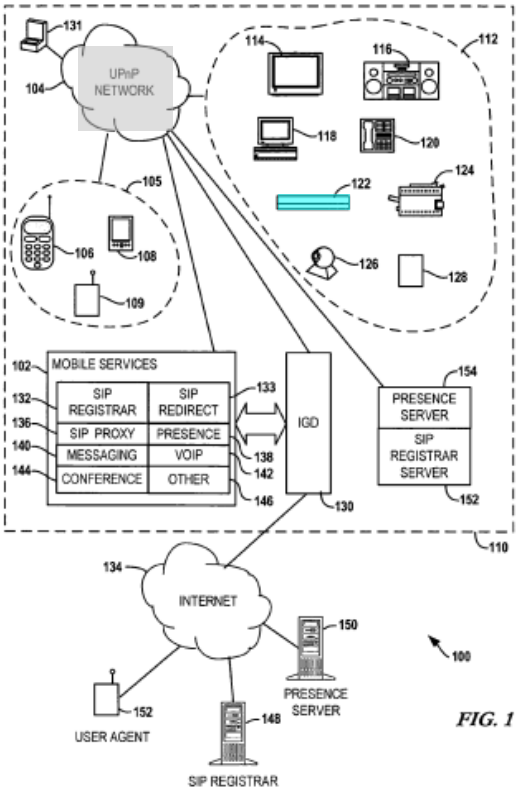
to "embodiments" with reference to Figure 4), [0061]-[0070] (referring to "embodiments" with reference to Figure 5), [0071]-[0076] (referring to "embodiments" with reference to Figure 6), [0082] (similarly suggesting variations to the disclosed embodiments by noting that "[i]t will be apparent to those skilled in the art that various modifications may be made and other embodiments can be used without departing from the broader scope of the invention" and that "other variations upon the exemplary embodiments are intended to be covered by the present invention"). Therefore, given Banga690's reference to multiple, plural "embodiments" and the fact that such features are disclosed adjacent to one another in Banga690, a POSA would have recognized that a leap of inventiveness was not required to combine them with each other or collectively apply them to Baig as I explain below. *See* Ex. 1014, [0082] (likewise suggesting a POSA would recognize variations to the disclosed embodiments).

C. US PAT. APP. PUB. NO. 2006/0128364 ("COSTA")

106. Costa (Ex. 1011) is a U.S. Patent Application Publication published on June 15, 2006. I understand that Costa qualifies as prior art under 35 U.S.C. §§ 102(a) and 102(e).

107. Costa discloses a method of providing mobile-specific services for mobile devices. Ex. 1011, Abstract. Costa discloses providing mobile-specific services for devices capable of being coupled to a network that allows devices to

exchange data in a local environment, such as a public wireless hotspot. Ex. 1011, Fig. 1, ¶¶ [0035]-[0036]. Devices that join the network (e.g., via the wireless hotspot) obtain an IP address and are subsequently able to transfer content among other networked devices. Ex. 1011, ¶¶ [0007], [0037]. Costa discloses that one example of a device that may be coupled to a network, obtain an IP address, and transfer content is a set-top box (**blue**, below). Ex. 1011, Fig. 1, ¶¶ [0035]-[0036].



Ex. 1011, Fig. 1 (annotated)

108. Therefore, it is my opinon that Costa is analogous art to the ’260 Patent

D. EXCERPTS FROM E. D. ZWICKY ET AL., BUILDING INTERNET FIREWALLS (2D ED. 2000) ("ZWICKY")

109. Zwicky (Ex. 1012) is a printed publication published in June of 2000 with a United States Copyright in the year 2000. I understand that Zwicky qualifies as prior art under 35 U.S.C. § 102(b).

110. Zwicky discloses methods of performing network address translation (NAT), allowing a network to use one set of network addresses (such as IP addresses) internally and a different set when dealing with external networks. Ex. 1012, p. 114. Zwicky discloses that a particular implementation of NAT translates both ports and IP addresses that can be used when multiple clients are connected to a router having a single (i.e., common) IP address. Ex. 1012, Figure 5-4, pp. 114-16. For example, as shown in Figure 5-4 below, two client devices with unique device identifiers may be routed through an address translation system (e.g., performing NAT) and receive unique public IP address-port combinations for communicating with outside servers. Ex. 1012, Figure 5-4, pp. 114-16.

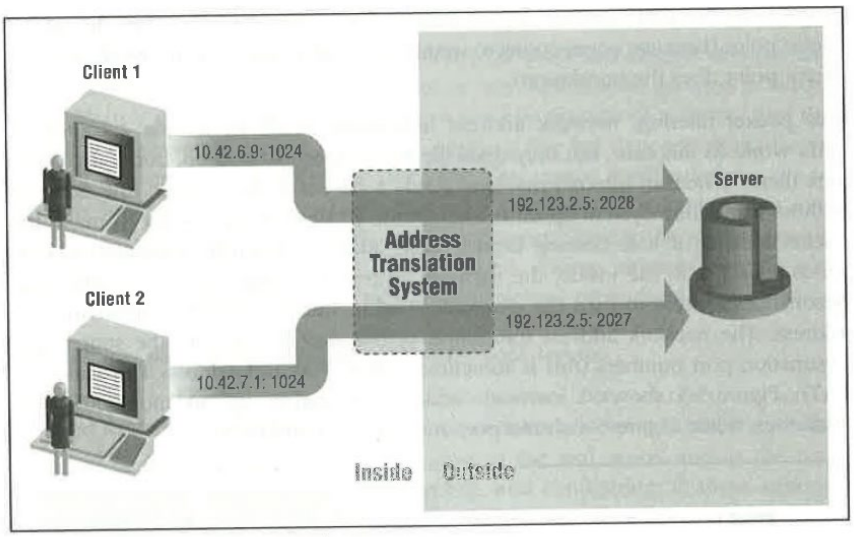


Figure 5-4. Port and address translation

Ex. 1012, Figure 5-4

111. Therefore, it is my opinon that Zwicky is analogous art to the '260 Patent.

E. US PAT. APP. PUB. NO. 2008/0201731 ("HOWCROFT")

112. Howcroft (Ex. 1016) is a U.S. Patent Application Publication filed on February 15, 2007. I understand that Howcroft qualifies as prior art under 35 U.S.C. § 102(e).

113. Howcroft discloses a targeted advertising management system (TAMS) that provides targeted advertisements to user devices based on a user profile. Ex. 1016, Fig. 1, ¶¶ [0030], [0032], [0038], [0064], [0067]-[0071]. Howcroft's system creates user profiles based on a user's search history, which is logged in a behavioral database included in the TAMS, and on registration information provided by the user. Ex. 1016, ¶¶ [0030], [0032], [0064]-[0066]. The TAMS also includes a

targeted advertising selection system (TASS) that can be used to provide targeted advertisements to user devices (such as IPTVs) based on the profiles. Ex. 1016, Fig. 1, ¶¶ [0030], [0032], [0038], [0063]-[0064], [0067]-[0071].

114. In providing targeted ads, Howcroft's TAMS accesses information of available advertisements and reviews the behavior of the user (e.g., information in the user profile) to select which advertisements from which advertisers to place in an advertisement window. Ex. 1016, ¶¶ [0030], [0032], [0038], [0064], [0067]-[0071], [0082]-[0084]. The TAMS may make use of contextual information included in the profile, such as device characteristics of the device the ad will be displayed on; for example, device identifiers. Ex. 1016, ¶¶ [0061], [0065]. Howcroft discloses that the selected advertisements may be sent to a device such as an IPTV for display. Ex. 1016, ¶¶ [0035], [0042], [0048]-[0050], [0070]-[0071].

115. Therefore, it is my opinon that Howcroft is analogous art to the '260 Patent.

F. US PAT. APP. PUB. NO. 2003/0083938 ("SMITH")

116. Smith (Ex. 1021) is a U.S. Patent Application Publication filed October 29, 2001 and published May 1, 2003. I understand that Smith qualifies as prior art under 35 U.S.C. § 102(b).

117. Smith discloses a system for profiling users by tracking their online user activity. Ex. 1021, Abstract, ¶¶ [0035]-[0038], [0044]. Smith further discloses

using the user profiles with a content selector to provide advertisements to the users. Ex. 1021, ¶ [0038]. Smith's system provides the profile data to the content selector, which uses the profile data to select viewing content (e.g., advertisements) to provide to the user. *Id*.

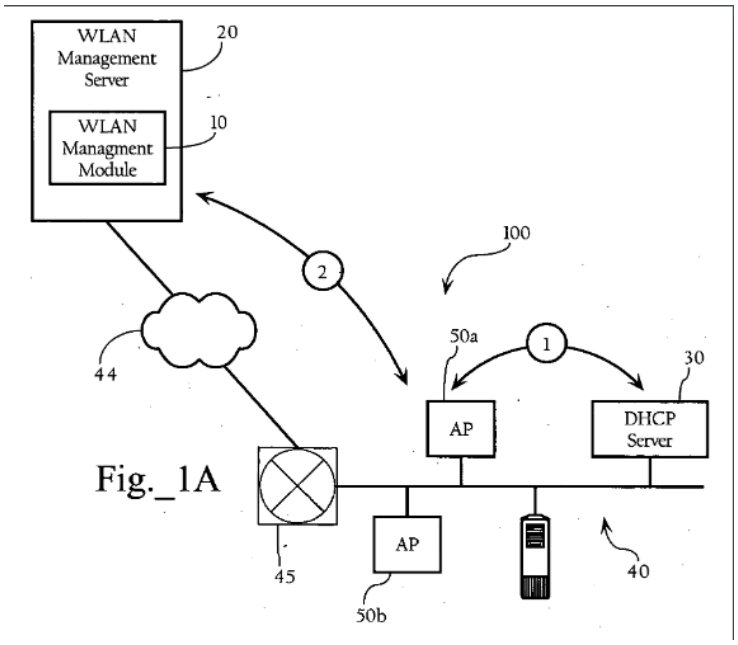
118. Smith's profiling system generates user profiles by identifying devices across different communication sessions using cookies. Ex. 1021, ¶¶ [0006], [0015], [0017], [0034]. Smith uses "computer identification data, such as cookie data or IP address . . . as a key to store the generated profile in the database." Ex. 1021, ¶ [0038].

119. Therefore, it is my opinon that Smith is analogous art to the '260 Patent.

G. US PAT. APP. PUB. NO. 2007/0025306 ("COX")

120. Cox (Ex. 1017) is a U.S. Patent Application Publication filed August 1, 2005 and published February 1, 2007. I understand that Cox qualifies as prior art under 35 U.S.C. §§ 102(a) and 102(e).

121. Cox discloses a system and method for dynamically assigning identities to access points. Ex. 1017, Abstract, [0012]. Cox discloses that an access point (AP) communicates with a DHCP server to obtain an internet protocol (IP) address after initiating a DHCP session. Ex. 1017, Fig. 1A, ¶¶ [0012], [0022], [0025].



Ex. 1017, Fig. 1A

Once a dynamic IP address has been obtained, the access point uses the IP address to allow for automatic configuration of operational parameters. Ex. 1017, ¶¶ [0012], [0022]-[0023], [0025]-[0026].

122. Therefore, it is my opinon that Cox is analogous art to the ’260 Patent. It also is my opinion that a POSA would have found that various combinations of Cox’s teachings were predictable variations of such teachings given Cox’s similar reference to multiple, plural embodiments when describing them. *See*, e.g., Ex. 1017, [0006]-[0011] (referring to “one embodiment” or “another embodiment” with reference to Figures 2-4 and 6-7), [0014] (referring to “a specific embodiment” with reference to Figure 1A), [0017]-[0018] (referring to “one embodiment” with reference to Figure 6), [0024] (referring to “one embodiment” with reference to

Figure 2), [0061]-[0070] (referring to "embodiments" with reference to Figure 5), [0027] (referring to "an embodiment" with reference to Figure 4),. Therefore, given Cox's reference to multiple embodiments and the fact that such features are disclosed adjacent to one another in Cox, a POSA would have recognized that a leap of inventiveness was not required to combine them with each other or collectively apply them to Baig as I explain below. *See* Ex. 1017, [0032] (likewise suggesting a POSA would recognize variations to the disclosed embodiments).

H. US PAT. NO. 6,415,322 ("JAYE")

123. Jaye (Ex. 1026) is a U.S. Patent filed February 26, 1999 and issued July 2, 2002. I understand that Jaye qualifies as prior art under 35 U.S.C. § 102(b).

124. Jaye describes a method of creating a "global interest profile" of a user of a computer device based on user interaction with local servers. Ex. 1026, Fig. 7, Abstract, 2:16-24, 4:30-39, 5:5-11, 5:49-58. The global interest profile is compiled from interactions such as the web pages the user accesses via local servers. *Id*. A central "enterprise server" receives the user interaction information from the local servers and records it in a database of user profile information. Ex. 1026, Fig. 7, 2:16-24, 5:5-11. Jaye discloses that the user profile information is automatically delivered to the enterprise server via redirection, such as by providing an HTTP response message to a user's browser which forces the browser to redirect to the enterprise server. Ex. 1026, 2:15-24, 6:32-58.

125. Therefore, it is my opinon that Jaye is analogous art to the ’260 Patent.

I. US PAT. APP. PUB. NO. 2007/0180147 (“LEIGH”)

126. Leigh (Ex. 1020) is a U.S. Patent Application Publication filed February 1, 2006 and published August 2, 2007. I understand that Leigh qualifies as prior art under 35 U.S.C. § 102(e).

127. Leigh discloses a central “Ad Content Server” that inserts advertisements to web pages on the Internet in response to requests from the web pages for advertisements. Ex. 1020, Figs. 1A, 2A, Abstract, ¶¶ [0022], [0053]-[0054]. In a specific example, Leigh describes that the Ad Content Server may insert targeted advertisements into webpages for presentation to users at a wireless hotspot. Ex. 1020, ¶¶ [0002]-[0003], [0013], [0047].

128. Therefore, it is my opinon that Leigh is analogous art to the ’260 Patent.

J. US PAT. APP. PUB. NO. 2002/0124050 (“MIDDELJANS”)

129. Middeljans (Ex. 1023) is a U.S. Patent Application Publication filed February 7, 2002 and published on September 5, 2002. I understand that Middeljans qualifies as prior art under 35 U.S.C. § 102(b).

130. Middeljans discloses an arrangement for distributing content (e.g., advertisements) based on a maintained user profile. Ex. 1023, Abstract, ¶¶ [0003], [0008]-[0010], [0015], [0038]. Middeljans discloses that the user profile is maintained by a profiling center that collects information from various sources to

generate aggregated user profiles. Ex. 1023, Abstract, ¶¶ [0008]-[00010], [0015], [0046]-[0052], [0058]. Middeljans also discloses that said profiles are valuable to entities such as content aggregators and/or advertising agencies. *Id*.

131. Therefore, it is my opinon that Middeljans is analogous art to the '260 Patent.

K. US PAT. APP. PUB. NO. 2005/0096980 ("KONINGSTEIN")

132. Koningstein (Ex. 1024) is a U.S. Patent Application Publication filed December 31, 2003 and published on May 5, 2005. I understand that Koningstein qualifies as prior art under 35 U.S.C. § 102(b).

133. Koningstein discloses a method of delivering targeted advertisements. Ex. 1024, Abstract, ¶¶ [0039]-[0040], [0043]-[0048]. Koningstein's method includes advertisement providers that provide ads in web pages displayed to end users based on pricing parameters. *Id.*, ¶¶ [0043]-[0045], Fig. 3. Koningstein discloses that in some examples, advertisers are "only obligated to pay if the end user meets some performance parameter" and/or "some [] monetization event occurs." *Id*., ¶ [0045].

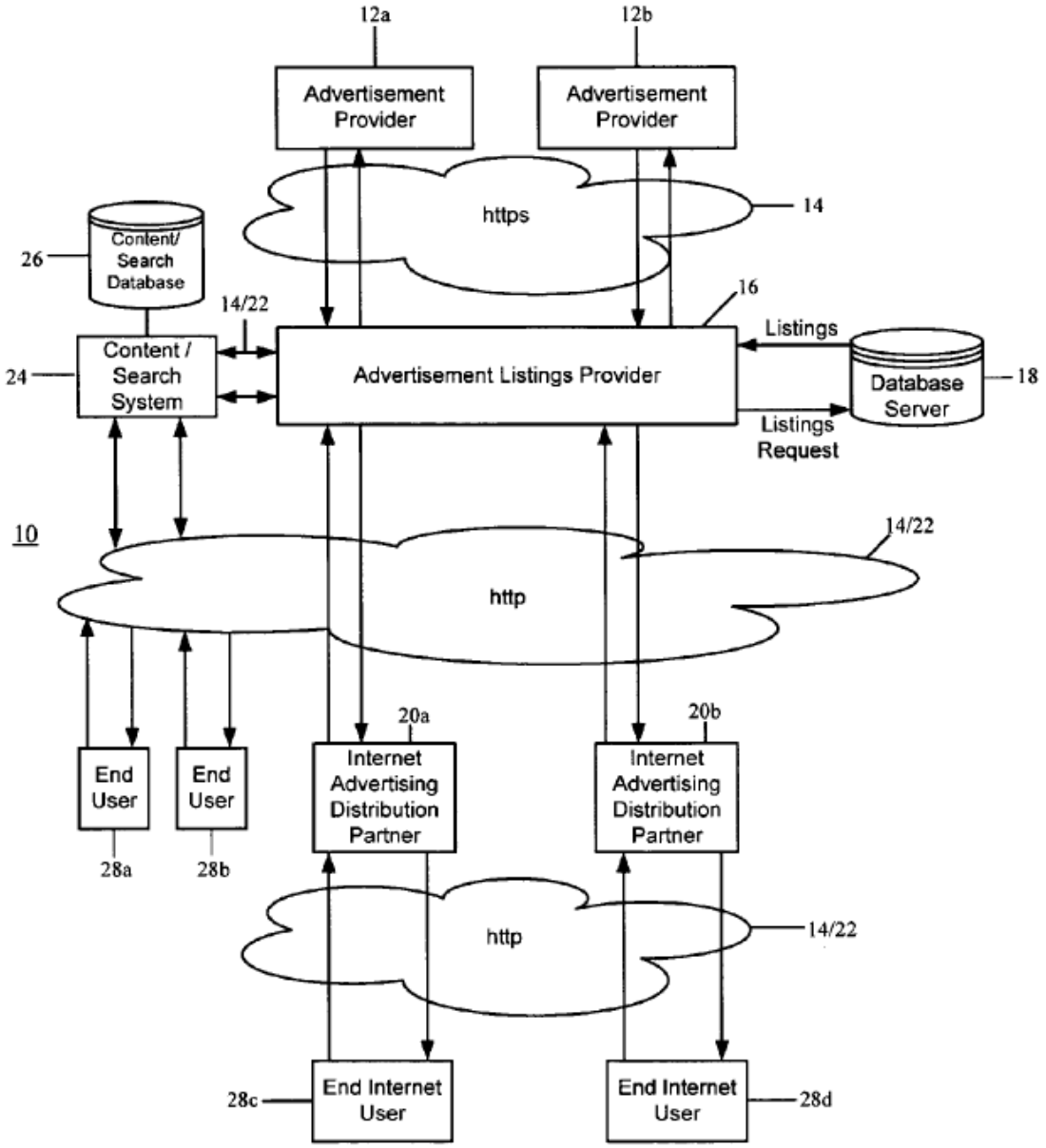


Fig. 3

Ex. 1024, Fig. 3

134. Therefore, it is my opinon that Koningstein is analogous art to the ’260 Patent.

L. KOREAN PAT. APP. NO. 2006/0065969 ("HAN")

135. Han (Ex. 1018) is a Korean Patent filed December 11, 2004 and published June 15, 2006. I understand that Han qualifies as prior art under 35 U.S.C. § 102(a).

136. Han discloses a management server for processing dynamic IP address change events. Ex. 1018, Summary, ¶¶ [0011]-[0012], [0016]-[0024], [0030], [0042], [0047]-[0050]. Specifically, Han describes that the management server maintains a database that registers and that stores changes to IP addresses that have been dynamically assigned. Ex. 1018, Summary, ¶¶ [0011]-[0012], [0016]-[0024], [0030], [0042], [0047]-[0050], Claims 2, 3. Han describes that its management server manages the IP addresses of devices (e.g., terminals that serve as access points for the Internet) that operate on standby timers, causing the devices to periodically update their IP addresses. Ex. 1018, ¶¶ [0039]-[0043].

137. Therefore, it is my opinon that Han is analogous art to the '260 Patent.

M. US PAT. APP. PUB. NO. 2008/0263633 ("BANGA633")

138. Banga633 (Ex. 1025) is a U.S. Patent Application Publication filed on September 28, 2006 and published on October 23, 2008. I understand that Banga633 qualifies as prior art under 35 U.S.C. § 102(e).

139. Banga633 discloses a system of tracking user profile information and targeting content to end users through their devices. Ex. 1025, Abstract, ¶¶ [0012]-

[0035]. To track user profile information, Banga633's system tracks a user device and its online activity. Ex. 1025, Abstract, ¶¶ [0012]-[0035], [0084], [0119], [0122]. For example, a "profile information tag (UID) will be transmitted to every destination (website) that is accessed with this device thus enabling the customization of end-user content specific to UID (universal identifier)." Ex. 1025, ¶¶ [0013]-[0022], [0098], [0119]. In this way, "all of the content transmitted to the user (e.g., first data, splash pages, etc.) may be formatted and/or indexed to the specific type of access device utilized by the user." Ex. 1025, ¶ [0119].

140. Therefore, it is my opinon that Banga633 is analogous art to the '260 Patent.

N. US PAT. APP. PUB. NO. 2006/0274741 ("WING")

141. Wing (Ex. 1022) is a U.S. Patent Application Publication filed on June 7, 2005 and published on December 7, 2006. I understand that Wing qualifies as prior art under 35 U.S.C. §§ 102(a) and 102(e).

142. Wing discloses a system for connecting multiple devices to services (e.g., the Internet) through a gateway using a common public IP address. Ex. 1022, Fig. 2A, ¶¶ [0022]-[0030]. Wing's system includes a server which stores identification information for each device communicating with the gateway. *Id*., ¶ [0009]. For example, Wing's server stores information such as the gateway's public IP address, a NAT port number, and a unique identifier. *Id*. The devices

communicating with the gateway monitor their addresses for changes by communicating with Wing's server and, if a change is detected, report the updated IP address to to Wing's server. Ex. 1022, ¶¶ [0009], [0022]-[0030], [0039]-[0046].

143. Therefore, it is my opinon that Wing is analogous art to the '260 Patent.

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

144. In my opinion, the relevant field of art for the '260 Patent is a data communication method and topology for targeted advertising. Ex. 1001 at Abstract, 1:7-11, 7:59-65.

145. I understand that obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art (POSA) at the time of the alleged invention, which, for purposes of this declaration, I have assumed is the earliest claimed priority date of April 17, 2007.

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

147. It is my opinion that, for the ’260 Patent, a POSA would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a similar discipline, and two years of experience with the design and/or implementation of network-based content delivery systems and Internet advertising.

148. I worked in the relevant field with persons meeting this definition of a POSA at, and leading up to, the time of the alleged invention of the ’260 Patent (*i.e.*, April 17, 2007). Therefore, I am familiar with the knowledge and skills that such persons had at the time. In my opinion, a POSA’s skill set would have included client level and server level programming skills. More specifically, a POSA’s skill set would have included computer programming languages and markup languages (*e.g.*, C, C++, C#, Java, JavaScript, Visual Basic.NET, HyperText Mark-up Language (HTML), XML) and knowledge of the HyperText Transfer Protocol (HTTP). A POSA’s skill set would have also included client-server architecture and database design skills.

149. In this Declaration, wherever I refer to a POSA, it should be understood that I’m referring to a hypothetical person at the time of the alleged invention of the ’260 Patent (*i.e.*, April 17, 2007) meeting the description I have provided in this section.

XI. CLAIM CONSTRUCTION

150. I understand that my analysis requires an understanding of the scope of the claims of the ’260 Patent. I understand that claim terms subject to *inter partes* review, absent some other definition provided in the patent, are given their plain and ordinary meaning to a POSA in light of the patent specification. I understand that Petitioner’s position is that plain and ordinary meaning should apply to all terms for purposes of this proceeding. Therefore, in my analysis below, I have assumed that all claim terms are given their plain and ordinary meaning as would have been understood by a POSA reading the patent specification at the time of the claimed invention (*i.e.*, April 17, 2007). In addition, my analysis also addresses alternative constructions for the following terms in view of the related proceedings and prior claim constructions.

XII. ANALYSIS

151. For the reasons that I discuss in detail below, it is my opinion that, at least by April 17, 2007 (the earliest claimed priority date), claims 1-152 of the ’260 Patent would have been obvious to a POSA. In short, it is my opinion that:

- Claims 1-5, 7-9, 12, 15, 17, 21-22, 24, 26-28, 31-32, 34, 37-39, 42, 44, 53-58, 61-62, 69, 71-80, 83-84, 86-88, 91, 94, 96, 100-101, 103, 106, 116-119, 121-122, 125, 128, 135, 137-148, and 151-152 would have been obvious based on Baig in view of Costa and Zwicky;

- Claims 1-5, 7-9, 12, 15, 17-18, 21-22, 24, 26-28, 31-32, 34-40, 42, 44-48, 52-58, 61-65, 68-69, 71-80, 83-84, 86-88, 91, 94, 96-97, 100-101, 103, 106-110, 114-119, 121-122, 125, 128-131, 134-135, 137-148, and 151-152 would have been obvious based on Baig in view of Costa and Banga690;
- Claims 11 and 90 would have been obvious based on Baig in view of Costa, Zwicky, and Cox;
- Claims 11 and 90 would have been obvious based on Baig in view of Costa, Banga690, and Cox;
- Claims 13-14, 16, 92-93, and 95 would have been obvious based on Baig in view of Costa, Zwicky, Cox, and Han;
- Claims 13-14, 16, 92-93, and 95 would have been obvious based on Baig in view of Costa, Banga690, Cox, and Han;
- Claims 17, 19-20, 96, and 98-99 would have been obvious based on Baig in view of Costa, Zwicky, and Leigh;
- Claims 17, 19-20, 96, and 98-99 would have been obvious based on Baig in view of Costa, Banga690, and Leigh;
- Claims 54, 75, 116, and 141 would have been obvious based on Baig in view of Costa, Zwicky, and Wing
- Claims 54, 75, 116, and 141 would have been obvious based on Baig in view of Costa, Banga690, and Wing

- Claims 41, 105, and 127 would have been obvious based on Baig in view of Costa, Banga690, and Jaye.
- Claims 6, 8-10, 21, 23, 32, 51, 55, 59-60, 67, 76, 81-82, 85, 87-89, 100, 102, 113, 117, 120, 123-124, 126, 133, 142, 145, and 149-150 would have been obvious based on Baig in view of Costa, Zwicky, and Howcroft;
- Claims 6, 8-10, 21, 23, 32, 51, 55, 59-60, 67, 76, 81-82, 85, 87-89, 100, 102, 113, 117, 120, 123-124, 126, 133, 142, 145, and 149-150 would have been obvious based on Baig in view of Costa, Banga690, and Howcroft;
- Claims 49-50, 66, 70, 111-112, 132, and 136 would have been obvious based on Baig in view of Costa, Banga690, and Smith
- Claim 33, would have been obvious based on Baig in view of Costa, Zwicky, and Middeljans;
- Claims 25, 29, 33, and 104 would have been obvious based on Baig in view of Costa, Banga690, and Middeljans
- Claims 30 and 43 would have been obvious based on Baig in view of Costa, Zwicky, Banga690, Middeljans, and Koningstein;
- Claims 50, 70, 112, and 136 would have been obvious based on Baig in view of Costa, Zwicky, Banga690, and Banga633;

152. Further, I understand that Petitioner has assigned labels (e.g., [1PRE], [1A], [1B], etc.) to different limitations of the claims to facilitate analysis of the

claims. Accordingly, in my analysis below, I have referred to the claim limitations using those same labels, which are shown in the Claim Listing Appendix attached to this declaration as Appendix C.

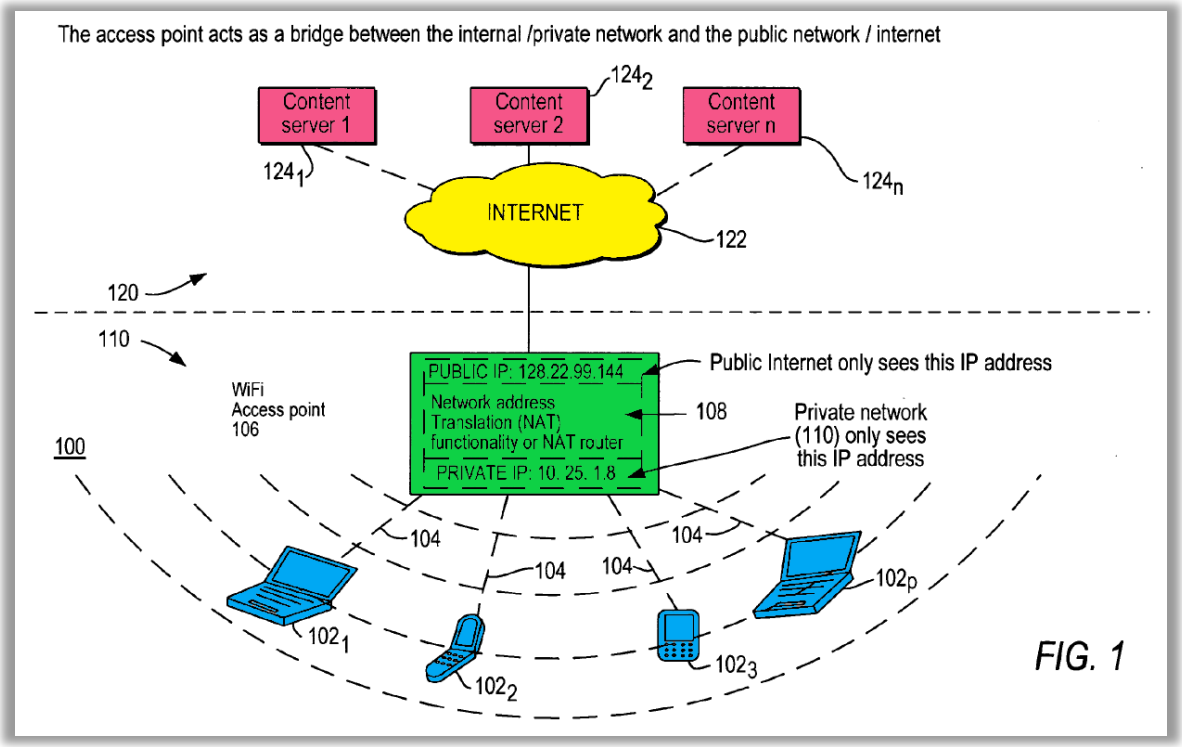
A. GROUNDS A-B: BAIG IN VIEW OF COSTA AND ZWICKY AND/OR BAIG IN VIEW OF COSTA AND BANGA690

153. The ’260 Patent is related to “a method for delivering targeted television advertisements based on online behavior,” where “[u]sing user profile information derived from online activity from one of the online access IP addresses, a television advertisement is selected . . . .” Ex. 1001, Abstract, 7:59-65; see also *id.*, 1:7-11. Baig discloses a “method and apparatus for providing vicinity-based community services at a wireless access location by a public network service provider” (Ex. 1007, Abstract) such as “[t]argeted advertising at wireless hotspots using vicinity-based networks” where “the advertisers can target the audience of a particular hotspot according to the profile, e.g., age/gender etc. of the users….” Ex. 1007, ¶ [0093], see also *id.*, ¶¶ [0038], [0042]-[0043], [0052]-[0054], [0089], [0095], [0104], [0124], Figs. 1, 2. As I explain in further detail throughout this declaration, it is my opinion that a POSA would have understood that Baig’s system provides community services, such as delivering targeted advertisements based on online behavior, to devices accessing Baig’s servers via a common IP address. I also note that it was well-known at the time of the alleged invention of the ’260 Patent for IP addresses to be dynamically assigned (e.g., using DHCP) for a variety of reasons.

Ex. 1017, Abstract, ¶¶[0002], [0012]-[0014], [0022]-[0023]; Ex. 1018, ¶¶[0011]-[0012], [0016]-[0024], [0030], [0042], [0047]-[0050]; Ex. 1061, 3:31-4:1, 6:63-66. For example, a POSA would have recognized and understood that dynamic assignment was one way to allow, e.g., newly added/replaced network devices such as access points to be quickly and accurately configured. Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]; Ex. 1007, ¶¶ [0046]-[0052], Figs. 1, 2. This would, of course, minimize network downtime for devices connecting to the network (e.g., through the access point). Additionally, a POSA would have also recognized that dynamic assignment of IP addresses would allow the use and re-use of IP address and that this would have been beneficial given that internet service providers were increasingly facing IP address shortages. Ex. 1061, 3:25-33.

154. As shown in the annotated Figure 1 below, Baig's computer system includes multiple content servers 124_n (**pink**) that are coupled to the Internet 122 (**yellow**), to which WiFi wireless access point 106 (**green**) is also coupled. Ex. 1007, ¶¶ [0042]-[0043], [0052]-[0053], Figs. 1, 2. Baig describes that its content servers "include[] at least one processor, memory and support circuitry for running programs…" which a POSA would understand to comprise a "programmed hardware computer system." Ex. 1007, ¶ [0052]. Baig's WiFi hotspot 110 enables multiple computing devices 102_p (**blue**) to communicate with each other and content

servers 124 over the Internet 122 via access point 106. Ex. 1007, ¶¶ [0042]-[0043], Figs. 1, 2.



Ex. 1007, Fig. 1 (annotated).

155. As I explain further in the analysis below, where I apply Baig to the claims, it is my opinion that Baig's system would render many features of the '260 Patent's claims obvious to a POSA. To any extent that Baig does not explicitly disclose particular features it is my opinion that it would have been obvious to a POSA to combine one or more additional prior art references described herein to render those features obvious, as I describe in more detail throughout Section XII.

A POSA would have modified Baig to include Costa's Set-Top Box:

156. Baig does not explicitly disclose that the multiple mobile devices 102 include a set-top box, but does discuss said mobile devices 102 being various different types of devices for delivery of multimedia (e.g., television content) information from content servers. Ex. 1007, ¶¶ [0042]-[0043], [0032]. It would have been obvious to a POSA that these different types of devices would include a set-top box as a natural extension of providing Internet access to other similar computing devices such as phones, laptops, etc., as described in Baig. Ex. 1007, ¶¶ [0003], [0042]-[0043], [0054], [0089], [0095], [0104], [0124], Figs. 1, 2.

157. It is my opinion that a POSA would have found it obvious to combine Baig with Costa such that the combined system would include Costa's set-top box with Baig's mobile devices 102 connected to access point 106. Like Baig, Costa teaches wireless hotspot systems operating in public settings. Ex. 1007, ¶¶ [0006], [0039], [0043]-[0047], [0049], [0057], [0064], [0067], [0087], [0101]; Ex. 1011, ¶¶ [0006], [0035]-[0036]. For example, both Baig and Costa give an example of utilizing their disclosures in wireless hotspot systems operating in a public environment. Ex. 1007, Abstract, ¶¶ [0006], [0039], [0101]; Ex. 1011, ¶¶ [0006], [0035]-[0036], [0042], Fig. 1. Costa additionally describes a network-connected set-top box operating within its system at such public wireless hotspot environments. Ex. 1011, ¶¶ [0035]-[0036], [0042], Fig. 1. As I describe in further detail below, a POSA would have understood that modifying Baig to include Costa's set-top box

would simply result in a system as described in Baig with a set-top box connected to the Internet (for example, 122) through the same common access point (for example, wireless access point 106) as the other mobile devices 102 at the hotspot. That set-top box, and the other devices connected to the common access point, would be able to receive and display multimedia content (e.g., television programming, webpages, audio, video, etc.) through the Internet and the same access point. Ex. 1007, ¶¶ [0042]-[0043]; Ex. 1011, ¶¶ [0032], [0035]-[0036], [0042], Fig. 1. Additionally, Baig teaches that all of the devices 102 that are connected to a same wireless access point 106 share a common IP address. Ex. 1007, ¶¶ [0038], [0052], [0074], [0076], Fig. 6. Thus, a POSA would have understood that because the set-top box would be connected to the same wireless access point as other devices 102 in the combined system, the set-top box would share a common IP address with those other devices 102 at that access point.

158. Baig further teaches creating vicinity-based groups, based on the common IP address, "to provide services to the member users of the group." Ex. 1007, ¶ [0059]; see also *id*., ¶¶ [0038], [0047], [0052]. Baig provides the services through a vicinity-based service provider (VCSP), hosted by a server, that provides web pages for users of the mobile devices 102 to access information and services on the Internet. Ex. 1007, ¶¶ [0053], [0055]-[0060], [0063]-[0064], [0074]. For example, Baig describes that users in these vicinity-based groups "can log into the

homepage of [Baig's] website to participate in or receive various services from the VCSP at their local hotspot or at other hotspots forming the mesh network." Ex. 1007, ¶ [0067]. Baig further describes that, once a user has accessed the VCSP (202) at an access point (e.g., via a mobile device 102), the VCSP webpage 600 includes the user and mobile device 102 in a list 606 displayed by web page 600. Ex. 1007, ¶ [0076], Fig. 6. Thus, a POSA would have understood that the set-top box at that access point 106 would be included in a vicinity-based device group represented by list 606 of Baig's website 600. Ex. 1007, ¶¶ [0038], [0052], [0074], [0076], Fig. 6. Additionally, because the set-top box shares the same access point 106 as the other devices 102 in the vicinity-based device group, a POSA would have understood that network traffic from outside of the hotspot would be routed to the set-top box and the other devices 102 via the same (common) IP address. Similarly, network traffic from the set-top box and other devices 102 would be routed via the common IP address of the access point 106 to any target destination outside of the hotspot.

159. It is my opinion that a POSA would have had the skills, knowledge, and motivation to incorporate Costa's set-top box into Baig's system VCSP system. The combination would have been obvious because Baig and Costa are both directed to public wireless hotspot systems that provide Internet access to a number of user computing devices. Ex. 1007, ¶¶ [0042]-[0043], [0089], [0095], [0104], [0124], Figs. 1, 2; Ex. 1011, ¶¶ [0007], [0035]-[0036], [0042], Fig. 1. Costa's techniques of

connecting a set-top box to the wireless hostpot involves utilizing well-known wireless networking technologies to couple devices 112 to the network 104, including 802.11 Wi-Fi communication protocols such as those used in Baig's system. Ex. 1011, ¶¶ [0007], [0035]-[0037], [0042], Fig. 1; Ex. 1007, ¶¶ [0043], [0049]. Modifying Baig's system to include a set-top box with the devices 102 would have been a natural extension of providing Internet access to other computing devices such as phones, laptops, etc., as described in Baig. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0095], [0104], [0124], Figs. 1, 2. Indeed, as I explained above, Costa discloses such an environment in which mobile devices may share an access point at a public wireless hotspot for Internet access with other computing devices such as set-top boxes and the like.

160. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to modify Baig and combine Baig with Costa in the ways that I have described. See Section IV (referring to obviousness rationale (G)). A POSA would have been motivated to combine Baig and Costa in this way because the combination provides the additional benefit of having a wider range of device types available at a particular access point. For instance, returning to the coffee shop example provided by Baig, including a set-top box in the devices available at Baig's coffee shop would have allowed individuals operating other devices 102 (e.g., phones, laptops, etc.) to view multimedia content, such as

television content, via a television connected to the set-top box. Ex. 1007, Abstract, ¶¶ [0006], [0039], [0101]; Ex. 1011, ¶¶ [0006], [0035]-[0036], [0042], Fig. 1. A POSA would have recognized that entertainment in a public venue such as a retail business is often beneficial to engage the user's interest and maintain their presence at that location.

161. Additionally, including a set-top box would have enhanced Baig's ability to target individuals based on demographics, such as by providing vicinity-based targeted advertising based on, for example, what television content (e.g., content displayed on the television including webpages and television programming) is being provided to individuals through the set-top box. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2. Based on the above-described similarities between Costa's and Baig's systems, in addition to the additional benefits offered by Costa, a POSA would have been motivated to apply the teachings of Costa to Baig's system to implement a set-top box at an access point to provide television content at that access point.

162. It is also my opinion that other rationales further support my finding that the combination of Baig and Costa would have been obvious. First, the combination of Baig and Costa would have been obvious because the combination merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The

known prior art elements are Baig's VCSP system providing Internet access to different types of devices at a public wireless hotspot through a common access point and Costa's system of operating a set-top box within a similar public wireless hotspot. Ex. 1007, Abstract, ¶¶ [0006], [0039], [0101]; Ex. 1011, ¶¶ [0006]-[0007], [0035]-[0037], [0042], Fig. 1. As discussed above, a POSA would have recognized that both Baig's computer system and Costa's description of a system where its set-top box might be used are wireless hotspot systems that provide Internet access to a number of computing devices. Ex. 1007, ¶¶ [0054], [0062], [0090], [0094]-[0095], [0103], [0107]-[0108]; Ex. 1011, ¶¶ [0007], [0035]-[0036], [0042], Fig. 1. These known elements would have been combined according to known methods, such as Baig's method of connecting devices at a hotspot through a common access point. Ex. 1007, ¶¶ [0006]-[0012], [0038] ("creating vicinity-based communities over the Internet by a vicinity-based community service provider (VCSP) for wireless mobile devices of end-users that have accessed the VCSP via a wireless access point at a wireless hotspot."), [0039]-[0040], [0052]-[0053], Figs. 1, 2. Finally, the combination yields predictable results. Specifically, combining Baig with Costa yields an access point connecting multiple devices at a hotspot, including a set-top box, to the VCSP hotspot access point 106 to participate in VSP services.

163. Further, the combination of Baig and Costa merely uses a known technique to improve similar devices in the same way. See Section IV (referring to

obviousness rationale (C)). The known technique is Costa's technique of including devices such as a set-top box in a public wireless hotspot system. Ex. 1011, ¶¶ [0007], [0035]-[0036], [0042], Fig. 1. Baig's system is similar to Costa's in that it also teaches including devices in a public wireless hotspot system. Ex. 1007, Abstract, ¶¶ [0006], [0039], [0101]; Ex. 1011, ¶¶ [0007], [0035]-[0036], [0042], Fig. 1. Baig already discusses its hotspot being used for sharing content (e.g., music, video games, and music and movie advertisements), which is content that could be beneficially provided by a set-top box serving as a gateway for the music, games, television programming, and/or advertisements from content servers to a display device (e.g., a television). Ex. 1007, ¶¶ [0053], [0062], [0090], [0094]-[0095], [0103], [0107]-[0108], Fig. 9. Accordingly, Costa's technique would have improved Baig's similar wireless hotspot system by providing access to television content at the hotspot via a set-top box in the same way Costa's set-top box improves its own hotspot, i.e., being able to reach a larger audience that might not have their own devices (or might not be viewing their own device) when an advertisement is to be displayed.

164. Further, it is my opinion that a POSA would have also had the skills and knowledge to carry out the combination with a reasonable expectation of success. It would have been straightforward for a POSA to simply add Costa's set-top box as a device with the various other computing devices at Baig's hotspot. Baig

already discusses providing music content or movie information to particular access points via different types of devices, so a POSA would have found it obvious to include other devices that were already known to commonly provide this type of content, such as a set-top box, to provide additional media content at an access point. Ex. 1007, ¶¶ [0090], [0103], Figs. 9, 21. Adding a well-known device such as a set-top box to Baig's computer system (content servers) and associating the set-top box with other devices at an access point would require only minimal changes if any, and would have been well within the skill set of a POSA. *Id*. For example, a POSA would have understood that a set-top box would have operated in Baig's system in a same manner as the various other computing devices (e.g., devices 102) in Baig's system. It was well known to a POSA during the relevant time frame that a set-top box may be Internet-enabled and capable of displaying webpage content. Ex. 1027, ¶¶ [0011], [0058], [0071]-[0072], [0083]-[0084], [0096], Figs. 7-20; Ex. 1028, ¶¶ [0004], [0007], [0024], [0057], [0069], [0089]; Ex. 1029, ¶¶ [0029], [0043], [0047], [0135]-[0139], [0172], [0190]; Ex. 1030, ¶¶ [0042]-[0043], Fig. 2; Ex. 1031, 6:12-25, Fig. 4. Accordingly, in my opinion, a POSA would have understood that a set-top box, added to Baig's system, would have been capable of displaying the various webpages and web content provided by the Baig VCSP.

165. Continuing with the coffee shop example, a POSA would have considered including a set-top box at a coffee shop to provide television content

(e.g., television advertisements in television programming or in websites displayed on the television) to the individuals using the hotspot at the shop, and using Baig's system to provide targeted television content based on profile information associated with that coffee shop access point.

A POSA would have applied Zwicky's port translation techniques to Baig:

166. As I describe in further detail below at Section XII.A.1.b, Baig discloses that the content server(s) (which a POSA would understand is the "computer system") "electronically associate[s]" IP addresses. This is because the content server receives the IP address of the access point or hotspot when the mobile device attempts to connect. This is directly shown in Figure 2 of Baig. Ex. 1007, Fig. 2 ("3. All outgoing traffic from this hotspot will carry the IP address of the access point M….") (showing outgoing traffic routed to server 224 over Internet 122); see also *id.*, ¶¶ [0055]-[0057].

167. The content server in Baig therefore receives, in response to a login request from an individual using one of Baig's devices 102, the source IP address of the access point used to route packets to the mobile device 102. Ex. 1007, ¶¶ [0044] ("Each packet must contain the IP address of the source device and the IP address of the destination device."), [0045]. As I discussed above, Baig also generates and stores a list of all the devices 102 connected using a common IP address at Baig's

wireless access point, thus identifying and associating those devices 102. See Section IX.A; Ex. 1007, ¶¶ [0038], [0043], [0074]-[0076], Figs. 3, 6.

168. It is my opinion that a POSA would have understood Baig's electronic association process described above would associate identifiers unique to each device connected to Baig's access point 106. For example, Baig describes that its access point 106 includes a network address translation (NAT) router 108, and further describes that the access point 106 is able to perform actions (for example, selectively sharing information, targeting individuals for advertising based on demographics, and providing "instant messaging" between hotspot members) that target individual devices (for example, devices 102). Ex. 1007, ¶¶ [0043]-[0046], [0049]-[0051], [0089], [0095], [0104], [0120], [0124]. Baig explains that NAT router 108 "replaces the 'public' IP address with the mobile device's 'local' IP address" when routing packets to a destination mobile device 102. Ex. 1007, ¶ [0046]. It is my opinion that a POSA would have understood that Baig's content server, implementing NAT techniques (Ex. 1007, ¶¶ [0043], [0046], [0049]-[0050]), also receives an additional identifier (e.g., a port number) of the destination device 102 in order to route the packets as described above, based on the POSA's existing understanding of NAT technology. See Section VIII.C. In any event, in a hypothetical scenario (which I address further below at Section XII.A.1.b) where Baig is not understood to associate identifiers unique to each device connected to

the access point, it is my opinion that a POSA would have found it obvious to apply NAT techniques described in Zwicky to Baig. In view of the teachings of Zwicky, the content server in Baig would also have received, along with the IP address of the access point, the port number assigned to the device seeking to connect to the access point, as taught in Zwicky. Ex. 1012, pp. 114-116; Ex. 1013, ¶¶ [0004], [0011], [0039], [0046], [0064].

169. As I discuss in more detail below at Section XII.A.1.b, NAT includes a technique known as "port translation" that uses port numbers to allow multiple devices to share the common public IP address. Ex. 1012, p. 115. Zwicky's Figure 5-4 depicts this technique, showing two devices (Client 1 and Client 2) inside a local network with locally-assigned IP addresses (i.e., 10.42.6.9 and 10.42.7.1, respectively).

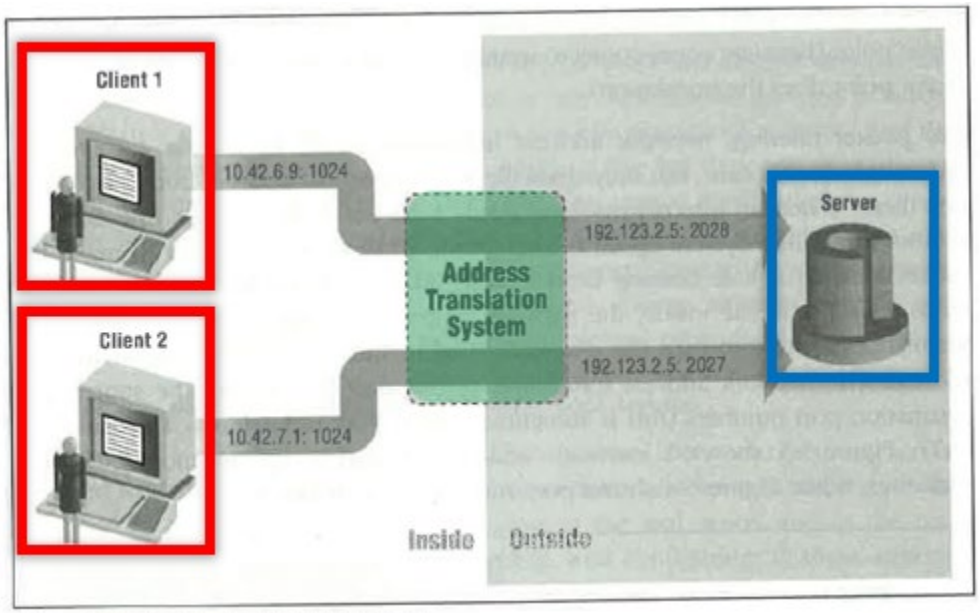


Figure 5-4. Port and address translation

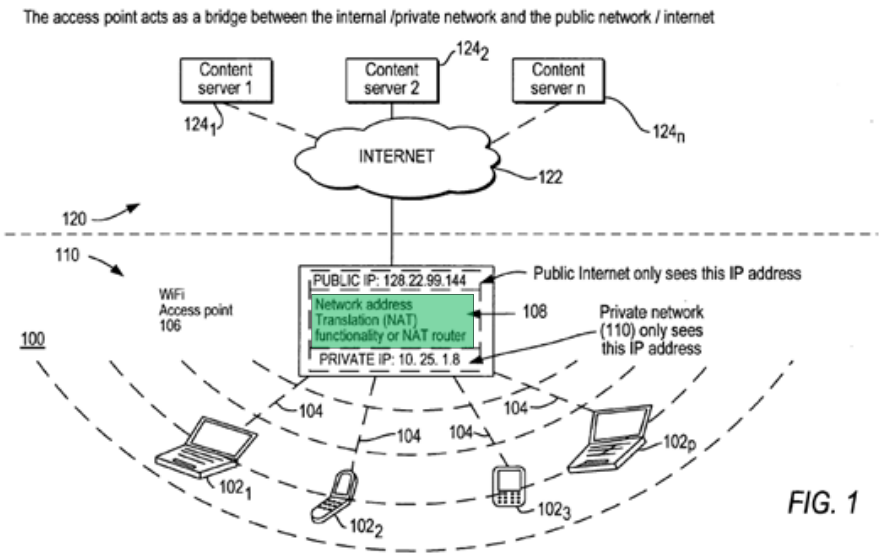
Ex. 1012, Fig. 5-4

170. Zwicky shows an intermediary "Address Translation System" (**green**) that replaces the local IP addresses for Clients 1 and 2 (**red**) with a single common IP address (i.e., 192.123.2.5), to allow them to communicate with the remote server (**blue**). Ex. 1012, pp. 114-116, Fig. 5-4. Additionally, an Address Translation System performing NAT also assigns distinct TCP/IP port numbers to these computers to differentiate them when communicating with devices on the Internet. *Id.*; see also Ex. 1013, ¶¶ [0004], [0011], [0039], [0046], [0064].

171. It would have been obvious to a POSA to apply the port translation teachings of Zwicky to Baig, to any extent Baig's disclosure of using NAT would not already render such teachings obvious, because there are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to modify Baig and combine Baig with Zwicky and/or apply Zwicky to Baig in the ways that I have described above. See Section IV (referring to obviousness rationale (G)). Baig and Zwicky are analogous references in the field of providing online access to information over the Internet and/or local networks, each of which would have been available to a POSA. Ex. 1007, Abstract, ¶¶ [0038], [0042]-[0043], [0052]-[0054]; Ex. 1012, pp. 114-116, Fig. 5-4; Ex. 1013, Abstract, ¶¶ [0004], [0011], [0039], [0046], [0064]. Zwicky's NAT techniques would also have been reasonably pertinent to functions performed by Baig's system, including differentiating devices

connected to a common local network using IP addresses and enabling those devices to individually communicate with servers over the Internet. Indeed, Baig already discloses (repeatedly) using NAT techniques performed by "NAT router 108" within access point 106. Ex. 1007, ¶¶ [0043], [0046], [0049]-[0050]. A POSA would thus have found the proposed combination straightforward.

172. Figure 1 of Baig specifically requires that access point 106 have NAT functionality (**green**) (by including NAT router 108):



Ex. 1007, Fig. 1

173. A POSA would have understood Baig's references to "NAT" as referring to the NAT techniques further described in Zwicky. Ex. 1007, ¶ [0050] ("The NAT router 108 at the access point 106 replaces the IP address of the source mobile device with the IP address of the access point in a well known manner."). It

is my opinion that Baig's repeated references to NAT provide an express motivation to consult Zwicky, in order to unlock the full range of potential benefits of using NAT techniques.

174. For example, it is my opinion that a POSA would have appreciated that the port translation techniques of Zwicky would have enabled Baig's system to function properly as it associates IP addresses at the hotspot to form vicinity-based groups. Ex. 1007, ¶¶ [0006]-[0012], [0038]-[0040], [0052]-[0053], [0074], [0076], Fig. 6. As I describe in further detail below where I apply the references to the claims, the access point in Baig uses the same IP address for all devices when communicating over the Internet. An additional level of translation would have been beneficial–and likely necessary–to uniquely identify, differentiate and properly route traffic between individual access point-connected devices when communicating over the Internet. For example, a POSA would have understood that the port translation techniques of Zwicky would have enabled Baig to provide its disclosed services, such as "selectively shar[ing] information," "instant messaging" between individuals using the hotspot, and targeting individuals for advertising based on demographics by efficiently and accurately routing traffic between different devices connected to the same wireless access point 106. Ex. 1007, ¶¶ [0089], [0095], [0104], [0120], [0124]. This is echoed by other related art, such as U.S. Patent App. Pub. No. 2004/0076180 ("Satapati") (Exhibit 1013), which

explains that "NAT may use port address translation, where port numbers are used to further identify different devices with the same address." Ex. 1013, ¶ [0002].

175. Additionally, I note that Zwicky itself also provides several express motivations to use NAT port translation in a system such as Baig's. For example, Zwicky explains that "[t]he main purpose of network address translation is to economize on address space, but it can also have some security advantages." Ex. 1012, p. 116. It would have been well within the knowledge of a POSA that the number of IP addresses available on the Internet is finite. As I explained above at Section VIII.C, a POSA would have known that NAT is a technique for conserving IP addresses by allowing multiple devices to communicate over the Internet while sharing a single public IP address. See Section VIII.C; see also Ex. 1013, ¶ [0004] (noting that port translation allows multiple individuals to share a common IP address). As I noted above, in addition to conserving the number of IP addresses used in Baig's system, Zwicky would also provide the mentioned security benefits by facilitating greater monitoring and control of incoming network traffic from the Internet. Ex. 1012, pp. 114-116.

176. It is also my opinion that other rationales support my finding that the application of Zwicky to Baig would have been obvious. First, any combination of Zwicky's techniques with Baig merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to

obviousness rationale (A)). The known prior art elements are Baig's system using NAT techniques and Zwicky's technique of assigning unique port numbers to each connected device using NAT. Ex. 1007, ¶¶ [0043], [0046], [0049]-[0050]; Ex. 1012, pp. 114-116, Fig. 5-4; Ex. 1013, Abstract, ¶¶ [0004], [0011], [0039], [0046], [0064]. These known elements would have been combined according to known methods, such as Zwicky's method of performing standard NAT techniques. Ex. 1012, pp. 114-16, Fig. 5-4; Ex. 1013, Abstract, ¶¶ [0004], [0011], [0039], [0046], [0064]. Finally, the combination yields the predictable result of Baig's content server receiving the unique port numbers, assigned using Zwicky's methods of performing standard NAT techniques, of each connected device communicating with the access point 106.

177. A POSA would have had more than a reasonable expectation of success in achieving the above application of Zwicky to Baig. This is because the combination merely involves utilizing standard NAT techniques (that were already well-known) in a system that is already configured to perform NAT techniques.

A POSA would have modified Baig to include Banga690's Device Identifiers:

178. As I described above, Baig's content server "electronically associates" IP addresses. Ex. 1007, ¶¶ [0043]-[0044], [0055]-[0057], Fig. 3. For example, as previously discussed, Baig generates and stores a list of all the devices 102 connected using a common IP address at Baig's wireless access point, thus

identifying and associating those devices 102. Ex. 1007, ¶¶ [0036], [0043], [0076], Figs. 3, 6. As I previously explained, it is my opinion that a POSA would understand Baig's electronic association process associates unique identifiers (for example, a port number) for each device connected to Baig's access point 106 (e.g., using NAT techniques) to perform actions that target individual devices 102. Ex. 1007, ¶¶ [0043]-[0046], [0049]-[0051], [0089], [0095], [0104], [0124].

179. As I address further below at Section XII.A.1.b, in a hypothetical scenario where the '260 Patent's electronically associated IP addresses implicitly requires associating device-specific identifiers other than an IP address and port number combination, it is my opinion that a POSA would have been motivated to combine Baig with Banga690 to teach other types of device-specific identifiers.

180. Like Baig, Banga690 describes a system that includes multiple network accesss devices connected to an access point of a communication network. Ex. 1014, ¶¶ [0023]-[0028]. Banga690 includes a "client relationship" (CR) server that generates records for specific devices and corresponding user profiles for the individuals associated with the devices. Ex. 1014, ¶¶ [0013], [0023]-[0028], [0041]-[0048], [0059]. Banga690's CR server receives device records from the access point that include device-specific identifiers, such as media access control ("MAC") addresses, international mobile station identities ("IMSI"), and international mobile equipment identities ("IMEI"). Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048],

[0059]. It would have been obvious to a POSA to modify Baig's system such that the content server receives, from the access point 106, the device-specific identifiers of Banga690, such as its MAC addresses.

181. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to combine Baig with Banga690 in the way that I have described above. See Section IV (referring to obviousness rationale (G)). A POSA would have been motivated to modify Baig's system such that the electronic association of the devices connected to the same access point 106 would further include the functionality in the content server of receiving and associating other device-specific identifiers, such as media access control ("MAC") addresses, international mobile station identities ("IMSI"), and international mobile equipment identities ("IMEI"), from the individual mobile devices 102. For example, and similar to the modification of Baig in view of Zwicky, a POSA would have been motivated to modify Baig in this way to facilitate Baig's services such as "selectively shar[ing] information," "instant messaging" between individuals using the hotspot, and targeting individuals based on demographics. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0120], [0124], Figs. 1, 2.

182. Banga690's device-specific identifiers would have been useful for distinguishing between different devices using the access point 106. Because Baig teaches having multiple devices sharing a common access point and public IP

address, a POSA would have been motivated to include Banga690's device-specific identifiers to ensure that each device could be separately identified by Baig's VCSP server. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]; Ex. 1013, ¶ [0004]. For example, by using a device-specific identifier such as a MAC address (from Banga690) in addition to an IP address (from Baig) in the combined system, and port numbers (also from Baig by virtue of its description of NAT), Baig's VCSP server is able to recognize devices even when the access point IP address or device port changes. A POSA would have understood that such a combination would have provided an additional layer of assistance in allowing Baig's system to differentiate between commonly-connected devices using the access point 106.

183. Further, such a combination would allow Baig's profiling system to more effectively track device activity via the access point 106 across different hotspot locations, by allowing Baig's system to differentiate between devices via Banga690's device identifiers. By using device-specific identifiers, Baig's system would also be able to track device activity across different IP addresses (associated with the different hotspots). A POSA would have been motivated to achieve this result and use the tracking information to better tailor advertising to individuals across the hotspots, similar to the manner in which Banga690 uses user profiles to provide advertisements. Ex. 1014, ¶¶ [0005], [0035], [0038], [0040], [0058], [0060]. For example, Banga690 explains that the use of device identifiers such as

MAC addresses improves the ability for "content providers and advertisers . . . [to] identify[], creat[e], and maintain[] relationships with their user base" across different access points. Ex. 1014, ¶¶ [0005], [0038]. Thus, a POSA would have been motivated to combine Baig with Banga690 in order to facilitate Baig's services such as "selectively shar[ing] information," "instant messaging" between individuals using the hotspot, and targeting individuals based on demographics. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0058], [0089], [0093], [0095], [0104], [0120], [0124], Figs. 1, 2.

184. It is also my opinion that other rationales also support my finding that the combination of Baig and Banga690 would have been obvious. First, the combination of Baig and Banga690 merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are 1) Baig's system of tracking users via device identifiers (e.g., IP addresses and port numbers) to provide services (such as "selectively shar[ing] information," "instant messaging" between individuals using the hotspot, and targeting individuals based on demographics) that target individual devices (for example, devices 102), and 2) Banga690's technique of tracking users via additional device identifiers (such as MAC addresses, IMSI, and/or IMEI). Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0120], [0124], Figs. 1, 2; Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048],

[0059]. These known elements would have been combined according to known methods, such as Banga690's method of receiving, via an access point, information including the device identifiers. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. Finally, the combination yields the predictable result of Baig's content server receiving both the IP address of the access point 106 used by the devices (as taught in Baig) and device-specific identifiers for the devices (as taught in Banga690) when those devices are accessing the Internet via Baig's access point 106.

185. The combination of Baig and Banga690 also involves applying a known technique to a known device ready for improvement to yield predictable results. See Section IV (referring to obviousness rationale (D)). The known technique is Banga690's technique of using device-specific identifiers to generate user information for use in targeting advertisements to particular users. Ex. 1014, ¶¶ [0005], [0035], [0040], [0058], [0060]. The known device ready for improvement is Baig's system that associates IP addresses and uses user demographics information in targeting advertisements to particular users. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0120], [0124], Figs. 1, 2. The combination improves Baig's system because Banga690's technique of using device identifiers provides additional methods of tracking a user's activities across IP addresses (e.g., at different hotspots) by tracking a user via the specific device

identifiers. The predictable result of the combination is Baig's system receiving device-specific identifiers such as MAC addresses at the content server and tracking said identifiers to perform actions that target individual devices.

186. Further, a POSA would have had more than a reasonable expectation of success. The disclosures in both Baig and Banga690 describe techniques for tracking device identifiers (for example, Baig's port numbers and Banga690's MAC addresses). Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2; Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. Banga690's device-specific identifiers such as MAC addresses were already well-known and would have been easy to implement as additional information received by Baig's content server.

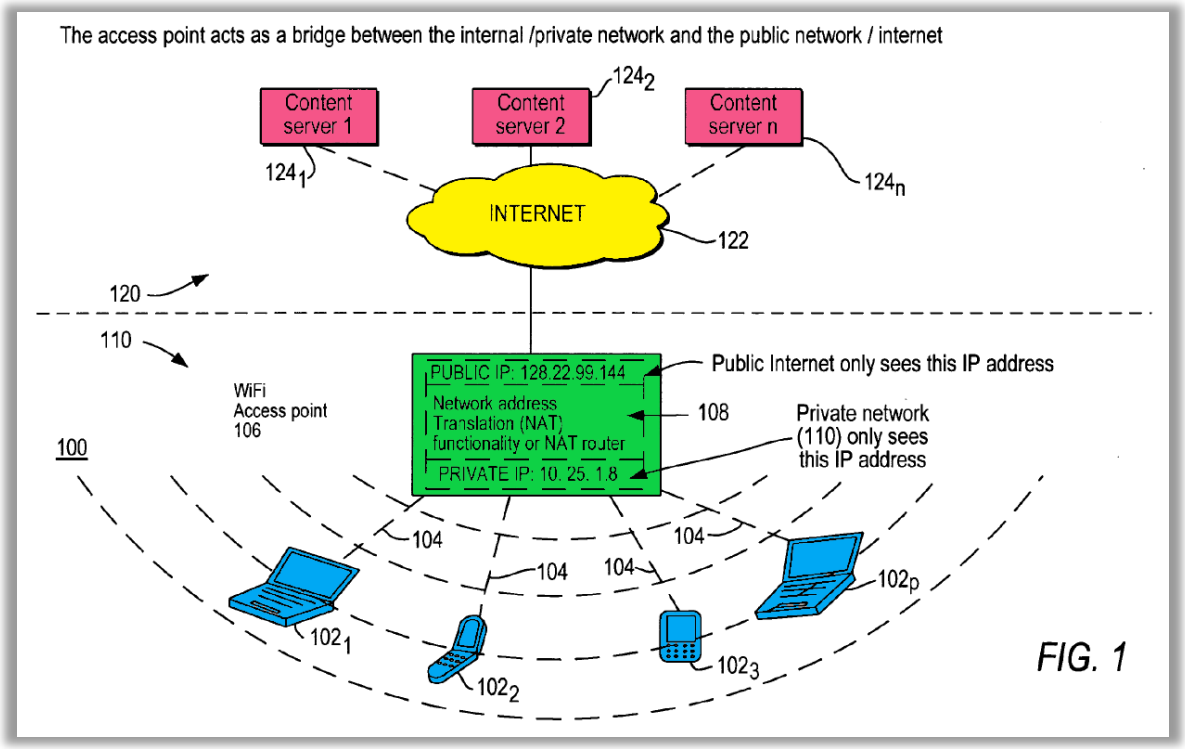
187. A POSA would have had the skills, including programming and design skills, to carry out the straightforward combinations described above. As I describe more fully throughout my below analysis, where I apply the combinations to the claim language, it is my opinion that Baig, alone or with one or more of the combinations described above, renders each limitation of the '260 Patent's claims obvious.

1. Independent Claim 1

a) [1PRE]: "A method implemented using a programmed hardware computer system, the method comprising:"

188. A POSA would have understood that Baig teaches this feature. Baig discloses a "method and apparatus for providing vicinity-based community services at a wireless access location by a public network service provider." Ex. 1007[2], Abstract, ¶¶ [0038], [0042]-[0043], [0052]-[0053]. For example, as shown in the annotated Figure 1 below, Baig's system includes multiple content servers 124_n ("a programmed hardware computer system") (**pink**) that are coupled to the Internet 122 (**yellow**), to which WiFi wireless access point 106 (**green**) is also coupled. Ex. 1007, ¶¶ [0042]-[0043], [0052]-[0053], Figs. 1, 2. Baig's WiFi hotspot 110 allows multiple computing devices 102_p (**blue**) to connect to the content servers 124_n and communicate, with the content servers 124_n and the other computing devices 102_p, over the Internet 122 (**yellow**) via access point 106. Ex. 1007, ¶¶ [0042]-[0043], Figs. 1, 2.

[2] I understand that Petitioner has annotated the Baig reference (Ex. 1007) to identify equivalent support in the Baig Provisional (Ex. 1008)



Ex. 1007 (Baig), Fig. 1 (annotated).

189. For purposes of this Declaration, any one of these content servers 124_n, or any collection of them, discloses the "programmed hardware computer system." I note that claim 17 (discussed below in Section XII.A.21) confirms that a computer system may be a server. If the claimed "computer system" requires more than a single "computer," it would have been well-known to a POSA that a server (such as Baig's server 224) may include multiple interconnected computers (e.g., through network connections and/or other data interfaces). For example, in such a configuration, one computer may manage the distribution of load and processing tasks between the multiple computers constituting the server for performing the steps of [1A] and [1B], as discussed below. Additionally, as I noted above, Baig teaches

that its VCSP system may include multiple servers 224. Ex. 1007, ¶¶ [0052]-[0053], [0055]-[0056] (referring to "at least one srver 224"). A POSA would recognize that a subset of two or more of those servers may be configured to perform the functions of [1A] and [1B]. Accordingly, this subset of two or more of the content servers in Baig, collectively, would also correspond to the claimed "computer system." As explained below, a "method implemented using" Baig's content server renders obvious the steps of claim 1. Baig explains that each content server "includes at least one processor, memory and support circuitry for running programs…." Ex. 1007, ¶ [0052]. The software in the content servers would have been encoded on the memory for storing computer programs, i.e., a "programmed hardware computer system." A POSA would have known that in order to execute software (e.g., computer programs) the hardware systems executing the software must be programmed to execute/run the software.

190. Therefore, Baig discloses element [1PRE].

b) [1A]: "(a) for each of a multitude of users, with the computer system, electronically associating an online access IP address of the user and a set-top box IP address of that user based on a common IP address, wherein network traffic is routed via the common IP address to both an online user interface device and a set-top box of that user; and"

191. It is my opinion that this limitation is rendered obvious by Baig in view of Costa and Zwicky and Baig in view of Costa and Banga690. I first note that Figure

2 of Baig (below) depicts the connection of mobile devices of various individuals through a wireless access point and hotspot:

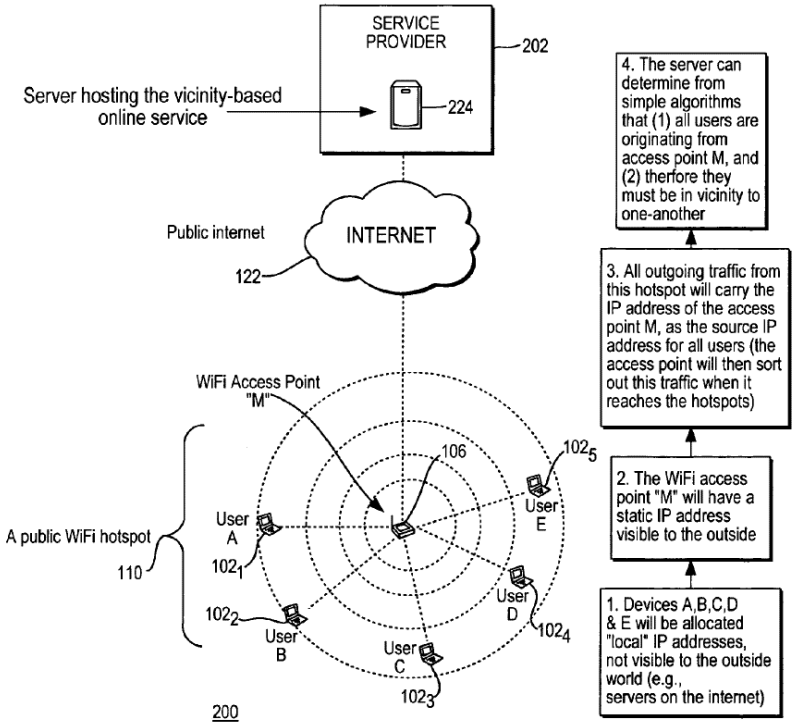


FIG. 2

Ex. 1007, Fig. 2

192. Baig describes "creating vicinity-based communities over the Internet by a vicinity-based community service provider (VCSP) for wireless mobile devices of end-users that have accessed the VCSP via a wireless access point at a wireless hotspot." Ex. 1007, ¶ [0038]. Baig teaches offering a host of services to individuals using devices included in the vicinity-based communities. Ex. 1007, ¶¶ [0006]-[0012], [0038]-[0040], [0052]-[0053], Figs. 1, 2. In my opinion, a POSA would have understood, in the context of Baig's disclosures, that the features discussed in connection with different VCSP services are attributed and related to operations of

the same VCSP system, and involve the same website to be presented to users at a hotspot. While Baig refers to certain features as "one embodiment" or "another embodiment" (see e.g., Ex. 1007, ¶¶ [0007]-[0012], [0076]-[0080], [0090]-0093], [0102]-[0113]), a POSA would have understood that Baig is describes various examples of services available thorugh the same VCSP website. That is, such disclosed features of Baig may be attributed to aspects provided on the same VCSP website. In fact, the webpages of Figures 7-13 all include the same tabs (e.g., the "Chat" tab 706, the "Buy/Sell or Barter" tab 708, the "Share" tab 710, the "Blog Spot" tab 712, the "Location Forum" tab 714, the "Lost & Found" tab 716) identifying services that Baig describes as "embodiments." A POSA would have understood that Baig teaches all VCSP services being accessible from Baig's VCSP website by navigating through these tabs. See Ex. 1007, ¶¶ [0078]-[0093], Figs. 7-13. As such, a POSA would have understood that these various services would all have been available via the webpage tabs and are not mutually exclusive. To the extent that it is argued that these various services in Baig constitute separate and distinct embodiments, a POSA would have found it obvious for each of the services described in Baig to be available in combination to a user of a hotspot or website because it would have ben the simple combination of prior elements according to known methods to yield predictable results. Again, Baig plainly teaches how those services and a community website (prior art elements) could be combined and made

available thorugh one configuration of the VCSP system and website as Baig already explains (e.g., the website of Figures 7-13). Ex. 1007, ¶¶ [0007]-[0012], [0078]-[0093], Figs. 7-13. . In view of the fact that such features are disclosed in adjacent tabs for the same website in Baig, in my opinion, a POSA would have recognized that a leap of inventiveness was not required to combine them with each other. Programming a website to provide different tabs offering different services would have been well within the skillset of a POSA and thus, the results would have been predictable. A POSA would have been motivated to combine these services because doing so would benefit the user by providing them with a large array of complimentary services when accessing the VCSP and its corresponding webpages, thereby increasing user engagement via the VCSP website. Figure 2 shows communications network 200 having a WiFi hotspot 110 with WiFi wireless access point "M" 106. Ex. 1007, ¶ [0049], Fig. 2. Wireless access point "M" 106 connects to mobile devices 102_1 through 102_5 and also connects to content server 124/224 through the public Internet 122 in a conventional manner. *Id.* For example, the mobile devices 102_1 through 102_5 connect to the Internet 122 via a NAT router 108 of the wireless access point 106 that allocates "local" IP addresses to the mobile devices. *Id*.

193. Baig describes its mobile devices 102 as computer devices such as "laptop computer[s], PDA[s], and the like." Ex. 1007, ¶¶ [0043], [0049]. A POSA

would have known that such devices allow a user to interface with other devices in online environments (for example, "to communicate (e.g., exchange information) with each other…as well as to communicate with the content servers 124 over the Internet 122 via the access point 106."). Ex. 1007, ¶ [0043]. Therefore, for purposes of element [1A], it is my opinion that any one of the mobile devices 102 as shown in Figure 2 corresponds to an "online user interface device." And as I described above for element [1PRE], at least one of the content servers 124/224 in Baig corresponds to the claimed "computer system."

194. It would have been well-known to a POSA that packets sent over the Internet (e.g., between mobile devices 102 and various destinations on the public Internet 122) included an IP address of the source devices as well as an IP address of the destination devices. For example, Baig describes that each mobile device 102 (claimed "online user interface device") has an IP address corresponding to the IP address of the wireless access point 106 (claimed "online access IP address") and transmitted to content server 224 over Internet 122. Ex. 1007, ¶¶ [0044], [0050], Fig. 2. Figure 2 of Baig provides further context, showing in Step 3 that "[a]ll outgoing traffic from this hotspot will carry the IP address of the access point M, as the source IP address." Ex. 1007, ¶ [0050], Fig. 2. Baig confirms what was well-known to a POSA: packets sent over the public Internet included IP addresses of both the source and destination devices. Ex. 1007, ¶¶ [0044], [0050], Fig. 2.

***Baig modified to include Costa's Set-Top Box*:**

195. I understand that claim 1 requires one of the electronically associated IP addresses to be that of a set-top box. It is my opinion that such a scenario would have been obvious to a POSA. While Baig discusses devices 102 being various types of mobile computing devices, it does not explicitly disclose one of those being a set-top box. See Ex. 1007, ¶ [0043]. But in Baig, and as would have been within a POSA's knowledge of Internet-capable devices, each device 102 connected to the local network has its own local or private IP address. Ex. 1007, ¶¶ [0043], [0049], Fig. 2 (Step 1). Figure 3 of Baig contemplates that a mobile device can wirelessly connect to a particular access point and make a login request (Steps 301-302), and join a network with other devices already connected to that access point (Step 306). Ex. 1007, ¶¶ [0055]-[0056], Fig. 3.

196. It would have been obvious to include, in addition to devices 102, a set-top box at Baig's access point 106. For example, it would have been obvious to and a POSA would have been motivated to include a set-top box at Baig's access point 106 so that individuals at the hotspot 110 containing access point 106 would have access to services such as televised content available via the set-top box.

197. Costa describes including a set-top box at a similar wireless hotspot access point. Ex. 1011, ¶¶ [0007], [0035]-[0037], [0042], Fig. 1. Indeed, as Costa teaches, wireless hotspot systems operating in public environments (which Baig also

describes with respect to a coffee shop) included consumer electronic devices such as set-top boxes and televisions as part of a hotspot network. Ex. 1007, Abstract, ¶¶ [0006], [0039], [0101]; Ex. 1011, ¶¶ [0007], [0035]-[0037], [0042].

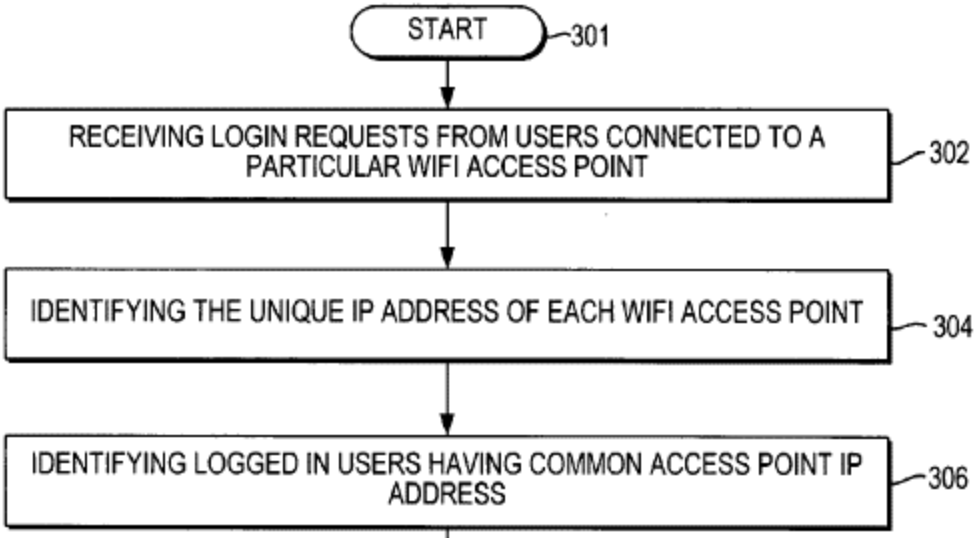
198. As I described previously in the introduction of Section XII.A in further detail, it would have been obvious to a POSA to combine Baig with Costa. In such a combination, Baig's system would include Costa's set-top box along with devices 102. As explained above, each of Baig's devices 102 has an IP address corresponding to the IP address of the wireless access point 106. Ex. 1007, ¶¶ [0044], [0050], Fig. 2. So in the combined system, like each of the other devices 102, the set-top box would have an IP address corresponding to the IP address of the wireless access point 106. Thus, the set-top box at the access point would have a set-top box IP address that is "associated" with the other devices 102 by virtue of being connected to the same access point. As I discussed above at Section V, the '260 Patent defines the term "user" broadly. Ex. 1001, 8:31-53. Specifically, the '260 Patent's definition encompasses multiple different individuals within the establishment. As such, in the Baig-Costa combination, the IP address of a mobile device and the IP address of a set-top box connected to the same access point are both of the same "user" based at least on both being connected to one or multiple individuals using the same access point of the same establishment. For example, as discussed in the '260 Patent, delivery of an advertisement to a "user" "might involve

a single person, or one person might access the online site while the corresponding television ad might be delivered to another person in the household, office, business, or other site or establishment." Ex. 1001, 8:31-53. In these instances, the '260 Patent describes that "[t]he delivery end-point may be one television set or multiple sets of a given user; likewise, online access may involve one or more computers or other online interface devices of a given user." *Id*. Likewise, in some instances, the '260 construes the "user" as one or more persons (e.g., one or more individuals within an establishment, or the like). *Id*.

199. It is my opinion that based on the above disclosures, Baig, alone or as implemented with Costa, teaches shared access points that use a common public IP address for all devices 102 connected to the network. Because Baig, as modified by Costa, includes a set-top box in its devices 102, the set-top box would have the same common IP address as the other devices 102 at that access point. As discussed above when outlining the obviousness of combining Baig with Costa, Baig describes that once a device 102 accesses Baig's VCSP 202 at an access point, the VCSP webpage 600 is modified to include the device 102 in a list 606. Ex. 1007, ¶ [0076]. Therefore, the set-top box would simply be added as another device at the access point, sharing the common IP address as the other devices 102, and would be included in the vicinity-based group represented by list 606 of website 600 in Baig's Figure 6. Ex. 1007, Fig. 6.

Electronically Associating IP Addresses at Baig's Access Point:

200. A POSA would have understood that Baig teaches the claimed "electronically associating" IP addresses. After receiving a login request from a mobile device 102 connected to an access point of a hotspot, Baig's server determines if multiple mobile devices 102 are connected to that same access point. Ex. 1007, ¶¶ [0040], [0056], Fig. 3. This is shown in Step 306 of Figure 3, reproduced below:



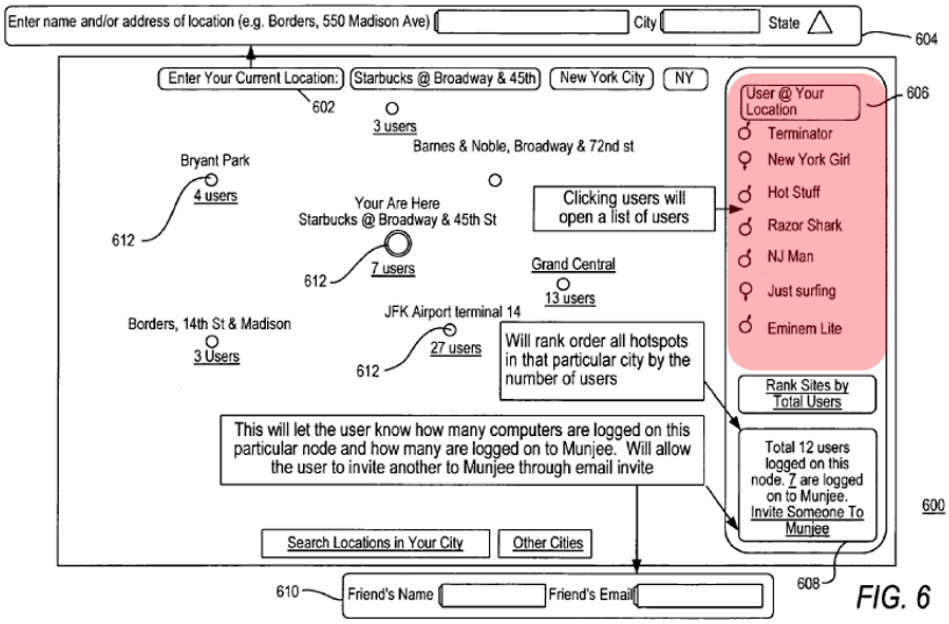
Ex. 1007, Fig. 3 (cropped)

201. Baig explains that "[a]t step 306, the server 224 identifies all the users who have logged in from a common hot spot as having the same access point IP address." Ex. 1007, ¶ [0056]; *see also* Ex. 1007, ¶ [0040]. By identifying all devices 102 that share the same access point IP address, as described above, Baig's server is "electronically associating" IP addresses of all the users who have logged in from

the common hotspot. *Id*. Each of the mobile devices 102 uses the same common access point IP address (claimed "online access IP address"), and thus the electronic association includes the access point's IP address and the IP address of each device 102 (including, for example, a set-top box (claimed "set-top box IP address")). A POSA would therefore understand that the content server in Baig (claimed "computer system") performs the step of "electronically associating" IP addresses when it identifies at least two devices sharing the same access point IP address and tracks the commonality of the access point IP address with each mobile device 102 communicating through the access point to the VCSP server. Ex. 1007, ¶ [0056], Fig. 3 (Step 306); see also Ex. 1007, ¶ [0040]. The two device IP addresses, in fact, are more than simply "associat[ed]" with each other. A POSA would have understood that the two device IP addresses actually match, reflecting that they refer to the exact same access point.

202. As previously discussed, Baig maintains a list of devices connected to the same access point IP address. For example, when the content server determines that one device has connected using the same access point IP address as another already-connected device, the server places both devices into a "vicinity-based" group. Ex. 1007, ¶¶ [0038], [0052]. Specifically, Baig explains that "[t]he server 224 includes at least one processor, memory and support circuitry for running programs that, for example, identify users that are originating from a particular

access point 106 and then groups those users having a common IP address to the same hotspot 110." Ex. 1007, ¶ [0052]. This is shown in Figure 6 depicting webpage 600 presented on a mobile device that shows, among other things, a list 606 (**red**) of users connected to the same access point. Ex. 1007, ¶¶ [0038], [0052], [0074], [0076], Fig. 6.



Ex. 1007, Fig. 6 (annotated)

203. The content server(s) 124/224 in Baig generates and transmits the webpage 600 shown in Figure 6 to mobile devices 102 accessing the webpage 600. Ex. 1007, ¶ [0074]. As I described in the preceding paragraphs, a POSA would have understood that this means that devices are connected to the servers 124/224 using the common IP address of the same access point. Ex. 1007, ¶ [0056], Fig. 3 (Step 306); see also Ex. 1007, ¶ [0040].

204. The list that is generated and stored by the content server in Baig indicates which devices are connected using the common IP address – which, as a POSA would have recognized from Baig's list 606 in Figure 6, includes at least two devices. As described above, one of these devices would include Costa's set-top box. The list thus shows the claimed "electronically associating an online access IP address of the user and a set-top box IP address of that user based on a common IP address," because it associates (in a vicinity-based group) devices connected using the same IP address. The electronic association of IP addresses is also "based on a common IP address." Ex. 1001, 13:41-43 ("The existence of the common IP address associates the online access IP address and the set-top box IP address."). Baig's content server, as discussed, can detect when two or more devices are connected via the same access point IP address.

205. I understand that element [1A] further requires that the associated IP addresses and corresponding devices be "of [the same] user" and that the electronic association is performed "for each of a multitude of users." I note that the '260 Patent broadly describes a "user" to encompass multiple different individuals within a business or other establishment. Ex. 1001, 8:31-53 ("one **or more** persons receiving online access or television service at a delivery end-point within a household, office, **business or other site or establishment**") ("delivery of a television ad to "the user" based on access of an online site by "the user" might involve a single person, or **one**

person might access the online site while the corresponding television ad might be delivered to **another person** in the household, office, business, or other site or establishment") (emphasis added). Baig describes a user as an individual operating a mobile device at a hotspot. Ex. 1007, [0003]-[0006], [0038]-[0039]. A POSA would have understood that the multiple devices of various individuals, which are each connected to the same access point 106 in Baig, teaches the claimed "user" consistent with the express definition of the '260 Patent. Even if Baig's devices are owned or operated by different individuals, those individuals would qualify as "one **or more** persons" who, through the same access point 106, "receiv[e] online access or television service" at a hotspot ("a delivery end-point within a household, office, **business or other site or establishment**"). Ex. 1001, 8:31-53 (emphasis added).

206. Further, Baig creates multiple vicinity-based communities corresponding to different hotspots using the same process discussed in further detail above. Ex. 1007, ¶¶ [0052]-[0054], [0059], [0061], [0121]-[0122], Fig. 3. Accordingly, each of the vicinity-based communities in Baig also teaches a separate instance of the claimed "user" regardless of whether one or multiple individuals own or operate the devices at the particular hotspot associated with the particular vicinity-based group. Thus, a POSA would have understood that Baig teaches the same process of associating IP addresses described above being performed "for each of a multitude of users."

207. I have been asked to consider a scenario where claim 1's "electronic associating" implicitly requires associating identifiers unique to each device connected to the access point. To the extent that it does, as discussed in further detail above in the introduction of Section XII.A, Baig teaches the use of network address translation (NAT) to individually identify and communicate with the devices connected through the access point 106. Ex. 1007, ¶¶ [0038], [0043], [0049]-[0051], [0089]. Further, Baig discloses "selectively shar[ing] information," "instant messaging" services between individuals using the hotspot, and targeting individuals based on demographics or other parameters (for example, by using NAT techniques to target individual devices 102), which logically requires the ability to specifically target individual devices. Ex. 1007, ¶¶ [0089], [0095], [0104], [0120], [0124].

208. A POSA would have already been familiar with NAT given their level of knowledge and the fact that NAT was a well-known industry-standard technique for allowing devices to share a single connection to the Internet (e.g., at an access point) before the priority date of the '260 Patent. Section VIII.C; Ex. 1007, ¶ [0043]. A POSA would have known that NAT allows devices to share a single connection by translating IP addresses. For example, NAT enables an intermediary device (such as an access point) to receive network communications between a local device (e.g., a device at a hotspot in Baig) and a remote device connected to the Internet, and then modify (or "translate") their IP addresses. Baig explains:

> The access point 106 utilizes a unique "public" IP address (e.g., 126.22.99.144 illustratively shown in FIG. 1) which relays data between the wireless mobile devices 102 connected to the wireless network 104 and the external or public network, such as the Internet 122. An IP address is necessary because all data communications takes place in form of data packets. Each packet must contain the IP address of the source device and the IP address of the destination device….
>
> Whenever a mobile device 102 that is connected to a hotspot 110 requests information from the public network (e.g., the Internet) 120, the mobile device 120 sends data packets containing a "local" IP address to the access point 106… On the other hand, the access point 106 interacts with the public network 120 with a public IP address, which is visible to all devices on the public internet 122. The access point 106 (which includes the NAT router 108) replaces the "local" IP address with its own "public" IP address, and forwards the packets to the destination device (e.g., content server) on the Internet or external network 120.

Ex. 1007, ¶¶ [0044]-[0046]. Put differently, when a device in Baig wishes to send packets through the Internet, access point 106 replaces the "local IP address" in those

outgoing packets with the "public IP address" of access point 106 (i.e., Baig translates the IP address using NAT). Ex. 1007, ¶¶ [0044]-[0046], [0050]. Based on these disclosures, a POSA would have understood that Baig's access point 106 necessarily "identifies" individual devices 102 by translating their IP addresses (using NAT) to route packets to/from the individual mobile devices 102.[3] To the extent Patent Owner argues Baig does not teach identifying individual devices, each of Zwicky and Banga690 teaches how devices external to an access point (such as Baig's VCSP content servers) may identify specific devices and, as I discussed above in the introduction of Section XII.A, would have been obvious to combine with Baig.

Baig in View of Zwicky's Device Identifiers and NAT Techniques:

209. Zwicky explains how a POSA would have understood the NAT technology explicitly referenced in Baig to operate. In a system utilizing NAT, each device may be individually publicly identified using a port number in addition to the public shared IP address (e.g., the common IP address of Baig's hotspot). Ex. 1012, pp. 114-116; Ex. 1013, ¶¶ [0004], [0011], [0039]; Ex. 1007, ¶¶ [0038], [0043]-

[3] As a point of clarification I note that throughout this Declaration I have mapped the claimed "online access IP address" and "set-top box IP address" to the "public" IP address of the access point in Baig – not the "local" IP address of the mobile device or set-top box device. This is because, as I address below, claim 1 further requires that the computer system receives online activity by the first online user interface device "via a first one of the online access IP addresses," but as noted by Baig above, the "local" IP address is not visible outside the private/local network.

[0046], [0049]-[0051]. As described in Zwicky, NAT refers to industry-standard techniques for allowing devices to share a single connection to the Internet. Ex. 1012, pp. 114-116. Zwicky shows that, as discussed above, a POSA would have known NAT allows devices to share a single connection by "translating" IP addresses. Ex. 1012, pp. 114-116.

210. With respect to IP addresses, Baig uses the "translating" methods described above in the same manner described in, e.g., Zwicky. Ex. 1012, pp. 114-116. For example, as discussed above, when a mobile device in Baig wishes to send packets through the Internet, access point 106 replaces the "local IP address" in those outgoing packets with the "public IP address" of access point 106 (i.e., Baig translates the IP address using NAT techniques discussed in Zwicky). Ex. 1007, ¶¶ [0046], [0050]; Ex. 1012, pp. 114-116. As I noted above, I have mapped the public IP address to the claimed "online access IP address" and "set-top box IP address."

211. Baig's public IP address of access point 106 identifies a device 102 at that access point using the well-known network addressing translation (NAT) techniques mentioned above and detailed in Zwicky. As I previously pointed out, Baig expressly mentions these techniques, though it does not describe them in detail. Ex. 1007, ¶ [0043] ("The access point 106… provides network address translations (NAT)…."); see also Ex. 1007, ¶¶ [0046], [0049]-[0051] (referring to "NAT router"). Although NAT techniques would already have been within the knowledge

of a POSA without further description from Baig, Zwicky provide details about standard NAT techniques as well. Ex. 1012, pp. 114-116; Ex. 1013, ¶¶ [0004], [0011], [0039].

212. As previously mentioned, Zwicky describes that NAT includes a technique known as "port translation" that uses port numbers to allow multiple devices to share a common public IP address, and for external devices to properly address a particular device sharing the common public IP address (e.g., at a hotspot). Ex. 1012, pp. 114-116. It was well-known prior to the priority date of the '260 Patent that packets sent over the Internet included an IP address of the source and destination devices, in order to properly route the packet. As was also well-known, packets further included a source and destination port number to identify a process or endpoint associated with the source and destination IP addresses. These port numbers allow computer programs of the source device to send the packets and computer programs of the destination device to receive the packets. In the industry-standard TCP/IP, ports are commonly represented as a number added to the end of an IP address after a colon; for example, the string "151.207.240.107**:**443" would represent an IP address of "151.207.240.107" and a port number of "443." TCP/IP port numbers (like IP addresses) have been standard information fields in TCP/IP packets since at least the early 1980s, when the DARPA Internet Program released

papers describing the function of TCP. See, e.g., Ex. 1039. Zwicky provides a graphical depiction of this technique in action:

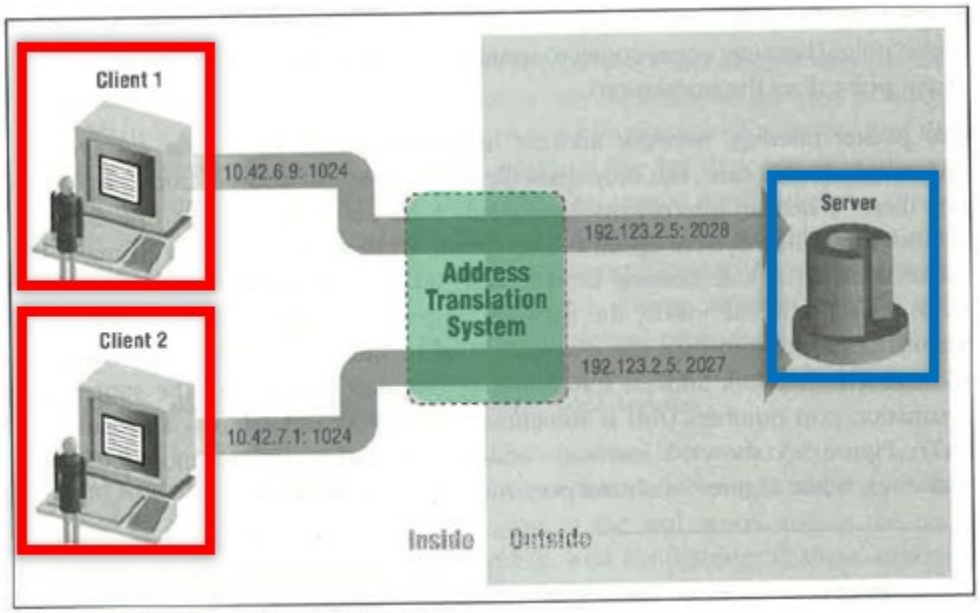


Figure 5-4. Port and address translation

Ex. 1012, Fig. 5-4 (annotated)

213. Zwicky's Figure 5-4 shows two devices, Client 1 and Client 2 (**red**), inside the local network and having locally-assigned IP addresses. Specifically, Client 1 has been assigned local IP address 10.42.6.9 and Client 2 has been assigned local IP address 10.42.7.1. Figure 5-4 shows an intermediary "Address Translation System" (**green**) interposed between the clients and a remote server (**blue**) outside the local network. Like the access point 106 in Baig, this Address Translation System replaces the local IP addresses for Client 1 and Client 2 with a single common IP address (*i.e.*, 192.123.2.5), to allow them to communicate with the remote server. The Address Translation System also assigns distinct TCP/IP port

numbers to these computers (2028 for Client 1 and 2027 for Client 2), thus differentiating them. The port number thus allows multiple distinct devices to use a single IP address yet be uniquely identified by port number when communicating over the Internet. Ex. 1012, pp. 114-116, Fig. 5-4; see also Ex. 1013, ¶ [0011].

214. A POSA would also understand that the Address Translation System also works in the other direction (i.e., from the server to client devices). That is, the Address Translation System receives traffic from external servers (e.g., the remote servers) using the single common IP address (e.g., IP address 192.123.2.5 as described above) and subsequently routes the network traffic to the computers (e.g., Client 1 and Client 2). Ex. 1012, p. 115. The network traffic is routed to the proper client based on the distinct TCP/IP port numbers (i.e., part of the device identifiers) for each client (e.g., 2028 for Client 1 and 2027 for Client 2 in the Zwicky example). Ex. 1012, pp. 115-116. As stated above, the port number thus allows multiple distinct devices to use a single IP address yet be uniquely identified by port number when communicating over the Internet. Ex. 1012, pp. 114-116, Fig. 5-4; see also Ex. 1013, ¶ [0011].

215. Accordingly, in a combined Baig-Zwicky (and thus, Baig-Costa-Zwicky) system, the combination would teach that each of Baig's devices 102 is identifiable by (a) the common IP address of the access point in Baig to which a mobile device ("online user interface device") and set-top box (of Costa) are

connected, and (b) the respective TCP/IP port numbers associated with the mobile device and with the set-top box, using NAT techniques as taught in Zwicky. Baig's content servers recognize the common IP address of the access point as described above and track it (and, its association with each device). Ex. 1007, ¶¶ [0038], [0052], [0074], [0076], Fig. 6. Stated differently, Baig in view of Zwicky tracks the common IP addresses of the access points in order to identify the devices connected to each of those access points (and thus, sharing the corresponding common IP address). Accordingly, such tracking teaches the claimed "electronically associating an online access IP address of the user and a set-top box IP address of that user based on a common IP address" because Baig's content servers monitors and records which devices (sharing the AP's common IP address) are connected to the corresponding hotspot, as shown by Baig's list 606 in FIG. 6. *Id*. These elements would render the recited "associating an online access IP address of the user and a set-top box IP address of that user based on a common IP address" obvious to a POSA when considered together.

Baig Modified to Include Banga690's Device Identifiers:

216. I have also been asked to consider a scenario where electronically associating IP addresses implicitly requires associating device-specific identifiers other than an IP address and port combination as disclosed by Baig-Costa-Zwicky. In such a scenario, it is my opinion that Banga690 would disclose such device-

specific identifiers. Thus, when combined with Baig and Costa as I described previously in the introduction of Section XII.A, Banga690 would cause the combination to teach the "electronically associating" limitation in the scenario where that limitation implicitly requires associating device-specific identifiers other than an IP address and port combination.

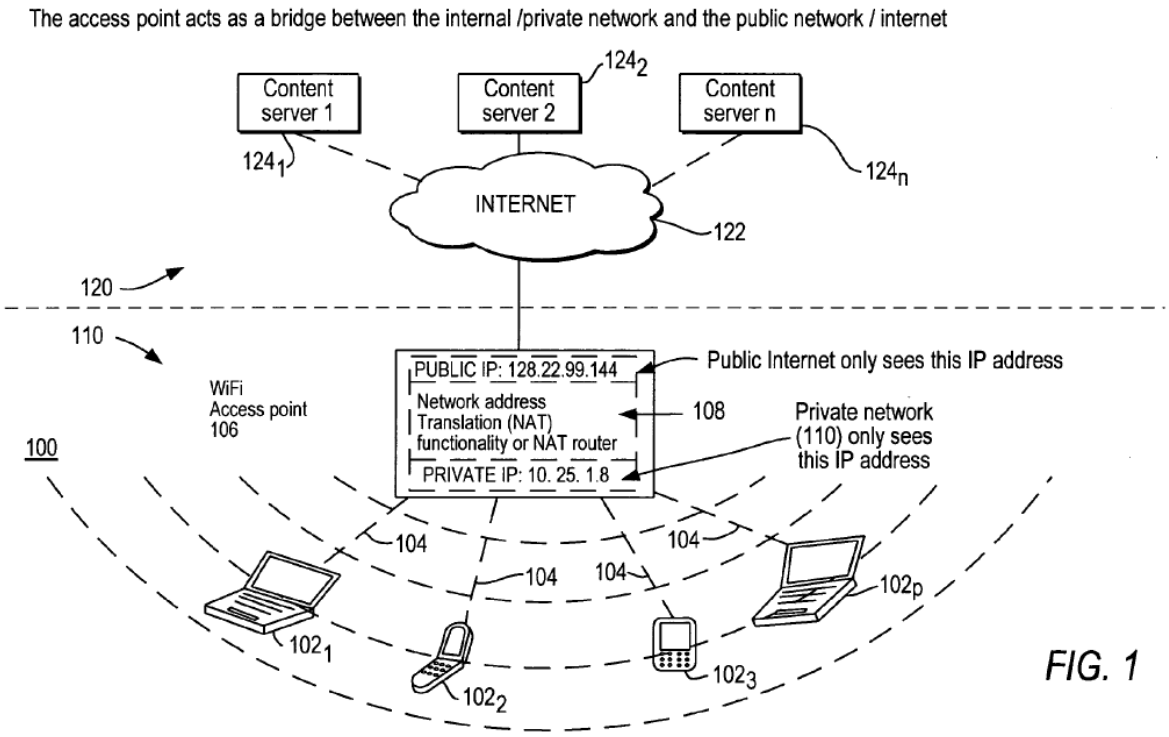
217. Banga690 describes a system that, similar to Baig's, includes multiple network access devices connected to an access point of a communication network, where the access point provides device access information and device identification to a "client relationship server" (CR server) when the device connects to the access point. Ex. 1014, ¶¶ [0023]-[0028], [0038]; Ex. 1007, ¶¶ [0055]-[0056], Fig. 3. In turn, the CR server generates a device record and corresponding profile for the user of the device. Ex. 1014, ¶¶ [0023]-[0028]. To generate the user profiles, Banga690's CR server receives access information of devices at the access point in the form of device records. Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0028], [0034], [0041]-[0048], [0059]. This access information includes any information associated with the devices at the access point. Ex. 1014, ¶ [0034]. For example, the access information may include identifiers of the devices, the IP address associated with the device identifiers, access information, and other information associated with the network access devices. Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0028], [0034], [0041]-[0048], [0056], [0059].

218. Banga690 describes a variety of device-specific identifiers, each of which would have been well-known to a POSA. For example, Banga690 gives examples of identifiers such as media access control ("MAC") addresses, international mobile station identities ("IMSI"), and international mobile equipment identities ("IMEI"). Ex. 1014, ¶¶ [0023]-[0024], [0029], [0039]. Banga690 describes that all of these identifiers, and any other access information, may be used for generating profiles that include such device-specific identifiers. Ex. 1014, ¶¶ [0023]-[0024], [0029], [0039]. The user profiles generated by Banga690's CR server thus include identification information discussed above (i.e., the device-specific identifiers).

219. Baig already teaches "electronically associating" devices connected to the same hotspot based on IP addresses. As I explained in further detail above, it would have been obvious to a POSA to combine Banga690 with Baig such that Baig's "associating" is further based on one or more of the various device-specific identifiers included in the device information of Banga690. In such a combination, each device connected to the same access point (e.g., Baig's access point) is identifiable both by 1) the common IP address of the access point, as discussed in detail above with respect to Baig, and 2) one or more of Banga690's device-specific identifiers included in the device information, such as a MAC address. A POSA would have understood that the claimed "electronically associating" in the combined

system would include Baig's content server receiving IP address and device information (including, e.g., the device-specific identifiers) for a first device accessing the hot spot and subsequently associating the device information for the first device with the device information for another device accessing the same hotspot (i.e., the same common IP address). For example, for a hotspot including Costa's set-top box, Baig would associate the device information and IP address of the set-top box with device information (including device-specific identifiers) of other devices using the same access point. Because Banga690 discloses that the device information may include prior IP addresses that may have come from previous network access, the association of device information in the combined Baig-Costa-Banga690 system may include associating prior IP addresses used by one or more devices—as well as the current/active IP address—with the device-specific identifiers also included in the device information. Ex. 1007, ¶¶ [0046]-[0047], [0056]-[0060]; Ex. 1014, ¶¶ [0034], [0046]. Therefore, even if electronically associating IP addresses implicitly requires associating device-specific identifiers other than an IP address and port combination, a POSA would have been motivated to make the obvious combination of Baig, Costa, and Banga690 to teach the limitations of the claim as discussed above in the Section XII.A introduction.

220. ***Network Traffic Routed via the Common IP Address:*** Finally, it is my opinion that the combinations of Baig, Costa, and Zwicky, and Baig, Costa and Banga690 disclose the claimed "wherein network traffic is routed via the common IP address to both an online user interface device and a set-top box of that user." Returning to Baig's Figure 1, reproduced below, Baig shows a plurality of content servers (each, or collectively, "the computer system") communicating through public Internet 122 via NAT router 108 at access point 106 in order to connect to local network 104 and provide content to devices 102 at the hotspot:



Ex. 1007, Fig. 1

221. As I explained in detail throughout this section, the IP address of Baig's access point 106 is the "common IP address" to multiple devices 102, such as a

particular mobile device ("online user interface device") and a set-top box (e.g., as taught by Costa) ("set-top box").

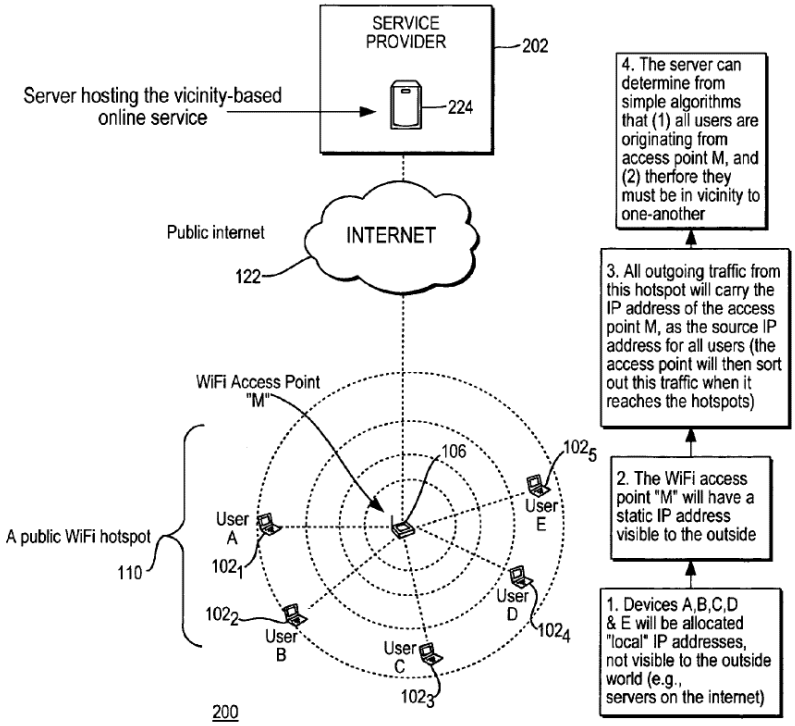


FIG. 2

Ex. 1007, Fig. 2

Specifically, Baig's content server receives the IP address of the hotspot's access point 106 when any of the mobile device(s) 102 attempt to connect to the VCSP service via the access point 106. Ex. 1007, Fig. 2; see also *id.*, ¶¶ [0055]-[0057]. As stated in the Step 3 box of Figure 2, "[a]ll outgoing traffic from this hotspot will carry the IP address of the access point M, as the source IP address for all users (the access point will then sort out this traffic when it reaches the hotspots)." Ex. 1007, Fig. 2. As I also explained above, it was well-known to a POSA that packets sent over the Internet included an IP address of the source and destination devices, in

order to properly route the packets from source to destination. For example, Baig's content servers direct network traffic, including advertisement content, instant messaging, and other VCSP services, to user devices by using the common IP address. This transmission of content to the hotspot-connected devices teaches the claimed "wherein network traffic is routed via the common IP address to both an online user interface device and a set-top box of that user." In other words, when VCSP content server 224 sends data to a hotspot device, it uses the common IP address of the AP. I note that this type of routing of network traffic (e.g., directing content to a device) matches the description in the '260 patent that explains routing network traffic by directing or transmitting content (e.g., advertisements) to the end user devices. Ex. 1001, 4:40-61. Additionally, and as I noted above, Baig's content servers provide instant messaging between users of the hotspot. Ex. 1007, ¶¶ [0089], [0124]. To route messages to specific users (and thus, devices), Baig's content server would receive data from a transmitting hotspot device and then direct that communication to the destination hotspot device using the common IP address (and a device-specific identifier) as I previously explained. Thus, the combination of Baig, Costa, and Zwicky, and Baig, Costa and Banga690 teaches that network traffic is routed via the public IP address of the wireless access point 106 ("the common IP address") to devices—including a mobile device and a set-top box—connected to that access point ("an online user interface device and a set-top box of that user").

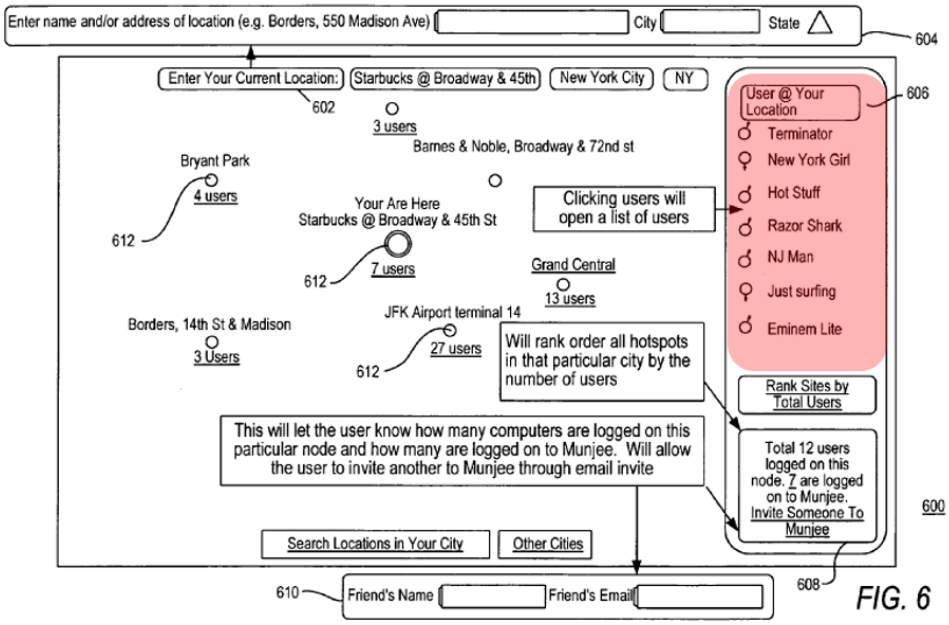
222. Therefore, the combinations of Baig, Costa, and Zwicky, and Baig, Costa, and Banga690 renders element [1A] obvious.

> **c) [1B]: "(b) using user profile information derived from online activity from a first online user interface device via a first one of the online access IP addresses of the multitude of users, with the computer system automatically causing a first television advertisement to be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box IP address associated with the first online access IP address."**

223. It is my opinion that this limitation is rendered obvious by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690.

***User Profile Information Derived from Online Activity from A First Online User Interface Device Via A First One of The Online Access IP Addresses of The Multitude of Users**:*

224. As I discussed above with respect to element [1A], Baig discloses creating a vicinity-based group of devices connected via the same hotspot/local area network. Ex. 1007, ¶¶ [0038], [0052], [0074], Fig. 6. As I further explained, the devices in such a group are of the same "user" as that term is used in the '260 Patent based at least on the devices belonging to individuals using the same access point. After an individual logs in to Baig's access point 106 via a device 102 in the vicinity-based group, webpage 600 appears, having list 606 (**red**) of other individuals connected to the same hotspot:



Ex. 1007, Fig. 6 (annotated)

225. Baig also discloses that "profile information about our users, such as age, gender, occupation, interests and the like are requested during the registration process" and that individuals may subsequently edit their profile or update a visibility status. Ex. 1007, ¶¶ [0093], [0081]. Once devices have registered with the hotspot, Baig tracks this profile information as well as other information such as geographic location, traffic patterns, and online activities of individuals at an access point and uses the profile information to select targeted advertisements, and then delivers those advertisements to one or more devices 102, such as a set-top box, for display. Ex. 1007, ¶¶ [0066], [0093], [0099], [0114]-[0120], Figs. 14-19.

226. Baig acquires information of its users by tracking profile information, traffic patterns, geographic information, visibility status, and the like of user devices

connected using the access point IP address to facilitate providing services such as "selectively shar[ing] information," "instant messaging" between individuals using the hotspot, and targeting individuals based on demographics. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0120], [0124], Figs. 1, 2. A POSA would thus have recognized that Baig discloses "user profile information derived from online activity." A POSA would have recognized this mapping of "user profile information" is consistent with the '260 Patent's disclosure, which broadly describes profiles as including "demographic or behavioral information," such as information "concerning the user's characteristics or the user's activities." Ex. 1001, 5:46-67.

227. For the reasons described above it is my opinion that Baig derives user profile information from online activity from a first online user interface device. Banga690 also teaches this limitation. As I have previously noted, Banga690 describes receiving device-specific identifiers for use in generating user profiles. Ex. 1014, ¶¶ [0023]-[0024], [0029], [0039]. Banga690 uses these device identifiers to track user activity in order to generate the user profiles. For example, Banga690 teaches determining user profile information such as user preferences based on network access activity, such as an access point from which the user is connected to a network. Ex. 1014, ¶¶ [0034]-[0046], [0053]-[0060], Figs. 3, 4. As I discussed in detail above at the beginning of Section XII.A, it would have been obvious to a POSA to combine Baig with Banga690. In such a combination, a POSA would have

implemented Banga690's user profile information determination processes in Baig's system so that advertisers in Baig would have accurate and up-to-date user profile information that takes into account device activity across other network access points, and not just the current hotspot.

228. In addition to the various obviousness rationales for combining Baig with Banga690 that I described previously, this would have been the mere use of a known technique to improve substantially similar targeted advertisement systems in the same way. See Section IV (referring to obviousness rationale (C)). The known technique is Banga690's technique of using device-specific identifiers to track user online activity and generate user profiles based on the activity. Ex. 1014, ¶¶ [0023]-[0024], [0029], [0034]-[0046], [0053]-[0060], Figs. 3, 4. This technique is used by Banga690's CR server, which provides targeted advertisements similar to Baig's targeting users based on demographic information. Ex. 1014, ¶¶ [0005], [0035], [0040], [0058], [0060]; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0120], [0124], Figs. 1, 2. Banga690's technique would have improved Baig's similar content server by enabling it to track user online activity and derive user profile information (to the extent it does not already) in the same way Banga690's technique improves its own CR server.

229. Therefore, Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 render "user profile information derived from online activity" obvious.

230. The user profile information from Baig described above is "from a first online user interface device via a first one of the online access IP addresses of the multitude of users," because it may come from any one of the mobile devices 102 connected to the same access point in Baig. Ex. 1007, ¶¶ [0066], [0093], [0099], [0114]-[0120], Figs. 14-19. As I explained above with respect to element [1A], network traffic in Baig's system is routed via the public IP address to devices connected to that access point using NAT techniques from Baig or Baig in view of Zwicky (as well as Banga690's device identifiers). Ex. 1007, ¶¶ [0043], [0046], [0049]-[0050]; Ex. 1012, pp. 114-116, Fig. 5-4; Ex. 1013, Abstract, ¶¶ [0004], [0011], [0039], [0046], [0064]; Ex. 1014, ¶¶ [0023]-[0024], [0029], [0039]. As I have previously explained, such techniques allow Baig's system to uniquely identify, differentiate, and properly route traffic between individual devices communicating over the Internet.

231. My understanding of element [1B] is that it does not require that "a first online user interface device" and "a first one of the online access IP addresses of the multitude of users" be different from the "online user interface device" having an "online access IP address" discussed above with respect to element [1A]. However,

I have been asked to consider a scenario where such a requirement is imposed on element [1B]. In such a scenario, my opinion would remain unchanged because Baig discloses that access point 106 connects content server 124/224 to multiple devices 102_1 through 102_5. Ex. 1007, ¶¶ [0044]-[0046]. To any extent that claim 1 requires separate devices, it is my opinion that any two different devices of 102_1 through 102_p constitute the "online user interface device" of [1A] and the "first online user interface device" of [1B].

With the Computer System Automatically Causing a First Television Advertisement to Be Directed To a Set-Top Box For Presentation Via That Set-Top Box, Selectively:

232. As I explained previously in this Section, Baig discuss vicinity-based advertising in which "advertisers can target the audience of a particular hotspot" based on user profile information derived from online activity at that hotspot. Ex. 1007, ¶¶ [0093], [0058]-[0059], [0061], [0094]-[0095].

233. It would have been obvious to a POSA that Baig's process of providing advertisements in Baig is performed "automatically". As a preliminary note, automatically providing targeted advertisements in online environments would have been well known to a POSA. See Section VIII.A. In any event, Baig does not teach or suggest requiring a user to take a specific action to cause Baig's process of providing advertisements to occur. To the contrary, Baig states that "when a user at

a hotspot logs into the website of the VCSP 202, the user automatically becomes part of the vicinity-based user group" and the web page of Figure 6 is automatically provided to the user device. Ex. 1007, ¶¶ [0059], [0074]. Subsequently, advertisements are selected and provided for a particular hotspot (e.g., through the VCSP website) based on the collected user profile information at that access point. Ex. 1007, ¶¶ [0093], [0099]-[0101], claim 13.

234. Baig's Figure 22 depicts a process flow for acquiring VCSP user information and providing advertisements based on that information. Ex. 1007, ¶¶ [0096]-[0101], Fig. 22. Based on my review of Baig, it is my opinion that the only step here potentially involving user action is step 2202 in which the VCSP receives user information during registration. Ex. 1007, ¶¶ [0096]-[0101], Fig. 22. A POSA would have understood that this step merely relates to the user's initial registration with Baig's VCSP. It would have been obvious to a POSA that this step does not represent a request to perform the actual claimed step of "causing a first television advertisement to be directed." Baig also describes advertisements being provided "in real time" to a particular location, which a POSA would have understood to mean "automatically." Ex. 1007, ¶¶ [0105]-[0106], Abstract, claim 13. In other words, Baig's content server ("the computer system") automatically causes a first advertisement to be directed to a device connected to a particular access point without requiring user interaction.

235. A POSA would understand that Baig teaches advertising to any one or more of the devices 102 connected to the access point 106 of Baig's hotspot. Ex. 1007, ¶ [0093], [0099]-[0101], claim 13. A POSA would have understood Baig's system provides targeted advertisements to as many different devices at the access point as possible in order to maximize the number of users receiving the targeted advertisements. This would allow advertisers to ensure their selectively targeted advertisements reach the intended target. Ex. 1007, ¶¶ [0054], [0093].

236. As I explained in detail above, a POSA would have been motivated to include a set-top box, such as that disclosed by Costa, in the devices at Baig's access point 106. Therefore, a POSA would have understood that one of the devices receiving the targeted advertisements would have been a set-top box, so that the targeted advertisements could be displayed on a television along with other television content. In some examples, a POSA would have been motivated to select the set-top box over other user devices connected to the access point, in order to broaden the reach of the advertised content to a higher number of persons at a particular location. For example, rather than selectively targeting advertisements to a number of individual user devices (e.g., laptops) at an access point, advertisers could selectively target advertisements to all users at a geographic location, such as a coffee shop, by providing the advertisements to the set-top box (and its associated television) connected to the access point. Ex. 1007, ¶¶ [0039], [0054], [0093]. It

would have been obvious to a POSA that advertisements provided to a set-top box for presentation on a television constitute "**television** advertisement[s]" as defined by the '260 Patent. Ex. 1001, 6:37-40 (emphasis added). In fact, Baig describes that multimedia information is stored at content servers. Ex. 1007, [0042]. A POSA would understand that multimedia information stored at online content servers would include television content, including advertising, which may be used by advertisers to selectively target advertisements as described above. Accordingly, it is my opinion that advertisements in Baig would be delivered either as advertisements in a webpage or through video content (e.g., streaming television or other multimedia presentations), either of which would be displayed by the STB on a television as television content.

237. A POSA would have been motivated to include Costa's set-top box as one of the devices in Baig's system for the reasons I described above in Section XII.A (e.g., so that individuals at the hotspot 110 containing access point 106 would have access to services such as televised content available via the set-top box). Costa describes including a set-top box at a similar wireless hotspot access point to Baig's access point 106. Ex. 1011, ¶¶ [0006]-[0007], [0035]-[0036], Fig. 1. A POSA would also have been motivated to further direct advertisements to that set-top box based on the user profile of other associated devices at that hotspot. For example, if the hotspot were, e.g., a coffee shop, when directing advertisements to a set-top box

such as Costa's, the Baig-Costa system would naturally consider the profile information of individuals in the coffee shop and customize advertising accordingly. Doing so would help perform Baig's service of targeting users based on demographic information by allowing advertisers to provide "[t]argeted advertising at wireless hotspots using vicinity-based networks" that reach a wider audience within the hotspot vicinity and likely increase the interest of the audience in the advertisements. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2.

238. Additionally, Baig's direction of an advertisement is performed "selectively" based on using user profile information to select an advertisement targeted to the particular hotspot location. Ex. 1007, ¶ [0093]. Based on these disclosures, it is my opinion that the Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 combinations teach the computer system automatically causing a first television advertisement to be directed to a set-top box for presentation via that set-top box, selectively.

239. As I explained above with respect to element [1A] and the claimed "electronically associating" IP addresses, network traffic in Baig's system is routed via the public IP address to devices connected to that access point using NAT techniques from Baig and Baig in view of Zwicky. Ex. 1007, ¶¶ [0043], [0046], [0049]-[0050]; Ex. 1012, pp. 114-116, Fig. 5-4; Ex. 1013, Abstract, ¶¶ [0004],

[0011], [0039], [0046], [0064]. The NAT techniques allow Baig's system to route traffic to specific device 102, including Costa's set-top box. Alternatively, as also discussed with respect to element [1A], Baig's system could make use of device-specific identifiers (e.g., MAC address information) of Banga690 to uniquely route the traffic to specific devices (including Costa's set-top box) based on the corresponding device-specific identifier. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. As I have previously explained, the techniques described above allow Baig's system to uniquely identify, differentiate, and properly route traffic between individual devices communicating over the Internet.

240. Thus, Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 combination teaches element [1B]. Finally, because these combinations each teach all limitations of claim 1, it is my opinion that claim 1 would have been obvious to a POSA in view of Baig-Costa-Zwicky and Baig-Costa-Banga690.

2. Independent Claim 61: "A method implemented using a programmed hardware computer system, the method comprising: (a) for each of a multitude of users, with the computer system, electronically associating an online user interface device identifier, which indicates an online user interface device of the user, and a set-top box identifier, which indicates a set-top box of that user, which electronic association is based on a common IP address, wherein network traffic is routed via the common IP address to both the online user interface device and the set-top box of that user; and (b) using user profile information derived from online activity from the online user interface device of a first user of the multitude of users via a first online access IP address, with the computer system automatically causing a first television advertisement to be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box identifier associated with the online user interface device identifier of the first user's online user interface device."

241. Independent claim 61 is largely identical to claim 1. Ex. 1001, claims 1, 61; Ex. 1015. The main difference between these claims is claim 1 recites IP address-based associations, while claim 61 recites identifier-based associations for a user interface device and a set-top box. Ex. 1001, compare claim 1 ("electronically associating an online access IP address of the user and a set-top box IP address of that user"; "the set-top box is indicated by the set-top box IP address associated with the first online access IP address") to claim 61 ("electronically associating an online user interface device identifier, which indicates an online user interface device of the user, and a set-top box identifier, which indicates a set-top box of that user"; "the

set-top box is indicated by the set-top box identifier associated with the online user interface device identifier of the first user's online user interface device”).

242. My above analysis for claim 1 addresses association of IP addresses as well as device identifiers of user interface devices and set-top boxes. See Section XII.A.1. It is my opinion that a POSA would thus have understood that Baig in view of Costa and Zwicky, and Baig in view of Costa, and Banga690 discloses the “online user interface device identifier” and the remaining limitations of claim 61 for the reasons discussed above at Section XII.A.1 with respect to the association of IP addresses. Additionally, for the reasons I explained above with respect to claim 1, even if claim 61’s “device identifier” requires something in addition to an IP address, this is taught by Zwicky’s IP address and port combination, or Banga690’s device-specific identifiers (e.g., MAC addresses). See Section XII.A.1.b-c; see also XII.A.63-67 (dependent claims also discussing device identifiers).

243. Finally, because Baig in view of Costa and Zwicky and Baig in view of Costa and Banga690 teaches all limitations of claim 61, it is my opinion that claim 61 would have been obvious to a POSA.

3. Independent Claim 26: "A method implemented using computer equipment, the method comprising: (a) with the computer equipment, automatically electronically delivering electronic user profile information to a computer system that includes a server that electronically associates, for each of a multitude of users, an online access IP address of the user and a set-top box IP address of that user based on a common IP address, (b) wherein network traffic is routed via the common IP address for both an online user interface device and a set-top box of that user, (c) wherein delivered user profile information of a first user of the multitude of users (i) is derived from online activity of the first user from a first online user interface device via a first online access IP address and (ii) includes identification of the first online access IP address and the time and date of the online activity, and (d) as a result of which delivery, a first television advertisement can be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box IP address that the server associates with the first online access IP address."

244. Claim 26 (including claim elements [26pre]-[26D] is largely identical to claim 1. Ex. 1015; Ex. 1001, claims 1, 26. In particular, it is my opinion that element [26pre] is taught by the combinations of Baig, Costa, and Zwicky, and Baig, Costa, and Banga690 for substantially the same reasons as claim element [1pre], and that claim element [26B] is taught by the same combinations for substantially the same reasons as claim element [1A]. See Section XII.A.1, above. Additionally, it is my opinion that claim element [26D] is taught the combinations of Baig, Costa, and Zwicky, and Baig, Costa, and Banga690 for substantially the same reasons as [1B]. See Section XII.A.1.c above.

245. It is my opinion that claim 26 includes two limitations that are absent from claim 1: (1) claim 26 requires "computer equipment" to "automatically" deliver electronic user profile information to the computer system that performs the electronic association of IP addresses (element [26A]), and (2) claim 26 further requires that delivered user profile information includes identification of the first online access IP address and the time and date of the online activity (element [26C]). Ex. 1015; Ex. 1001, claims 1, 26. These features of claim 26 are taught by Baig-Costa-Zwicky and Baig-Costa-Banga690, as I describe further below.

246. Claim 26 further requires "with the computer equipment, automatically electronically delivering electronic user profile information to a computer system that includes a server." Ex. 1001, claim 26. The '260 Patent expressly describes a profile provider preprogrammed to send the profile information when an individual interacts with an online site, like Baig's VCSP website, as an example of automatically electronically delivering electronic user profile information. Ex. 1001, 11:36-64. For example, the '260 Patent describes that "[t]he profile provider (such as the proprietor of online site 50) can send an electronic communication to the CAS, preferably automatically such as by having the profile provider's server pre-programmed to send such electronic communication, which electronic communication contains information that the CAS will use in causing a selected TV ad to be transferred to the STB at the proper time." *Id*. The '260 Patent further

describes that "[t]he electronic communication can be sent for each instance of an individual interacting with the online site, or a list can be created and transmitted containing information about a number of user contacts." *Id*. As such, profile information that collected and sent upon the user registering with a VCSP hotspot teaches the claimed "automatically electronically delivering electronic user profile information," as defined by the '260 patent, because the the webserver hosting the registration website is preprogrammed to, upon user entry, provide the collected user profile information to the VCSP content servers 224 for storage and use in, for example, its advertising bidding platform. This is analogous to the '260 Patent's description of automatic profile delivery I discussed above. For example, Baig's description of collecting user profile information and and passing it on to the VCSP servers handling community services and advertisement bidding also mirrors the description in the '260 patent of collecting and passing profile information to a CAS as an example of automatic user profile delivery. Ex. 1001, 5:46-67; Ex. 1007, ¶¶[0052], [0093], [0095]-[0100].

247. Baig teaches delivering user profile information "with the computer equipment . . . to a computer system that includes a server." As I explained for claim element [1A], Baig describes a vicinity-based community service provider (VCSP) in which user profile information (including "age, gender, occupation, interests, and the like") is automatically delivered to the VCSP upon an individual registering on

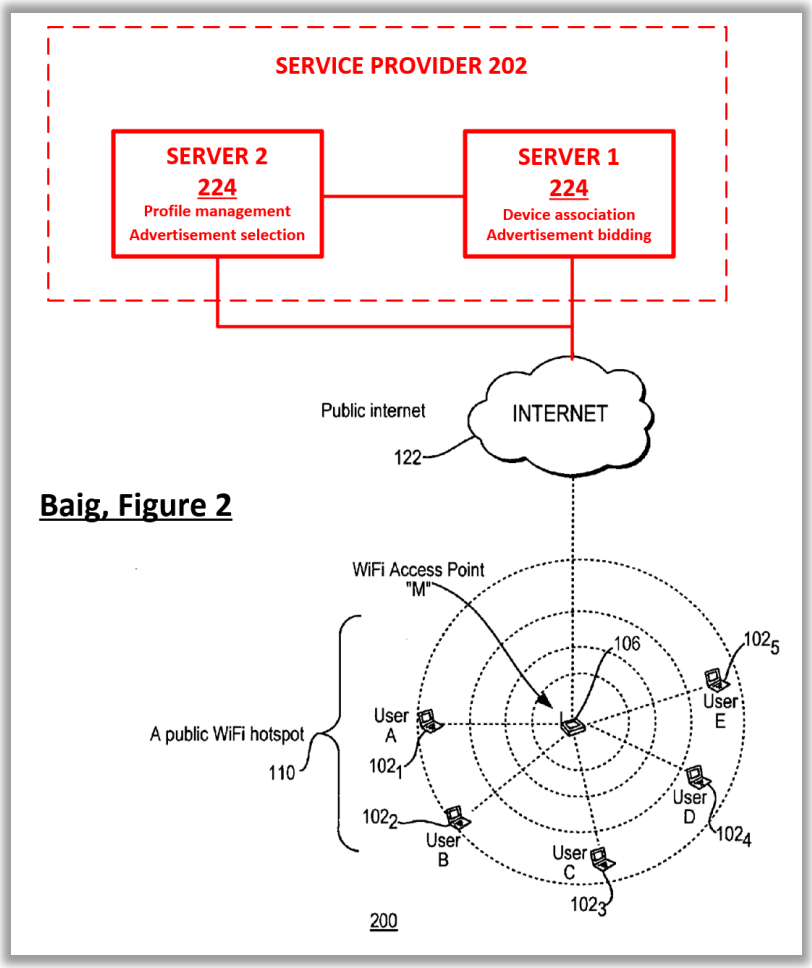
the VCSP website. Ex. 1007, ¶¶ [0006]-[0012], [0037]-[0040], [0051]-[0053], [0092]-[0094]. A POSA would have understood that the VCSP would include at least one computer or computer component ("computer equipment") to perform the user registration process (e.g., to collect user responses to its questionnaire) as discussed for Figure 5 and collect other profile information such as traffic patterns. See Ex. 1007, ¶¶[0070]-[0074], [0093], [0100], [0104], [0114]-[0120], Figs. 14-19. For example, Baig describes that "the user must complete the registration form 500, which includes a plurality of fields for receiving appropriate registration and demographic type information."); Ex. 1007, ¶ [0070]. Baig further describes that "once a user registers on the web page illustrated in Fig. 5, and then logs into the VCSP website on the home page as illustrated in Fig. 4, the server 224 presents the web page illustrated in Fig. 6 to the user on his/her mobile device 102." Ex. 1007, ¶ [0074]. Baig describes automatically delivering this user profile information to one or more other components of the VCSP system. See Ex. 1007, ¶¶ [0052]-[0054], [0062], [0074], [0093], [0103]-[0105], Figs. 4-6, 21. For example, Baig describes automatically delivering the user profile information to at least one content server ("computer system that includes a server") hosting a hotspot community website (e.g., web page illustrated in Fig. 6) and advertising bidding website. *Id*.

248. Accordingly, it is my opinion that the computer hardware executing at least the registration process of Figure 5 teaches the recited "computer equipment,"

and the generated profile information is provided to one or more other components, such as content server 224, for targeting advertisements ("delivering electronic user profile information to a computer system that includes a server"). Ex. 1007, ¶¶ [0070]-[0074]. As discussed for claim element [1A], content server 224 includes at least one component teaching "a computer system" configured to electronically associate devices connected to the same access point (and therefore sharing the same common IP address). Ex. 1007, ¶¶ [0003]-[0006], [0038]-[0040], [0043], [0052]-[0059], [0074]-[0076], [0121]-[0122], Fig. 3.

249. I have been asked to also consider a possible argument that the recited computer equipment must be a different device (e.g., separate) from the recited computer system. Even assuming such an interpretation, it is my opinion that Baig teaches the claimed computer equipment and computer system of claim 26. For example, I note that Baig's VCSP 202 includes "**at least one** content server 224." Ex. 1007, ¶ [0052] (emphasis added); see also *id.* ¶ [0053] ("[t]he at least one server 224 further includes programs and data for hosting a website of the VCSP 202"). Accordingly, a POSA would understand that Baig describes the VCSP system as having a distributed configuration in at least one example, and that Baig contemplates having a at least one component of server 224 handling Baig's registration and user profile information management (the claimed computer equipment) and at least another one of Baig's servers 224 hosting websites for

accessing community services as well as facilitating advertisement bidding (the claimed computer system). Section XII.A.1.b; Ex. 1007, ¶¶ [0052]-[0053]. For example, at least a component of a first content server 224 ("the computer equipment") of Baig's "at least one content server 224" in VCSP 202 would correspond to the claimed "computer equipment", while a second content server 224 would correspond to the claimed "computer system." *Id.* An example of this configuration is illustrated below:



Ex. 1007, Fig. 2 (partial, annotated)

Although the above illustration shows both servers being part of service provider 202, server 2 could just as easily be located outside of the service provider environment without substantially changing the underlying functionality and interactions. It would have been obvious for a POSA to use these different content servers 224 of Baig's VCSP 202 to distribute processing tasks/load across multiple resources. In fact, the '260 Patent describes such multiple resources with examples of "a computer server that manages delivery of online advertisements", "a server delivering content", "a server delivering an ad", "a server recording an activity conducted from an online user interface device", etc. Ex. 1001, 4:40-42, 5:5-33.

250. Next, I have also been asked to consider a possible argument that the claimed computer equipment must be independent of the computer system (e.g., not associated with the same service provider). Under such an interpretation, it is my opinion that it would have been obvious for a POSA to modify Baig such that the at least one content server 224 (claimed "computer system") automatically receives profile information from a separate profile provider/generator in view of the teachings of Banga690. In Banga690, a client relationship ("CR") server 150 (**red**) receives device identifiers and access information from access point 210 (**blue**), and generates and sends user profile information to an advertisement server or a content provider 140 (**purple**). Ex. 1014, ¶¶ [0013], [0023]-[0030], [0041]-[0048], [0059], Fig. 2.

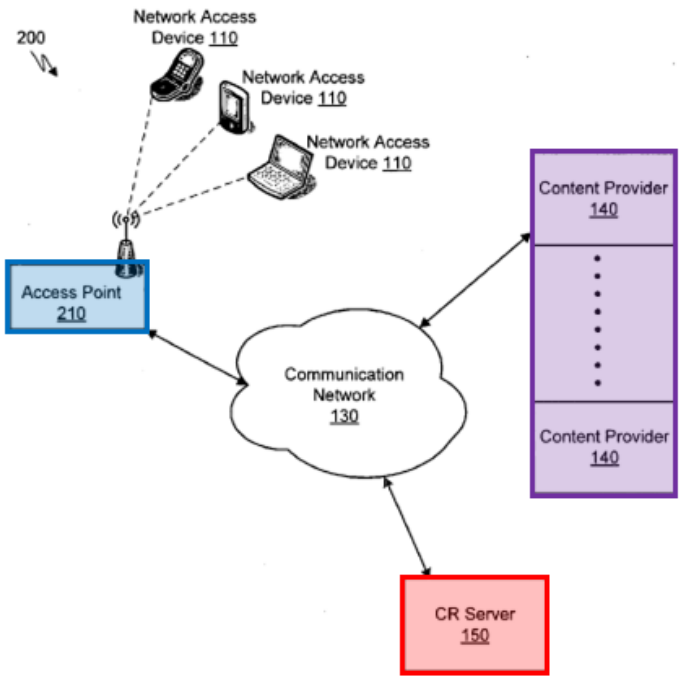


FIG. 2

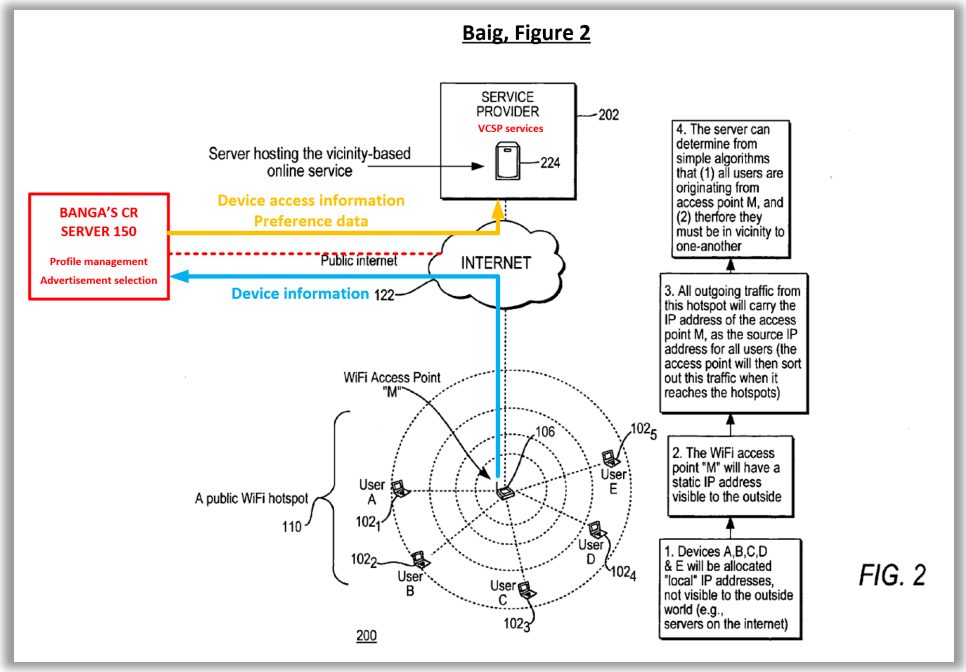
Ex. 1014, Fig. 2 (annotated)

251. For example, referring to Fig. 4, Banga690 describes that "[i]n step 400, the CR server 150 (FIG. 2) receives access information and the device identifier," and that "the access information is received from the access point 210 (FIG. 2)." Ex. 1014, ¶ [0053]. Banga690 further describes that "[t]he user preference can be transmitted to an advertisement server or a content provider 140," where this user preference is user profile information. Ex. 1014, ¶¶ [0059]-[0060].

252. Banga690 also teaches CR server 150 generating user profile information based on user input (and may be based on other information), in a similar manner as Baig's registration process depicted in Figure 5. Ex. 1014, ¶¶ [0045], [0063]-[0069], [0073]-[0075]; Ex. 1007, ¶ [0093]. For example, Banga690

describes that "the user profile is generated based on access information, the device identifier, and the survey responses," where the survey responses are received from individuals. Ex. 1014, ¶¶ [0067]-[0069]. This is similar to the user registration process described in Baig. For example, Baig describes that "[a]s users register online on the VCSP website, profile information about our users, such as age, gender, occupation, interests and the like are requested during the registration process and securely stored by the VCSP 202." Ex. 1007, ¶ [0093]. Banga690 also teaches automatic delivery of profile information, e.g., each time an individual uses the access point. Ex. 1014, ¶¶ [0038], [0040], [0072]. For example, in Banga690, "[e]very time the user seeks network access, the connecting access point 210 sends the user's network access device's device identifier and access information to the CR server 150," where each device identifier has a different device record (user profile information). *Id*. These examples are consistent with the description of the '260 patent for "automatically" delivering user profile information, which merely requires preprogramming of the profile provider to send profile information upon detecting or in response to some user online activity (e.g., the network access event in Banga690). See, e.g., Ex. 1001, 11:36-64. Banga690 further describes that once this user profile information is received, the CR server 150 generates profiles accordingly. *Id*.

253. It would have been obvious to implement Banga690's separate CR server 150 ("computer equipment") into Baig's system, as shown in the annotated figure below. More specifically, in the modified system, user access information may be sent from the various access points to a separate profile server (e.g., CR server 150), and that profile server would generate user profile information based on the access information, including device information. Ex. 1007, Abstract, ¶¶ [0002], [0004], [0096]-[0107], Figs. 21-22. For example, as taught in Banga690, each time a device connects to an access point (such as Baig's access point 106), that access information may be provided to CR server 150. Ex. 1007, ¶¶ [0004]-[0012], [0042]-[0048], Fig. 1; Ex. 1014, ¶¶ [0053], [0061], [0072]. The profile server would send this user profile information to at least one server 224 of VCSP 202 for use in targeted advertising. Ex. 1007, ¶ [0004]-[0012], [0052]-[0058], Figs. 1-2; Ex. 1014, ¶¶ [0053], [0061], [0072]. For example, at least one of the content servers 224 of VCSP 202 may receive the profile information and publicize it to advertisers for possible advertising opportunities (e.g., through Baig's advertising bidding system). An illustration of this combination is shown below in an annotated version of Baig's Figure. 2.



Ex. 1007, Fig. 2 (annotated with Banga690's CR Server 150).

254. As noted above, Baig discloses that part of its VCSP system 202 provides for targeted advertising to devices at hotspots based on profile information. Ex. 1007, ¶¶ [0096]-[0106] (emphasis added), Figs. 21-22. Baig describes that "businesses or other entities can advertise online through the VCSP website for a particular hotspot based upon the (i) geographical location of the users, (ii) profile (age/gender) of the users at the hotspot (iii) time of the day," or otherwise. Ex. 1007, ¶¶ [0099]. As a particular example, a wireless access provider in Baig's system, such as Starbucks, "can advertise to the vicinity based community (e.g., special coupons for coffee), thus making sure that it can advertise to potential customers within walking distance or even sitting wireless access provider (i.e., hotspot host)." Ex. 1007, ¶ [0101]. Likewise, in Baig, "advertisers that are not associated with the

wireless access provider and/or the VCSP can send or post advertisements to the… end-user's profiles." *Id*. Accordingly, because such advertisements are based on the user profile information (as described above), including profile information collected across a plurality of different access points (e.g., the multiple different access points depicted in the annotated figure below) would provide a holistic picture of a given individual. For example, rather than basing an advertisement on user activity from a single access point, the advertisements would be selected based on user activity across multiple different access points, thus providing a wider range of information that may be used to select an advertisement. Doing so would further Baig's goal of providing targeted advertisements in a most effective way. Ex. 1007, ¶ [0093].

255. A POSA would recognize that this combination would have been the simple use of a known technique to improve similar systems in the same way. Banga690 describes the well-known technique to have divided anddistributed functionality between different servers for processing efficiency and load management, as I described above. Ex. 1014, ¶¶ [0059]-[0060]; See Section IV. For example, as described above with regard to the annotated figure, Banga690's CR server 150 (e.g., a first device) receives user access information, device information, and/or other information, and processes this information to generate user profile information (e.g., a first functionality) indicative of a given user's behavior across

various access points. *Id*. On the other hand, at least one of servers 224 of Baig's VCSP 202 (e.g., a different server than Banga690's server, and thus, a second similar device) receives this user profile information, separately generated by the CR server 150, and uses the user profile information to select a targeted advertisement (e.g., a second, different functionality). Ex. 1007, Abstract, ¶¶ [0002], [0004], [0096]-[0107], Figs. 21-22. Thus, the generation of user profile information, and the selection of targeted advertisements are performed by different servers. Ex. 1014, ¶¶ [0059]-[0060]; Ex. 1007, Abstract, ¶¶ [0002], [0004], [0096]-[0107], Figs. 21-22. A POSA would have recognized that at least some improvements resulting from applying Banga690's technique of using a distributed architecture would include processing efficiency and load management. Ex. 1014, ¶¶ [0045], [0059]-[0060], [0073]-[0075]; Ex. 1007, ¶¶ [0093], [0103]. For example, with regard to processing efficiency and load management, by distributing the above described processing functions (e.g., (1) profile generation/management and advertisement selection, and (2) providing community services such as device association and advertisement bidding, among other services) across multiple different servers (e.g., Banga690's CR server and Baig's VCSP, the load on each server is reduced, thus allowing each server to more quickly and efficiently perform its allotted function (e.g., profile maintenance and generation and advertisement selection at the CR server and community services provided by at least one of the content servers 224 at the

VCSP)). Additionally, such a distribution would also minimize problems with having a single point of failure, where disruption to one server may cause all functions to fail.

256. Additionally, modifying Baig to include a separate server that handles profile management and advertisement selection would also have been a simple substitution of one known architecture for another. In other words, there would have been two options for configuration of Baig's system: either have all functions performed by one server, or have functions distributed across different servers. The distributed architecture, as described in Banga690, is simply one of those two options. A POSA would have had the understanding that one architecture could be substituted for the other architecture with minimal complexity. For example, network communications between different servers was well-known by at least 2006, and managing the exchange of data between servers would have been well within the skillset and expertise of a POSA. In fact, Banga690 provides a blueprint for how a distributed architecture would work, and a POSA would have had no difficulty in following the teachings of Banga690. The result of this modification would also have been predictable for at least the same reason—Banga690 teaches what the modified system design would look like. Ex. 1014, ¶¶ [0035]-[0040], [0060], Fig. 2.

257. Claim 26 (element [26C]) further requires "wherein delivered user profile information … includes identification of the first online access IP address and the time and date of the online activity". Baig teaches the claimed delivered user profile information. Ex. 1007, ¶¶ [0039], [0114], Fig. 14 (copied below). Baig describes that at least one of VCSP servers 224 can build a database that associates the IP addresses of each hotspot ("first online access IP address") with physical locations of each hotspot, and that includes monitoring activity at each hotspot, including the number of individuals logging in to a hotspot during hourly time slots on an hourly, daily, weekly, monthly or yearly basis ("time and date of the online activity"). *Id*. To generate these aggregate statistics, a POSA would have understood that at least one computer component of one of VCSP servers 224 (the claimed "computer equipment") hosting the VCSP registration and login process would track and provide (e.g., to one or more other servers 224 of the VCSP system) the time and date of each user login and/or registration event. *Id*. For example, doing so would enable the aggregation of user login information across a time distribution, which may, e.g., assist in providing services to the users (e.g., identifying times and dates of high/peak user levels, and/or otherwise projecting user activity). *Id*. Accordingly, Baig teaches this element of claim 26.

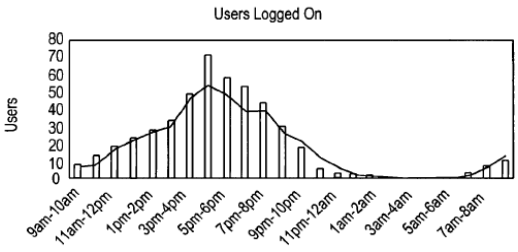


FIG. 14

Ex. 1007, Fig. 14 (annoated)

258. Banga690 also describes the claimed delivered user profile information. Ex. 1014, ¶¶ [0034]-[0039]. Banga690 describes generating user profile information based on information contained within a device record. *Id*. The device record includes identification of the access point (such as with an IP address or other access point identifier) and date and time that the network access device seeks access. *Id*.

259. It would have been obvious to include Banga690's profile information that includes IP addresses and time and date information because Baig describes the desire to track statistical user information "to better assist in providing services to the users," such as by allocating more bandwidth to handle increased traffic loads or to better direct advertisements to a targeted audience. Ex. 1007, ¶¶ [0114]- [0120]; Ex. 1014, ¶¶ [0058]-[0060]. As I described above, by tracking this additional information, user profile information for an individual would be a more comprehensive/holistic representation of that individual's activity, as well as including an indication of the most up to date/timely user profile information, which

would enable more accurate generation of targeted advertisements for that individual. Ex. 1014, ¶¶ [0058]-[0060]. Accordingly, this would have been the mere use of a known technique to improve substantially similar network systems in the same way. *Id.* For example, including IP addresses and time and date information in a user profile was a known technique that would improve the performance of Banga690's CR server and Baig's VCSP servers (similar system) by allowing for more comprehensive generation of user profile information, and thus improved accuracy in generating targeted advertisements (an improvement). A POSA would have recognized that advertisers would have found such temporal information helpful in identifying trends as well as times and dates at which there may be a higher likelihood of interest for their products or services.

260. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the limitations included in independent claim 26, and render claim 26 obvious to a POSA.

4. Independent Claim 38: "A method implemented using computer equipment, the method comprising: (a) with the computer equipment, automatically electronically delivering electronic user profile information to a computer system that includes a server that electronically associates, for each of a multitude of users, an online user interface device identifier, which indicates an online user interface device of the user, and a set top box identifier, which indicates a set-top box of that user, which electronic association is based on a common IP address, (b) wherein network traffic is routed via the common IP address for both the online user interface device and the set-top box of that user, (c) wherein delivered user profile information of a first user of the multitude of users (i) is derived from online activity of the first user from the first user's online user interface device via a first online access IP address and (ii) includes identification of the first online IP address and the time and date of the online activity, and (d) as a result of which delivery, a first television advertisement can be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box identifier that the server associates with the online user interface device identifier of a first user's online user interface device."

261. Claim 38 is largely identical to claim 26, except that claim 38 recites identifier-based associations, whereas claim 26 recites IP address-based associations[4]. See Section XII.A.3, above; Ex. 1001, claims 26, 38; Ex. 1015. The same differences that distinguish claim 61 from claim 1 also distinguish claim 38 from claim 26. See Sections XII.A.1-3; Ex. 1001, claims 1, 26, 38, 61; Ex. 1015. Namely, claims 1 and 26 recite IP address-based associations, while claims 38 and 61 recite identifier-based associations. *Id*.

[4] The same difference distinguishes claim 61 from claim 1.

262. Thus, for at least the same reasons as claims 26 and 61, Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 teaches independent claim 38, because, as explained above, the prior art teaches associations based on device identifiers (e.g., IP addresses, MAC addresses). *Id*.

263. Therefore, because Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 teaches all limitations of claim 38, it is my opinion that claim 38 would have been obvious to a POSA.

5. Dependent Claim 2: "The method of claim 1 wherein neither the user profile information in part (b) nor the association between the first online access IP address and its associated set-top box IP address includes personally identifiable information."

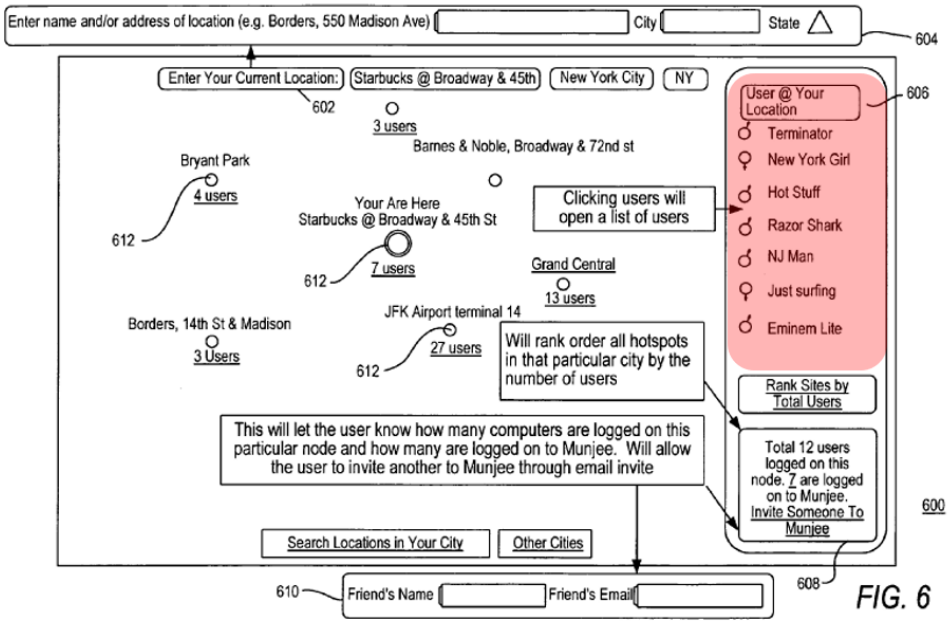
264. Claim 2 of the '260 Patent depends from claim 1 and further requires "wherein neither the user profile information in part (b) nor the association between the first online access IP address and its associated set-top box IP address includes personally identifiable information." Ex. 1001, claim 2. Claim 1 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.1.

265. As I discussed above for element [1B], Baig teaches "user profile information" by disclosing age, gender, user interests and preferences information derived from user network access activity (for example, based on a user accessing the VCSP from a particular location—such as a coffee shop—and/or filling out a

survey). Section XII.A.1.c; Ex. 1007, ¶¶ [0061], [0093], [0096]. The '260 Patent states that age, gender, and user interests (such as, for example, a user's hobbies) are examples of non-personally-identifiable information. Ex. 1001, 6:11-20. Therefore, a POSA would have understood that, because the user profile information that is tracked by Baig's system (e.g., for providing services such as "selectively shar[ing] information," "instant messaging" between individuals using the hotspot, and targeting individuals based on demographics) constitutes the same information described as non-personally-identifiable information in the '260 Patent, Baig teaches its "user profile information" discussed in Section XII.A.1.c, which constitutes non-personally-identifiable information. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0061], [0089], [0093], [0095]-[0096], [0104], [0124], Figs. 1-2. Therefore, it is my opinion that Baig teaches that "the user profile information in part (b) [does not] include[] personally identifiable information."

266. As I explained above in my analysis for element [1A], Baig teaches electronic association by generating a list of individuals and/or mobile devices 102 connected through a hotspot access point 106. See Section XII.A.1.b, above. Specifically, Baig explains that "[t]he server 224 includes at least one processor, memory and support circuitry for running programs that, for example, identify users that are originating from a particular access point 106 and then groups those users having a common IP address to the same hotspot 110." Ex. 1007, ¶ [0052]. As

shown in Figure 6, this electronic association includes, for example, a list 606 (**red**) of individuals connected to the same access point. Ex. 1007, ¶¶ [0038], [0052], [0074], [0076], Fig. 6.



Ex. 1007, Fig. 6 (annotated)

267. Baig states that "[t]he user name can be any name the user desires to either identify the user or **provide anonymity**." Ex. 1007, ¶ [0068] (emphasis added). It would have been obvious to a POSA that a username that provides anonymity would have been non-personally identifiable information by very nature of the username providing anonymity. Indeed, the '260 Patent itself describes a username as an example of non-personally-identifiable information. Ex. 1001, 14:62-15:2.

268. Additionally, as I explained above for element [1A], in Baig-Costa-Banga690 the electronic association is based on MAC addresses. Section XII.A.1.b. In my opinion, a POSA also would have understood that a MAC address does not constitute PII under the '260 patent's explicit definition of PII because a MAC address "[does] not by itself allow one knowing the information to identify the particular person." Ex. 1001, 6:11-20; Ex. 1057, 5 (definition of "MAC address") and Ex. 1058, 5 (definition of "MAC address"). Additionally, and as I noted in the introduction to Grounds A and B, a POSA would have understood that the common IP address in Baig could be dynamically assigned for a variety of reasons. Section XII.A. As defined by the '260 Patent, a dynamic IP address is an example of non-PII. Ex. 1001, 6:11-20. And because the electronic association in Baig is based on the common IP address and thus, may include that shared IP address, the electronic association would not include PII. Rather, it would include a dynamically-assigned common IP address (i.e., non-PII).

269. Accordingly, Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 teaches the additional limitations included in dependent claim 2, and renders claim 2 obvious to a POSA.

6. Dependent Claims 27, 80, and 148

270. Except for their dependencies and the change from "first online access IP address/set-top box IP address" to "online user interface device identifier/set-top

box identifier" (claims 80, 148), the claims are nearly identical. See Ex. 1001, claims 27, 80, 148. As I described above with respect to claim 61, a POSA would have found "online access IP addresses" obvious for the same reasons as "online user interface device identifiers." See Section XII.A.2, above. Thus, it is my opinion that a POSA would have found claims 27, 80, and 148 obvious for the same reasons as claim 2. See Section XII.A.5, above.

7. Dependent Claim 3: "The method of claim 1 (i) further comprising, using user profile information derived from online activity from a second online user interface device via a second one of the online access IP addresses of the multitude of users, with the computer system automatically causing a second television advertisement to be directed to a second set top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address associated with the second online access IP address, (ii) wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively."

271. Claim 3 of the '260 Patent depends from claim 1 and further requires (i) "using user profile information derived from online activity from a second online user interface device via a second one of the online access IP addresses of the multitude of users, with the computer system automatically causing a second television advertisement to be directed to a second set top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address associated with the second online access IP address," and (ii)

"wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively." Ex. 1001, claim 3. As discussed above, claim 1, from which claim 3 depends, is rendered obvious by Baig-Costa-Zwicky and Baig-Costa-Banga690.

272. Claim element [3A] simply recites the same processes as claim element [1B], which Baig-Costa-Zwicky and Baig-Costa-Banga690 teaches (Section XII.A.1.c), but for a second online user interface device and a second set-top box. As I discussed for claim element [1B], it would have been obvious that in Baig-Costa-Zwicky and Baig-Costa-Banga690 an advertisement delivery system would be used for a plurality of devices, including a second online user interface device and a second set-top box (e.g., at other VCSP hotspot sites). See Section XII.A.1.c. In particular, each of the combinations include other VCSP hotspot sites hosting other online user interface devices such as a laptop and other set-top boxes. Ex. 1007, ¶¶ [0048]-[0059], [0067], [0093]-[0106], Figs. 2-3, 12; Ex. 1011, ¶¶ [0035]-[0042], Fig. 1. Like for the first hotspot, first online user interface device, and first set-top box, the modified system derives, and subsequently uses, user profile information from online activity (e.g., user survey information, user information, user network access information, or the like). Ex. 1007, ¶¶ [0093]-[0106], Fig. 12. For example, this user profile information is derived from a second online user

interface device at the second hotspot via a second online access IP addresses (e.g., the public IP address of the second hotspot). Ex. 1007, ¶¶ [0093]-[0106], Fig. 12.

273. The combinations further provide that the VCSP computer system allows for advertisers to bid for advertising opportunities for devices at the hotspot and transmits those advertisements to the hotspot devices, including a set-top box using the public hotspot IP address (i.e., "automatically causing a second television advertisement to be directed to the second set top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address associated with the second online access IP address"). Ex. 1007, ¶¶ [0093]-[0106], Fig. 12; Ex. 1011, ¶¶ [0035]-[0042], Fig. 1. Therefore, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 render obvious "using user profile information derived from online activity from a second online user interface device via a second one of the online access IP addresses of the multitude of users, with the computer system automatically causing a second television advertisement to be directed to a second set top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address associated with the second online access IP address," as required by claim element [3A].

274. Baig-Costa-Zwicky and Baig-Costa-Banga690 also render claim element [3B] obvious. Baig explains that advertisements are selected based on the

user profile information at each hotspot community. Ex. 1007, ¶¶ [0093]-[0101]. In particular, Baig recognizes the user profile information at each hotspot may differ, and thereby teaches collecting "user information for each hotspot[]" and sharing that information with advertisers so that they can target advertisements "based upon . . . [the] profile (age/gender) of users at the hotspot." Ex. 1007, ¶¶ [0097]-[0099], [0104]. For example, Baig describes that "the VCSP can tell the advertisers how many users are present at a particular time, the gender distribution (i.e., percent male/female) and their average ages," which would "vary at different times of the day, as users having different ages and genders will log off or join the hotspot throughout the day." Ex. 1007, ¶ [0098]. Accordingly, in Baig (and thus, Baig-Costa-Zwicky and Baig-Costa-Banga690), depending on the different profile information associated with each hotspot, advertisements are selected and provided to each of those hotspots (and a set-top box thereof), thus teaching the claimed "wherein which television advertisement is directed to or presented via which set-top box depends on differences between" hotspots. And as I discussed with respect to claim 1, in Baig, online activity of an individual (e.g., collected through their devices) is used to derive a corresponding profile, thus teaching the claimed "the online activities from the first and second online user interface devices." See Section XII.A.1.c. Accordingly, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 also renders obvious the claimed "wherein which television

advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively," as required by claim element [3B].

275. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 3, and render claim 3 obvious to a POSA.

8. Dependent Claim 83: "The method of claim 61: (i) further comprising, using user profile information derived from online activity from the online user interface device of a second user of the multitude of users via a second online access IP address, with the computer system, automatically causing a second television advertisement to be directed to a second set-top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box identifier associated with the online user interface device identifier of the second user's online user interface device, and (ii) wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the online user interface devices of the first and second users, respectively."

276. Claim 83 is directed to the same concepts as claim 3, differing only in some insubstantial wording changes and dependency. See e.g., Section XII.A.7 (discussing the use of identifier-based associations for a user interface device and a STB instead of IP address-based associations). It is my opinion that my analysis for claim 3 remains applicable to claim 83. Therefore, it is my opinion that claim 83 would have been obvious to a POSA for the same reasons as claim 3. See Section XII.A.7, above.

9. Dependent Claim 4: "The method of claim 3 wherein neither the user profile information in part (i) nor the association between the second online access IP address and its associated set-top box IP address includes personally identifiable information."

277. Claim 4 of the '260 Patent depends from claim 3 and further requires "wherein neither the user profile information in part (i) nor the association between the second online access IP address and its associated set-top box IP address includes personally identifiable information." Ex. 1001, claim 4. As discussed above, claim 3 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.7.

278. As I explained above with respect to claim 3, Baig in view of Costa teaches an advertisement delivery system that may be used for a plurality of devices, including a second online user interface device and a second set-top box. See Section XII.A.7, above. Similar to the first hotspot, first online user interface device, and first set-top box described with respect to element [1B] above at Section XII.A.1.c, Baig in view of Costa teaches a system that uses user profile information derived from online activity from a second online user interface device at the hotspot (e.g., user survey information, user network access information) via a second online access IP address (e.g., the public IP address of the second hotspot). Ex. 1007, [0093]-[0106], Fig. 12; See Section XII.A.7 above. Other than the change from "first" online access IP address to "second" online access IP address, claim 4 is

identical to claim 2. As discussed for claim 2, Baig teaches that neither the electronic association nor the user profile information (e.g., age, gender, interests) include personally-identifiable information. Section XII.A.5; Ex. 1007, ¶¶ [0061], [0093], [0096]; Ex. 1001, 6:11-20.

279. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 4, and render claim 4 obvious to a POSA.

10. Dependent Claim 84: "The method of claim 83 wherein neither the user profile information in part (i) nor the association between the second online user interface device identifier and its associated set-top box identifier includes personally identifiable information."

280. Claim 84 of the '260 Patent is substantially identical to claim 4. See Ex. 1001, claims 4, 84. Despite some difference in wording, both claims are related to the idea that user profile information, and online access IP addresses/online user interface device identifiers and set-top box IP addresses/set-top box identifiers are associated without including personally identifiable information. It is my opinion at a POSA would have found the minor differences inconsequential in achieving the claimed limitations for the reasons described above with respect to claim 61. See Section XII.A.2, above. Therefore, it is my opinion that a POSA would have found claim 84 obvious for the same reasons as claim 4. See Section XII.A.9, above.

11. Dependent Claim 5: "The method of claim 1 further comprising storing in the computer system electronic associations between the online access IP addresses and the set-top box IP addresses."

281. Claim 5 of the '260 Patent depends from claim 1 and further requires "storing in the computer system electronic associations between the online access IP addresses and the set-top box IP addresses." Ex. 1001, claim 5. As discussed above, claim 1, from which claim 5 depends, is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.1.

282. As I explained above at Section XII.A.1.c with respect to element [1B], Baig describes its system providing a list of devices connected to each hotspot. Ex. 1007, ¶¶ [0069], [0076]-[0077], Figs. 6-7. For example, after an individual logs in to Baig's access point 106 via a device 102 in the vicinity-based group, webpage 600 appears having list 606 of other individuals connected to the same hotspot. Ex. 1007, ¶¶ [0076]-[0077], Fig. 6. It would have been obvious to a POSA that this list is an association between the IP address of the hotspot and the IP addresses of the devices connected through that hotspot because the devices share (i.e., are associated by) the common public IP address of the hotspot. Section XII.A.1.c; Ex. 1007, ¶¶ [0056], [0069], [0076]-[0077], Figs. 3 (Step 306), 6- 7; see also Ex. 1007, ¶ [0040].

283. The user profile information, the associations among devices, and the list is stored on Baig's server 224, as is all the information used to host the websites

of the VCSP. Ex. 1007, ¶¶ [0053],[0056], [0063]. For example, Baig describes server 224 "storing information that is entered on the web pages or uploaded by the users, among other functions and services." *Id*. It would have been obvious to a POSA that some of the information stored by the server 224 would have included the list of devices connected to the hotspot. Ex. 1007, ¶ [0053] (describing the "functions and services" to include providing the website of Figure 6). Moreover, a POSA would have recognized that to provide a webpage 600 including a list of devices connected to the hotspot, that list (i.e., the association) would need to be stored by the server 224 hosting the page. Otherwise, the server 224 would not have been able to provide the list of devices for display via the page because it would not have had access to the list.

284. Accordingly, as shown above, Baig (and thus, Baig in view of Costa and Zwicky and Baig in view of Costa and Banga690) teaches the additional limitations included in dependent claim 5, and renders claim 5 obvious to a POSA.

12. Dependent Claim 7: "The method of claim 1 wherein the first television advertisement is caused to be directed to the set-top box upon first being contacted by the set-top box after the user profile information is derived."

285. Claim 7 of the '260 Patent depends from claim 1 and further requires "wherein the first television advertisement is caused to be directed to the set-top box upon first being contacted by the set-top box after the user profile information is

derived." Ex. 1001, claim 7. As discussed above, claim 1, from which claim 7 depends, is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

286. Baig (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) describes automatically adding individuals to "vicinity-based user groups" when they log into a website of a vicinity-based community service provider (VCSP) at a hotspot. Ex. 1007, ¶¶ [0038]-[0039]. In Baig-Costa-Zwicky and Baig-Costa-Banga690, and as I discussed for element [1B], at least one of Baig's VCSP servers 224 ("the computer system") is configured to derive profile information from connecting devices based on their network access (claimed "online activity"). Ex. 1007, ¶ [0096]; Section XII.A.1.c. For example, Baig describes that the VCSP receives information such as "age and gender information, among other information in their profiles at the time of registration." Ex. 1007, ¶ [0096]. The '260 Patent explains that age and gender are examples of non-personally-identifiable information, and that the user profile information preferably does not include personally-identifiable information (thus indicating that age/gender would be considered as profile information). Ex. 1001, 6:11-20, 8:1-4.

287. As also discussed for claim 1, one of the hotspot-connected devices may be a set-top box. See Sections XII.A.1.a-c; Ex. 1011, ¶¶ [0036], [0042]. Accordingly, in Baig-Costa-Zwicky or Baig-Costa-Banga690, the VCSP servers 224 may receive a login request or receive a request for a community website ("first

being contacted") from a set-top box. Ex. 1007, ¶¶ [0055]-[0056]. After the set-top box logs in or requests the website, the set-top box may participate in services offered by the VCSP, including "receiving particular advertisements" (e.g., via the requested websites). Ex. 1007, ¶¶ [0039], [0052]. For example, Baig describes at step 2208 that, after login, "the VCSP provides advertisements from advertisers," which may be based on the "profile (age/gender) of the users at the hotspot." Ex. 1007, ¶ [0099]. It is thus evident that the advertisements would be sent to a set-top box upon first being contacted by the set-top box (i.e., by a login or website request, such as requesting the VCSP community website) and after the user profile information (e.g., from a user's online interface device) is derived. *Id*. As described above with regard to claim element [1A], it would have been obvious to modify Baig's system such that a set-top box would be incorporated into the vicinity based community (as described in Costa), as it is well known for set-top boxes and other devices, including mobile devices, to share a hotspot. See Section XII.A.1.c, above.

288. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Zwicky-Banga690 teach the additional limitations included in dependent claim 7, and render claim 7 obvious to a POSA.

13. Dependent Claim 86: "The method of claim 61 wherein the first television advertisement is caused to be directed to the set-top box upon first being contacted by the set-top box after the user profile information is derived."

289. Except for their dependencies, claims 86 and 7 are identical. See Ex. 1001, claims 7, 86. Therefore, it is my opinion that a POSA would have found claim 86 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 7. See Section XII.A.12, above.

14. Dependent Claim 8: "The method of claim 1 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address."

290. Claim 8 of the '260 Patent depends from claim 1 and further requires "wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address." Ex. 1001, claim 8. As discussed above, claim 1, from which claim 8 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

291. As explained above, in the Baig-Costa-Zwicky and Baig-Costa-Banga690 combinations, an advertisement for a user is selected based on user profile information. See Section XII.A.1.c. Also in the Baig-Costa-Zwicky and Baig-Costa-Banga690 combinations, the advertisements are selected from a group of possible advertisements ("a plurality of possible television advertisements") based

on user profile information, which is derived in part from user activity. Ex. 1007, ¶¶ [0059], [0099]; Ex. 1014, ¶¶ [0034]-[0046], [0053]-[0060], Figs. 3-4.

292. Baig (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) describes that individuals are automatically added to vicinity-based user groups when they access a website of a VCSP at a hotspot. Ex. 1007, ¶ [0059]. The VCSP selects, based on user profile information of the individuals at the hotspot, advertisements to provide to hotspot devices, and provides the hotspot devices with the selected advertisements accordingly. Ex. 1007, ¶ [0099]. Baig discloses that "profile information about our users, such as age, gender, occupation, interests and the like are requested during the registration process" and that an individual may subsequently edit their profile or update a visibility status. Ex. 1007, ¶¶ [0081], [0093]. In addition to profile information, Baig also discusses tracking geographic location, traffic patterns, and online activities of individuals (e.g., once devices have joined the hotspot). Ex. 1007, ¶¶ [0066], [0093], [0099], [0114]-[0120], Figs. 14-19. Any or all of this information is "user profile information derived from online activity." Accordingly, Baig teaches selecting advertisements based (at least in part) on user profile information derived from the online activity from the first online access IP address. Banga690 also teaches "based at least in part on the user profile information derived from the online activity from the first online access IP address." For example, as I discussed above for claim element [1B], Banga690 teaches

determining user profile information such as user preferences based on network access activity, such as an access point from which the individual is connected to a network. Ex. 1014, ¶¶ [0034]-[0046], [0053]-[0060], Figs. 3-4; Section XII.A.1.c, above. As I discussed for claim element [1B], it is my opinion that it would have been obvious for and a POSA would have been motivated to implement Banga690's user profile information determination processes in Baig's system to improve advertising selection in the targeted advertisement systems of Baig. See Section XII.A.1.c, above.

293. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 8, and render claim 8 obvious to a POSA.

15. Dependent Claim 87: "The method of claim 61 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address."

294. Except for their dependencies, claims 87 and 8 are identical. See Ex. 1001, claims 8, 87. Therefore, it is my opinion that a POSA would have found claim 87 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 8. See Section XII.A.14, above.

16. Dependent Claim 9: "The method of claim 8 wherein the first television advertisement is selected based at least partly on demographic or behavioral attributes included in the user profile information."

295. Claim 9 of the '260 Patent depends from claim 8 and further requires "wherein the first television advertisement is selected based at least partly on demographic or behavioral attributes included in the user profile information." Ex. 1001, claim 9. As discussed above, claim 8, from which claim 9 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

296. As I discussed above for claim 8, Baig (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches "wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address." Section XII.A.14; Ex. 1007, ¶ [0099]. Baig describes that this user profile information includes information received by the VCSP during user registration such as "age and gender information" (the claimed "demographic information"). Ex. 1007, ¶ [0096]. Baig describes that the VCSP selects, based on the user profile information (including the above described demographic information) of the individuals at the hotspot, advertisements to provide to the individuals, and provides the advertisements to the individuals accordingly. Ex. 1007, ¶ [0099]. Baig describes the relevance of user demographics to advertisement selection, and that such demographics profile information is used in advertisement

selection "to attract more viewers of the advertisements." Ex. 1007, ¶ [0120]. Accordingly, it is my opinion that Baig (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches "wherein the first television advertisement is selected based at least partly on demographic . . . attributes included in the user profile information," as required by claim 9.

297. Baig further describes selecting advertisements based on behavioral attributes in the user profile information. Ex. 1007, ¶ [0119]. Baig describes identifying an amount of time spent by individuals in various services provided by the VCSP (e.g., chat room, buy/sell and barter service, or the like). Ex. 1007, ¶ [0119]. Baig describes that considering such time spent accessing these particular services is important in providing advertisements to particular individuals. Ex. 1007, ¶ [0120]. Accordingly, it is my opinion that Baig (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches "wherein the first television advertisement is selected based at least partly on . . . behavioral attributes included in the user profile information," as required by claim 9. Banga690 also teaches similar targeting. For example, Banga690 teaches that advertisements may be selected from an index based on user interests derived from user behavior (e.g., network access patterns/information) and/or demographics. Ex. 1014, ¶¶ [0057]-[0060].

298. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 9, and renders claim 9 obvious to a POSA.

17. Dependent Claim 12: "The method of claim 1 further comprising: (i) receiving at the computer system an identifier corresponding to the set-top box of the user; and (ii) with the computer system causing the television advertisement to be transmitted only if directed to the set-top box corresponding to the identifier."

299. Claim 12 of the '260 Patent depends from claim 1 and further requires [12A]: "receiving at the computer system an identifier corresponding to the set-top box of the user," and [12B]: "with the computer system causing the television advertisement to be transmitted only if directed to the set-top box corresponding to the identifier." Ex. 1001, claim 12. As discussed above, claim 1, from which claim 12 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

300. Claim element [12A] recites receiving an identifier for an individual's set-top box. Baig describes providing network address translation (NAT) at an access point 106. Ex. 1007, ¶ [0043]. This access point 106 in Baig uses a "unique 'public' IP address (e.g., 126.22.99.144 illustratively shown in FIG. 1), which relays data between the wireless mobile devices 102 connected to the wireless network 104 and the external or public network, such as the Internet 122." Ex. 1007, ¶ [0044]. When these devices 102 request information from the public network, they send data packets containing a local IP address to the access point 106. Ex. 1007, ¶ [0045].

The access point 106 then "replaces the 'local' IP address with its own 'public' IP address, and forwards the packets to the destination device." Ex. 1007, ¶ [0046].

301. To the extent that Baig alone does not describe a unique device identifier, Zwicky does. For example, as shown in Figure 5-4 of Zwicky, a network address system performs port and address translation, which will "[d]ynamically allocate an external host address and port pair each time an internal host initiates a connection." Ex. 1012, p. 116. For example, as shown in Figure 5-4 of Zwicky, the public IP address for "Client #1" is "192.123.2.5:2028" (e.g., representing an IP address for the network address system and a port number for "Client #1") whereas the public IP address for "Client #2" is "192.123.2.5:2027" (e.g., representing an IP address for the network address system and a port number for "Client #2"). Accordingly, Zwicky describes that each device will be individually publicly identified using a port number in addition to the public shared IP address. Ex. 1012, pp. 105, 107, 115-116.

302. As I described above, performing port and address translation, as taught in Zwicky, at the NAT-enabled access point 106 in Baig, would have been the mere use of a known technique to improve similar systems in the same way. For example, Zwicky describes the use of port and address translation (i.e., a known technique) to make the most efficient possible use of the external host addresses (i.e., an improvement) as discussed. Ex. 1012, p. 116. And because Baig also teaches a

NAT-enabled access point (i.e., a similar system) for performing network access translation, applying Zwicky's technique would have improved Baig's goals of concealing internal IP addresses from the public internet, while still enabling internet communications. Ex. 1007, ¶ [0047].

303. Furthermore, as described above with regard to claim element [1A], it would have been obvious to modify Baig's system such that a set-top box (as described in Costa) would be incorporated into the vicinity based community (as described in Baig), as it is well known for set-top boxes and other devices, including mobile devices to share a hotspot in public and non-public environments. See Section XII.A.1.b, above.

304. Accordingly, Baig-Costa-Zwicky describes a unique device identifier for the set top box (i.e., a public IP address of the access point along with a port number of the set-top box, as explained for claim elements [1A] and [1B]). See Section XII.A.1.b-c; Ex. 1007, ¶¶ [0044]-[0046]; Ex. 1012, pp. 105, 107, 115-116. Based on a POSA's reading of Baig in view of Zwicky and Costa, a POSA would have understood that in some examples, this unique device identifier takes the form of the combination of: (a) the IP address of the access point, and (b) the TCP/IP port number associated with the mobile device and with the set-top box, using NAT techniques as taught in Zwicky. *Id.* The device identifier is received by at least one

of the VCSP servers 224 hosting the community website in Baig (the "computer system"). Ex. 1007, ¶¶ [0044]-[0046]; Ex. 1012, pp. 115-116, Fig. 5-4.

305. If Patent Owner argues that the set top box would require a device specific identifier other than an IP address and port combination as described in Zwicky, it is my opinion that Banga690 further teaches such device specific identifiers. Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0023]-[0024], [0028]-[0029], [0039], [0041]-[0048], [0059]. As discussed for claim element [1A], Banga690 describes that the client relationship server (CR server) receives access information of devices at the access point in the form of device records. Ex.1014, Figs. 2, 3, ¶¶ [0013], [0028], [0034], [0041]-[0048], [0059]. These device records include a variety of device-specific identifiers, such as media access control ("MAC") addresses, international mobile station identities ("IMSI"), and international mobile equipment identities ("IMEI"), all of which would have been well known to a POSA. Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0023]-[0024], [0028]-[0029], [0039], [0041]-[0048], [0059]; See Section XII.A.1.b, above. Banga690 then describes generating user profile information that include such device-specific identifiers. Ex. 1014, Figs. [0023]-[0024], [0029], [0039]; See Section XII.A.1.b, above. As I discussed for claim element [1A], it would have been obvious to modify Baig with Costa's STB and with the additional device-specific identifiers of Banga690 to facilitate device recognition even when an access point or device port number changes, and thus to

track device activity across different networks to better tailor advertising to individuals at a given access point. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]; See Section XII.A.1.b, above.

306. Accordingly, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "receiving at the computer system an identifier corresponding to the set-top box of the user," as required by claim element [12A].

307. Claim element [12B] recites only sending an advertisement back to the set-top box if the identifier (as noted above with regard to claim element [12A]) is a match. Baig describes targeting particular devices for an advertisement. Ex. 1007, ¶¶ [0094]-[0095], [0099], [0101]-[0105], [0115], [0120]. Using NAT, Baig transmits targeted advertisement packets to a specific device by including the device identifier (e.g., IP address + port number (as taught by Baig-Zwicky), MAC address (as taught by Baig-Banga690), or the like) corresponding to that device. Ex. 1012, pp. 115-116; Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0023]-[0024], [0028]-[0029], [0039], [0041]-[0048], [0059]; Section XII.A.1.b. In responding to the communications between the public internet and the client device, as is described above with regard to claim element [12B], Baig describes that the public network 120 sends packetized information back to the NAT router 108, which replaces "the 'public' IP address with the mobile device's 'local' IP address" and route "the packetized information to the requesting mobile device." Ex. 1007, ¶ [0046]. Accordingly, the targeted

advertisements would only be sent to the destination device (including the set-top box in Baig-Costa-Zwicky and Baig-Costa-Banga690) specified in the packet (claimed "only if directed to the set-top box corresponding to the identifier"). Ex. 1007, ¶¶ [0094]-[0095], [0099], [0101]-[0105], [0115], [0120]; Ex. 1012, pp. 115-116; Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0023]-[0024], [0028]-[0029], [0039], [0041]-[0048], [0059]; Section XII.A.1.b. The packetized information (i.e., an advertisement) is routed only to the device associated with the identifier (e.g., the public IP address of the access point (e.g., as described in Baig)), along with a TCP/IP port number (as described in Zwicky) associated with the set top box connected to the access point (e.g., as described in Costa) and/or any of the additional device identifiers (as described in Banga690). *Id.* Accordingly, the combinations of Baig-Costa-Zwicky and Baig-Costa-Banga690 further teach "with the computer system causing the television advertisement to be transmitted only if directed to the set-top box corresponding to the identifier," as required by claim element [12B].

308. Therefore, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "receiving at the computer system an identifier corresponding to the set-top box of the user," and "with the computer system causing the television advertisement to be transmitted only if directed to the set-top box corresponding to the identifier," as required by claim 12.

309. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 12, and render claim 12 obvious to a POSA.

18. Dependent Claim 91: "The method of claim 61 further comprising the computer system: (i) receiving an identifier corresponding to the set-top box of the user; and (ii) causing the television advertisement to be transmitted only if directed to the set-top box corresponding to the identifier."

310. Except for their dependencies, claims 91 and 12 are substantially identical. See Ex. 1001, claim 12. Therefore, it is my opinion that a POSA would have found claim 91 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 12. See Section XII.A.17, above.

19. Dependent Claim 15: "The method of claim 1 wherein: (i) the user profile information in part (b) includes a list of online access IP addresses corresponding to specific online activities and times and dates corresponding to each of the online activities; and (ii) the computer system causes the television advertisement to be directed to the set-top box of one of the users only if any of the listed online access IP addresses corresponding to the specific online activities and the corresponding dates and times of the online activities match the common IP address assigned to that user and the date and time corresponding thereto."

311. Claim 15 of the '260 Patent depends from claim 1 and further requires "wherein: (i) the user profile information in part (b) includes a list of online access IP addresses corresponding to specific online activities and times and dates corresponding to each of the online activities" (e.g., element [15A]) and "(ii) the

computer system causes the television advertisement to be directed to the set-top box of one of the users only if any of the listed online access IP addresses corresponding to the specific online activities and the corresponding dates and times of the online activities match the common IP address assigned to that user and the date and time corresponding thereto" (e.g., element [15B]). Ex. 1001, claim 15. As discussed above, claim 1, from which claim 15 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

312. Regarding claim element [15A], as I discussed above with regard to claim element [1B], Baig describes deriving user profile information from online activity. See Section XII.A.1.c; Ex. 1007, ¶¶ [0039], [0061], [0093], [0114], [0120], Figs. 5, 14. For example, Baig describes "user profile information derived from online activity" in the form of age, gender, occupation, interests, geographic location, or "other profile information." Ex. 1007, ¶¶ [0061], [0093], Fig. 5. To the extent that Baig fails to teach that the user profile information "includes a list of online access IP addresses corresponding to specific online activities and times and dates corresponding to each of the online activities," Banga690 does.

313. Like Baig, Banga690 describes associating devices with device identifiers. Ex. 1014, ¶¶ [0023]-[0024], [0029], [0039]. These device-specific identifiers include, for example, media access control ("MAC") addresses,

international mobile station identities ("IMSI"), and/or and international mobile equipment identities ("IMEI"). *Id*.

314. In Banga690, access information (including IP addresses, dates, and times) and these device identifiers are stored within a device record, and user profile information is generated using at least some of the information contained in the device record (including the device identifiers). Ex. 1014, ¶¶ [0009], [0034], [0038]-[0039]. A new device record is created each time a user interface device uses a different access point (e.g., IP address) to access the Internet. Ex. 1014, ¶¶ [0038]-[0039]. Using device records, the user interface device is tracked and corresponding information is stored across multiple access points (e.g., past and current IP addresses). Ex. 1014, ¶¶ [0029], [0056]-[0057]. Accordingly, it is my opinion that Banga690 teaches that the user profile information "includes a list of online access IP addresses corresponding to specific online activities and times and dates corresponding to each of the online activities," as required by element [15A].

315. Baig also teaches causing "the television advertisement to be directed to the set-top box of one of the users only if any of the listed online access IP addresses corresponding to the specific online activities and the corresponding dates and times of the online activities match the common IP address assigned to that user and the date and time corresponding thereto," as recited in claim element [15B]. As described above with regard to claim 1, Baig describes identifying that a particular

user is connected to a hotspot at a current time and date using an IP address. Ex. 1007, ¶¶ [0039], [0056], [0061], [0093], [0101], [0114], [0120]; See Section XII.A.1. For example, Baig describes that a user IP address is identified and compared against the common online IP address of a target hotspot (such as a coffee shop) to identify whether or not a device is currently connected to the hotspot. Ex. 1007, ¶¶ [0039], [0056]. In this example, the user IP addresses represent online activity of a user's device, and matching such user IP addresses against the common online IP address represents the claimed "match" between the "online access IP addresses" and "the common IP address." *Id.* Specifically, Baig describes that "the server 224 identifies all the users who have logged in from a common hot spot as having the same access point IP address." *Id.* By identifying which devices are currently connected (e.g., connected at a current time and date) to the hotspot (as is explained above and further for claim 1), Baig teaches matching IP addresses based on a particular time and date (e.g., the current time and date). Section XII.A.1.b; Ex. 1007, ¶¶ [0062], [0093], [0101].

316. It is my opinion that a POSA would recognize the importance of including time/date information in the selection of targeted advertisements, as in some instances, an advertiser may want to present an advertising campaign during a particular time window (which may be a current time window, future time window, or the like). For example, Baig describes that a coffee company may want to

advertise to potential customers located within a hotspot at a particular time of day. Ex. 1007, ¶¶ [0099]-[0102]. In this example, given the coffee company's intention, it would be important to consider time/date information in the selection process for the corresponding advertisement (e.g., in identifying the target recipients), to ensure that the advertisement is delivered according to the coffee company's criteria. Thus, by teaching that the user's network access is matched to current time/date information at the hotspot, Baig teaches matching the claimed "corresponding dates and times of the online activities" to "the date and time corresponding [to the common IP address]," as recited in claim element [15B].

317. Banga690 also teaches these features of claim element [15B]. In Banga690, advertisers target certain demographics at various different times (e.g., at certain times of day during a particular season, or the like). Ex. 1014, ¶ [0058]. For example, user profile information indicates target users that fit the target demographic, and may include particular times at which these target users are accessing a particular network. *Id*. This user profile information is used to select an advertisement for the corresponding user (e.g., to be sent to that user during the desired time). Ex. 1014, ¶ [0060]. In Banga690, "[i]f the user is within a user profile or a user profile can be generated from a device record, then the CR server 150 will use the user profile to select an advertisement from the index of advertisements that satisfy the requirements of the advertisement server and fit the user profile." *Id*.

Thus, Banga690's CR server 150 utilizes the user's IP address to locate a particular user profile, and then utilizes that particular user profile to select an advertisement. *Id.*

318. As I described above, it would have been obvious to a POSA to include the IP addresses/device identifiers corresponding to specific online activities, and the corresponding times and dates as part of the Baig user profile information, and sending advertisements only where the IP address, dates, and times of specific online activities match the common IP address and the corresponding date/time. See Section XII.A. It is my opinion that including such criteria would have been the combination of prior art elements according to known methods to yield predictable results. For example, Baig teaches a known process for targeting advertisements, while Banga690 describes user profile information recording IP addresses, dates, and times of network access. Ex. 1007, ¶¶ [0062], [0093], [0101]; Ex. 1014, ¶¶ [0034], [0038]-[0039]. And as discussed with respect to claim 26, Banga690 teaches a known method for how user profile information may be adapted to include network access (i.e., online activity) date and time information. In the combination, each element, Baig's targeted temporal and geographic targeted advertising and Banga690's user profile information storing date and tiem information would have functioned as each is described in Baig and Banga690, respectively. Ex. 1007, ¶¶ [0062], [0093], [0101]; Ex. 1014, ¶ [0058]. In fact, the process for targeting

certain demographics at certain times (e.g., days, seasons, or the like), is nearly identical in both Banga690 and Baig. *Id*. For example, just as Baig describes targeting users who are currently connected to a coffee shop hotspot, Banga690 describes targeting a certain demographic at a particular time and location by a soft drink company. Ex. 1014, ¶ [0058]. As such, it is my opinion that a POSTA would have found it obvious to achieve Baig's goal of targeting advertisements based on time/location using the time and date information of Banga690. Ex. 1014, ¶¶ [0005], [0035], [0040], [0058], [0060]; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2. The results of the modification to Baig would have been predictable because the addition of information that would naturally be used in temporal advertisement targeting would have been simple and straightforward. In particular, one of skill in the art would have had the requisite knowledge and skillset (e.g., programming a targeted advertisement algorithm to take into account recorded data) to implement such features in Baig.

319. Furthermore, as described above with regard to claim element [1A], a POSA would have found it obvious to modify Baig's system such that a set-top box (as described in Costa) would be incorporated into the vicinity based community (as described in Baig), as it is well known for set-top boxes and other devices, including mobile devices to share a hotspot in public and non-public environments. See Section XII.A.1.b, above. Ex. 1007, ¶¶ [0006], [0039], [0042]-[0043], [0089],

[0095], [0101], [0104], [0124], Figs. 1, 2; Ex. 1011, ¶¶ [0007], [0035]-[0036], [0042], Fig. 1.

320. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 15, and render claim 15 obvious to a POSA.

20. Dependent Claim 94: "The method of claim 61 wherein: (i) the user profile information in part (b) includes a list of online access IP addresses corresponding to specific online activities and times and dates corresponding to each of the online activities; and (ii) the computer system causes the television advertisement to be directed to the set-top box of one of the users only if any of the listed online access IP addresses corresponding to the specific online activities and the corresponding dates and times of the online activities match the common IP address assigned to that user and the date and time corresponding thereto."

321. Except for their dependencies, claims 94 and 15 are identical. See Ex. 1001, claim 15. Therefore, it is my opinion that a POSA would have found claim 94 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 15. See Section XII.A.19, above.

21. Dependent Claim 17: "The method of claim 1 wherein the computer system is a central ad server and the first television advertisement is received at the central ad server and directed to the set-top box."

322. Claim 17 of the '260 Patent depends from claim 1 and further requires "wherein the computer system is a central ad server and the first television

advertisement is received at the central ad server and directed to the set-top box." Ex. 1001, claim 17. As discussed above, claim 1 is taught by Baig-Costa-Zwicky, and Baig-Costa-Banga690. See Section XII.A.1.

323. A POSA would have understood that Baig's VCSP provides a central ad server as broadly defined by the '260 Patent. The '260 Patent describes that a central ad server may include "a computer server that manages delivery of online advertisements to visitors of online sites." Ex. 1001, 4:40-61. Baig's VCSP 202 meets that definition. For example, Baig's VCSP 202 (servers 224) is configured to create mesh networks comprising multiple WiFi hotspots and to manage delivery of online advertisements to visitors of these networks (e.g., visitors of websites of the VCSP 202) via its servers. Ex. 1007, ¶¶ [0059]-[0061], [0099], [0104]-[0106], [0120]. Baig's VCSP 202 necessarily first receives advertisements from advertisers, and then provides them to the devices connected at the hotspot. Ex. 1007, ¶¶ [0059]-[0061], [0099], [0104]-[0106], [0120]. Baig's system allows advertisers to target the audience of a particular hotspot (e.g., based on the user profile information I described above at Section XII.A.1.c with respect to element [1B]). Ex. 1007, ¶ [0093]. Baig describes that advertisers "select individual hotspots or hotspots in a particular city or particular zip code" and "select the time during which they want their advertisements to appear to users," by doing so "[t]hrough the VCSP". Ex. 1007, ¶ [0104]. Baig's VCSP 202 subsequently receives the advertisements to

provide them to the selected hotspots at the time during which advertisers want their advertisements to appear. Ex. 1007, ¶¶ [0059]-[0061], [0099], [0104]-[0106], [0120].

324. Once the VCSP receives the advertisements, it provides them to the devices 102 at the selected hotspots so that the advertisements would be viewed by the individuals using the devices 102 through, e.g., a website (claimed "online site"). Accordingly, it is my opinion that the VCSP manages delivery of online advertisements to visitors of online sites.

325. Additionally, it would have been obvious to a POSA that Baig's system, when modified to include Costa's set-top box, would provide the first television advertisement in the method required by claim 17. As I explained above at Section XII.A.1, a POSA would have been motivated to combine Baig with Costa such that Baig's devices 102 would include a set-top box (e.g., to provide television content to individuals at a hotspot). A POSA would have known that set-top boxes commonly receive advertisements to display along with television content, such as the advertisements as discussed in Costa. Ex. 1011, ¶¶ [0014], [0017], [0031], [0066], [0072]. Therefore, it would have been obvious that the VCSP would have directed the advertisements to, among other devices, the set-top box. Ex. 1007, ¶¶ [0059]-[0061], [0099], [0104]-[0106], [0120].

326. Accordingly, as explained above, Baig in view of Costa (and thus, Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches the additional limitations included in dependent claim 17, and renders claim 17 obvious to a POSA.

22. Dependent Claim 96: "The method of claim 61 wherein the computer system is a central ad server and the first television advertisement is received at the central ad server and directed to the set-top box."

327. Except for their dependencies, claim 96 is identical to claim 17. See Ex. 1001, claim 17. As I discussed above at Section XII.A.2, claim 61 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. Therefore, it is my opinion that claim 96 would have been obvious to a POSA in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 17. See Section XII.A.21, above.

23. Dependent Claim 18: "The method of claim 1 wherein part (b) comprises, with the computer system, directing instructions to a profile provider, to an online site, or to an independent ad server to direct the first television advertisement to the set-top box."

328. Claim 18 of the '260 Patent depends from claim 1 and further requires "wherein part (b) comprises, with the computer system, directing instructions to a profile provider, to an online site, or to an independent ad server to direct the first television advertisement to the set-top box." Ex. 1001, claim 18. In other words, while previously discussed claims 17 (see Section XII.A.21) and 96 (see Section

XII.A.22), require that the computer system is an ad server that directs the television advertisement to the set-top box, claim 18 requires that the computer system instructs another system to direct the television advertisement to the set-top box. For example, the claim requires that the computing system instruct one of "a profile provider," "an online site," or "an independent ad server," to direct the television advertisement. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

329. Although Baig does not explicitly disclose a separate profile provider and sending an instruction to the profile provider to direct an advertisement, Banga690 does and it would have been obvious to modify Baig to use such an architecture and technique. Regarding use of a separate profile provider, modifying Baig's VCSP system 202 such that the profile information was provided by a separate provider component or server would have been obvious as I discussed for claim 26. Section XII.A.3. More specifically, Baig teaches that VCSP system 202 may include "at least one server 224." Ex. 1007, ¶¶ [0052]-[0053]. A POSA would have understood that Baig contemplates a system architecture where functions may be distributed across multiple servers 224. Additionally, Banga690 also explains that it was well-known to have separate functionalities in a similar targeted advertisement system by using a separate profile provider such as CR server 150. Section XII.A.3; Ex. 1014, ¶¶ [0013], [0023]-[0030], [0038]-[0048], [0059], [0063]-

[0069], [0073]-[0075], Fig. 2. For example, a POSA would have understood that Banga690's CR server 150 is a "profile provider" as recited in claim 18 because it generates the profiles and provides them to content provider 140. Accordingly, and as explained above (Section XII.A.3), modifying Baig such that profile information collection and management and advertisement selection are provided by a separate profile provider while another server performed electronic associations and VCSP services, including an advertising bidding platform, would have been obvious either in view of Baig-Costa-Zwicky or Baig-Costa-Banga690.

330. It is my opinion that it would also have been obvious to modify Baig such that instructions were provided to the separate profile provider (as I explained in the preceding paragraph) to direct the first television advertisement to the set-top box in view of Banga690's teachings. For example, Banga690 teaches a CR server 150 receiving information, such as device identifiers, IP addresses associated with the device identifiers, access information for each device (e.g., prior IP addresses), as well as other information related to a user, to generate profiles which are in turn used to identify user preferences to provide to content provider 140. Ex. 1014, ¶¶ [0038], [0040], [0045], [0049]-[0051], [0053]-[0060], Figs. 2-4.

331. Banga690 also teaches that advertisements may be delivered by the CR Server 150 in response to a request from an advertising server or content provider. Ex. 1014, ¶ [0060] (describing that an advertisement tag, which may include the

advertisement, is sent to the advertisement server or content provider). For example, in response to such a request, CR Server 150 would direct a selected advertisement to the set-top box through the advertisement server or content provider. *Id.* Given that both Baig and Banga690 both relate to targeted advertisement systems, and teach analogous functionality (e.g., content providers, advertisement selection, profile management), it would have been obvious to a POSA to have adopted Banga690's technique for advertisement delivery in the Baig-Costa-Banga690 combination because such a combination would have been the use of a known technique to improve similar targeted advertising systems in the same way. Ex. 1007, ¶¶ [0093]-[0102]; Ex. 1014, ¶¶ [0053]-[0060]; See Section IV (referring to obviousness rationale (C)). In the Baig-Costa-Banga690 combined system, at least one of Baig's VCSP content server(s) 224 ("computer system") would direct instructions to a profile provider (claimed "direct[s] instructions to a profile provider") to provide an advertisement in the same manner that Banga690 teaches directing an advertisement request to the CR server 150 (i.e., a profile provider) for sending an advertisement to a content provider for a user device. Ex. 1014, ¶ [0060]. In the combined system, that user device includes a set-top box (claimed "to direct the first television advertisement to the set-top box"). Baig's similar targeted advertising system would be improved because the VCSP system would be able to access and offer advertisements from a wider array of sources. Additionally, using

Banga690's technique may also alleviate or reduce the need for Baig's VCSP system or servers to store the universe of advertisements locally.

332. It is my opinion that a POSA would also have found this combination to be obvious because it would have been the simple substitution of one known technique for another (different ways to select and deliver advertisements) to obtain predictable results. See Section IV (referring to obviousness rationale (A)). For example, a POSA would have recognized that advertisements could be delivered in one of two ways in Baig: by the same server that is responsible for creating the electronic associations and hosting the community website (e.g., one of Baig's VCSP servers 224), or by another server or device, such as a profile provider. A POSA would have found it logical to house advertisement selection and management at the same location (e.g., server or device) as profile management since the profile information would be used for targeted advertising. And given that Banga690 teaches the technique for delivering advertisement by a separate profile provider, the result of the modification to Baig would have been predictable. Additionally, the modification would have been a straightforward choice of system architecture to a POSA, and the POSA would have had the skill set to modify and implement such an advertisement delivery process. *Id*. Accordingly, the result of the modification would have been predictable.

333. Accordingly, as shown above, Baig-Costa-Banga690 teaches the additional limitations of claim 18 and renders claim 18 obvious to a POSA.

24. Dependent Claim 97: "The method of claim 61 wherein part (b) comprises, with the computer system, directing instructions to a profile provider, to an online site, or to an independent ad server to direct the first television advertisement to the set-top box."

334. Except for their dependencies, the claims 97 and 18 are identical. See Ex. 1001, claim 18. Therefore, it is my opinion that claim 97 would have been obvious to a POSA in view of Baig-Costa-Banga690 for the same reasons as claim 18. See Section XII.A.23, above.

25. Dependent Claims 21 and 100

335. Claim 21 of the '260 Patent depends from claim 1 and further requires "wherein the computer system causes the first television advertisement to be directed without a request for advertisements originating from the user's set-top box." Ex. 1001, claim 21. As I explained above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teaches automatically delivery of television advertisements. See Section XII.A.1.

336. It is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga69 also renders obvious direction of a television advertisement without requiring a request from a user's set-top box. Indeed, it was well-known in the web and HTML field that there were two ways in which a webpage could be automatically updated. Ex.

1054, 48-49. One method was a client pull process where the client browser would request the updated information. Ex. 1054, 48. In one example, the browser could be instructed to make such a request at a predefined interval (e.g., every 30 seconds). Ex. 1054, 48. The other method was the server push process whereby the server was able to simply push the updated content to the browser client without the client having to make a request. Ex. 1054, 48. Both were known in the art well before the alleged invention of the '260 Patent, and each would have been obvious to try as there were only a finite number of possibilities to implement webpage updates. See Section IV (Obviousness rationale (E)). Again, Baig already teaches displaying advertisements in a webpage (e.g., banners, text, etc.) and a POSA would have found it obvious to have used one of the few options available for delivering such advertisements to a webpage. A POSA would also have the basic HTML knowledge to program either of these two types of web content delivery methods, and would have found the results of implementing a server push model in Baig predictable.

337. Accordingly, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 render claims 21 and 100 obvious.

26. Dependent Claim 22: "The method of claim 1 wherein the online access IP address of each user is an IP address associated with a modem or router used by that user for online access."

338. Claim 22 of the '260 Patent depends from claim 1 and further requires "wherein the online access IP address of each user is an IP address associated with

a modem or router used by that user for online access." Ex. 1001, claim 22. As discussed above, claim 1, from which claim 22 depends, is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

339. As discussed for claim element [1A], both Baig-Costa-Zwicky and Baig-Costa-Banga690 teaches users gaining online access through online access IP addresses. See Section XII.A.1.b, above. Claim 22 further requires, "the online access IP address of each user is an IP address associated with a modem or router used by that user for online access." Ex. 1001, claim 22. Baig discloses that its router uses NAT to "replace the 'local' IP address with its own 'public' IP address[.]" Ex. 1007, ¶¶ [0046]-[0051]. That is, Baig describes that all outgoing traffic from the router carries the public IP address. Ex. 1007, ¶ [0050]. Baig's server then identifies each user using the common public IP address of the router at the hotspot. Ex. 1007, ¶ [0050]. Thus, because each individual connecting to Baig's router would use the router's public IP address for online access, Baig discloses the additional requirements of claim 22.

340. Therefore, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "wherein the online access IP address of each user is an IP address associated with a modem or router used by that user for online access" as required by claim 22.

341. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 22, and render claim 22 obvious to a POSA.

27. Dependent Claim 101: "The method of claim 61 wherein the online access IP address of each user is an IP address associated with a modem or router used by that user for online access."

342. Except for their dependencies, claims 101 and 22 are identical. See Ex. 1001, claim 22. Therefore, it is my opinion that a POSA would have found claim 101 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 22. See Section XII.A.26, above.

28. Dependent Claim 24: "The method of claim 1 further comprising receiving a revenue amount as a result of directing the advertisement."

343. Claim 24 of the '260 Patent depends from claim 1 and further requires "receiving a revenue amount as a result of directing the advertisement." Ex. 1001, claim 24. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Costa and Banga690. See Section XII.A.1.

344. As I explained above at Section XII.A.1.c with respect to element [1B], Baig in view of Costa and Zwicky and Baig in view of Costa and Banga690 discloses providing targeted advertisements to users. Ex. 1014, ¶¶ [0005], [0035], [0040], [0058], [0060]; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104],

[0124], Figs. 1, 2. Specifically, as I explained with respect to claim 17, the advertisements are directed to the devices 102 (e.g., a set-top box) at Baig's hotspot by the VCSP 202. See Section XII.A.21, above. Claim 24 requires the computer system (i.e., Baig's VCSP 202) to "receiv[e] a revenue amount as a result of directing the advertisement." It is my opinion that Baig renders this additional limitation obvious to a POSA.

345. Baig discusses a bidding process, which a POSA would have recognized would result in the generation of revenue. Baig's bidding process is such that "multiple advertisers can bid against each other to have their advertisements displayed." Ex. 1007, ¶ [0102]; see also Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0103]-[0106], Fig. 21. The winner of the bidding process earns the right to have their advertisements delivered by Baig's VCSP 202 to devices 102 at one or more hotspots. Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0102]-[0106], Fig. 21. It would have been obvious to a POSA that the winner of the bidding process would necessarily pay an amount (i.e., the amount of their winning bid) to have their advertisements delivered. Because Baig describes its bidding process as being facilitated by VCSP 202, it would have been obvious to a POSA that Baig's VCSP content server(s) (claimed "computer system") would receive, as a revenue, the amount of the winning bid. Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0102]-[0106], Fig. 21.

346. Although not required by claim 24, I have been asked to consider a scenario where the revenue of claim 24 is required to be received "automatically," as some similar claims (claims 34 and 42) in the '260 Patent require. It is my opinion that Baig also teaches automatically receiving the revenue described above. As I explained with respect to element [1B] above at Section XII.A.1.c, Baig's VCSP 202 automatically delivers user profile information as well as targeted advertisements based on the user profile information. Ex. 1007, ¶¶ [0052], [0093], [0099]-[0101], claim 13. Before delivering the targeted advertisements, advertisers "select individual hotspots or hotspots in a particular city or particular zip code" and "select the time during which they want their advertisements to appear to users," by doing so "[t]hrough the VCSP". Ex. 1007, ¶ [0104]. As I have explained in Section XII.A.21 with respect to claim 17, Baig's VCSP 202 would subsequently receive the advertisements to provide them to the selected hotspots at the time during which advertisers want their advertisements to appear. Ex. 1007, ¶¶ [0059]-[0061], [0099], [0104]-[0106], [0120]. It would have been obvious to a POSA that, as part of the automated process by which Baig's VCSP receives and delivers targeted advertisements, the VCSP would similarly automatically receive revenue from the advertisers upon the direction delivery of the television advertisement. Ex. 1007, ¶¶ [0052], [0093], [0099]-[0101], claim 13.

347. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 24, and render claim 24 obvious to a POSA.

29. Dependent Claims 34, 42, and 103

348. Except for their dependencies, these claims are nearly identical to claim 24. See Ex. 1001, claims 34, 42, and 103. Claims 24 and 103 require the computer system to "receiv[e] a revenue amount as a result of directing the advertisement," and claims 34 and 42 similarly require the computer system to "automatically receiv[e] a revenue amount as a result of direction of the first television advertisement." As I described with respect to claim 24, it would have been obvious to a POSA that Baig-Costa-Zwicky and Baig-Costa-Banga690 would "automatically" perform the limitations of claim 24. As I explained above at Sections XII.A.2-4, claims 61, 26, and 38, from which claims 103, 34, and 42 depend, are taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. Therefore, it is my opinion that a POSA would have found claims 34, 42, and 103 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 24. See Section XII.A.28, above.

30. Dependent Claim 28: "The method of claim 26:"

349. As discussed above, claim 26, from which claim 28 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

a) [28A]: "wherein delivered user profile information of a second user of the multitude of users (i) is derived from online activity of the second user from a second online user interface device via a second online access IP address and (ii) includes identification of the second online access IP address and the time and date of the online activity,"

350. Claim element [28A] simply recites the same processes as claim element [26C] which is taught by Baig-Costa (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690), but for a second online user interface device and a second online access IP address. See Sections XII.A.1.c, XII.A.7. As I discussed above with regard to claims 1, 3, and 26, Baig-Costa teaches an advertisement delivery system that is used for a plurality of devices and hotspots, including a second online user interface device and a device associated with a second online access IP address (e.g., at a second hotspot). See Sections XII.A.1.c, XII.A.3, XII.A.7; Ex. 1007, ¶¶ [0048]-[0059], [0067], [0093]-[0106], Figs. 2, 3, 12; Ex. 1011, ¶¶ [0035]-[0042], Fig. 1. In particular, Baig-Costa teaches other VCSP hotspot sites hosting other online user interface devices such as a laptop and other set-top boxes. Ex. 1007, ¶¶ [0048]-[0059], [0067], [0093]-[0106], Figs. 2, 3, 12; Ex. 1011, ¶¶ [0035]-[0042], Fig. 1. Like for the first hotspot, first online user interface device, and first online access IP address, Baig-Costa's system uses user profile information derived from online activity from a second online user interface device at the hotspot (e.g., user survey information, user network access information such as IP address and time

and date of online activity) via a second online access IP address (e.g., the public IP address of the second hotspot). Ex. 1007, ¶¶ [0093]-[0106], Fig. 12.

351. Therefore, it is my opinion that Baig-Costa (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches "wherein delivered user profile information of a second user of the multitude of users (i) is derived from online activity of the second user from a second online user interface device via a second online access IP address and (ii) includes identification of the second online access IP address and the time and date of the online activity," as required by claim element [28A].

b) [28B]: "as a result of which delivery, a second television advertisement, different from the first television advertisement, is directed to a second set-top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address that the server associates with the second online access IP address, for selective presentation via that set-top box, and"

352. Baig-Costa-Zwicky and Baig-Costa-Banga690 also teach element [28B] for the substantially the same reasons Baig-Costa-Zwicky and Baig-Costa-Banga690 teach elements [26D], [1C] and claim 3 (which recite, e.g., substantially the same targeted advertisement direction process as is described in [28B]). Sections XII.A.1.c, XII.A.3, XII.A.7. As discussed for claim element [28A], Baig-Costa-Zwicky and Baig-Costa-Banga690 teach performing the same targeted

advertisement processes for a second set of devices and a second hotspot as for a first, including directing a second television advertisement different from the first advertisement, to a second set-top box. Ex. 1007, ¶¶ [0093]-[0106], Fig. 12; Ex. 1011, ¶¶ [0035]-[0042], Fig. 1. Baig-Costa-Zwicky and Baig-Costa-Banga690 further teach that the VCSP computer system allows for advertisers to bid for advertising opportunities for devices at a second hotspot and transmitting those advertisements to the second hotspot devices, including a second set-top box using the second public hotspot IP address (i.e., "a second television advertisement, different from the first television advertisement, is directed to a second set-top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address that the server associates with the second online access IP address, for selective presentation via that set-top box."). Ex. 1007, ¶¶ [0093]-[0106], Fig. 12; Ex. 1011, ¶¶ [0035]-[0042], Fig. 1.

353. Therefore, it is my opinion that Baig-Costa (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teach "as a result of which delivery, a second television advertisement, different from the first television advertisement, is directed to a second set-top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address that the server associates with the second online access IP address, for selective presentation via that set-top box, and" as is required by claim element [28B].

c) [28C] "wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively."

354. Except for their dependencies, claim element [28C] is identical to claim element [3B]. Thus, claim element [28C] is rendered obvious by the prior art for the same reasons as claim element [3B], in view of the analysis for claim 26. See Sections XII.A.7, XII.A.3, XII.A.1.c.

355. Therefore, it is my opinion that Baig-Costa (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches "wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively," as required by claim element [28C].

356. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 28, and render claim 28 obvious to a POSA.

31. Dependent Claim 151: "The method of claim 38: (e) wherein delivered user profile information of a second user of the multitude of users (i) is derived from online activity of the second user from the second user's online user interface device via a second online access IP address and (ii) includes identification of the second online access IP address and the time and date of the online activity, (f) as a result of which delivery, a second television advertisement, different from the first television advertisement, is directed to a second set-top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box identifier that the server associates with the second online user interface device identifier of the second user's online user interface device, for selective presentation via that set-top box, and (g) wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively."

357. Except for their dependencies and the change from "set-top box IP address" to "set-top box identifier," claim 151 is identical to claim 28. See Ex. 1001, claim 28. Therefore, it is my opinion that a POSA would have found claim 151 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 28. See Sections XII.A.2, XII.A.3, and XII.A.30, above.

32. Dependent Claim 31: "The method of claim 26 further comprising, with the computer equipment, automatically selecting the first television advertisement based on the user profile information."

358. Claim 31 of the '260 Patent depends from claim 26 and further requires "further comprising, with the computer equipment, automatically selecting the first television advertisement based on the user profile information." Ex. 1001, claim 31.

As discussed above, claim 26, from which claim 31 depends, is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

359. As I discussed for claim element [26D], Baig teaches that the VCSP receives user profile information (e.g., information such as age, gender, or other information, entered into their profiles at the time of registration). Ex. 1007, ¶¶ [0061], [0093], [0096]; See Section XII.A.3. Baig further describes that the components of the VCSP ("computer equipment") will automatically provide advertisements based on this user profile information, e.g., by allowing advertisers to bid on advertising space/time using the user profile information. Ex. 1007, ¶¶ [0058]-[0059], [0093]-[0095], [0099]. For example, an advertisement may be automatically provided based on detecting that a given user profile matches a target demographic, that a current time is within a target time window, or the like. Ex. 1007, ¶ [0058]. Similarly, Banga690 teaches CR server 150 ("computer equipment") selecting and providing advertisements based on user preferences/profile information. Ex. 1014, ¶¶ [0034]-[0046], [0053]-[0060], Figs. 3-4.

360. Therefore, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "with the computer equipment, automatically selecting the first television advertisement based on the user profile information," as required by claim 31.

361. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 31, and render claim 31 obvious to a POSA.

33. Dependent Claims 39 and 147

362. Except for their dependencies, claims 39 and 147 are identical to claim 31. See Ex. 1001, claims 39 and 147. Therefore, it is my opinion that a POSA would have found claims 39 and 147 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 31. See Section XII.A.32, above.

34. Dependent Claims 32, 88, and 145

363. Except fortheir dependencies, claims 32, and 88 are identical to claim 9. See Ex. 1001, claims 32 and 88. Therefore, it is my opinion that a POSA would have found claims 32 and 88 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 9. See Section XII.A.16, above.

364. Except fortheir dependencies, claim 145 is nearly identical to claim 9, and thus it is my opinion that a POSA would have found claim 145 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for substantially similar reasons as claim 9. See Section XII.A.16, above. For example, both claims require that the user profile information comprise/include demographic attributes. And, as described above with respect to claim 9, Baig teaches that the user profile information (e.g., demographic or behavioral information) may be collected through a VCSP website

using a user's device (the claimed "collected through an Internet site accessed with the online user interface device of the first user"). Ex. 1007, ¶ [0093]. As explained for claim 9 at Section XII.A.16, above, Baig also teaches that this information is used in advertisement selection after being collected through a VCSP website and using a device connected to the hotspot. Therefore, it is my opinion that a POSA would have found claim 145's "wherein the user profile information derived from the online activity comprises demographic attributes collected through an Internet site accessed with the online user interface device of the first user" obvious for substantially the same reasons described above with respect to claim 9's "wherein the first television advertisement is selected based at least partly on demographic or behavioral attributes included in the user profile information." See Section XII.A.16 above.

35. Dependent Claim 35: "The method of claim 26 further comprising, with the computer equipment, electronically delivering the first television advertisement to the computer system for subsequent direction to the set-top box."

365. Claim 35 of the '260 Patent depends from claim 26 and further requires "with the computer equipment, electronically delivering the first television advertisement to the computer system for subsequent direction to the set-top box." Ex. 1001, claim 35. As discussed above, claim 26, from which claim 35 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

366. As discussed for claim element [26D], Baig describes delivering television advertisements based on user profile information. See Section XII.A.3; Ex. 1007, ¶¶ [0058]-[0059], [0093]-[0095], [0099]. Baig describes advertisers targeting "the audience of a particular hotspot according to the profile, e.g., age/gender etc. of the users and/or a particular time of the day." Ex. 1007, ¶ [0093]. In Baig, the VCSP provides advertisements from particular businesses or other entities that advertise through the VCSP for a particular hotspot based on geographical location, profile information, time of day, or the like. Ex. 1007, ¶ [0099], Fig. 22. In my opinion, a POSA would have understood that in choosing to advertise at a particular hotspot at a certain time of day, Baig describes "electronically delivering the first television advertisement to the computer system for subsequent direction."

367. To the extent that Patent Owner argues that Baig alone fails to teach the "computer equipment" in addition to the "computer system for subsequent direction to [a] set-top box," it would have been obvious to modify Baig such that Baig's content server 224 receives advertisements from separate computing equipment, based on the teachings of Banga690. In Banga690, storage of both user profile information and an index of advertisements is performed by CR server 150 ("computer equipment"). Ex. 1014, ¶ [0060]. Based on the user profile information, the CR server 150 selects advertisements from the index. *Id*. Banga690 describes a

particular example in which the CR server 150 checks "the weather of the city and state from resources available on the Internet to include those users in hot climates and temperatures to be included within the user profile." Ex. 1014, ¶ [0058]. Once an advertisement is selected, the CR server 150 sends it to an advertising server. Ex. 1014, ¶ [0060]. Specifically, Banga690 describes sending an advertisement tag, which may be the selected advertisement. *Id*. This advertisement is then sent from the advertising server to a content provider, and then from the content provider to a user device. *Id*. As a particular example, the user device may be a set-top box in the Baig-Costa-Banga690 system, thus teaching the "subsequent direction to the set-top box". Ex. 1014, ¶¶ [0040], [0059]-[0060]. Accordingly, Baig's server 224 would request (e.g., for delivery to the STB) an advertisement from CR server 150, when an advertiser in Baig wins a bid for a hotspot advertisement slot. *Id*. It is worth noting that claim 35 does not require the delivery of the advertisement to be direct from the "computer equipment" to the "computer system." Rather, it is my opinion that the claim is drafted in a manner that permits the routing of advertisements from "the computer equipment" to the "computer system" via one or more intermediary systems, such as the advertising server of Banga690.

368. As discussed for claim element [26A], it would have been obvious to implement Banga690's CR server 150 ("computer equipment") into Baig's system, where the CR server 150 would select and deliver advertisements. This combination

would be the mere use of a known technique to improve similar systems (e.g., by dividing functionality between different servers for processing efficiency and load management) in the same way. See Section XII.A.3 above.

369. For example, managing advertisement selection using a customer relationship server is a known technique as taught by Banga690, that would improve the targeted advertising systems in both Banga690 and Baig (e.g., similar systems). Such improvement would occur in the same way for both systems, such as by distributing load and improving processing efficiency as discussed for element [26A]. Ex. 1014, ¶¶ [0053]-[0060], Fig. 4; Ex. 1007, Abstract, ¶¶ [0058]-[0061], [0093]-[0095]. For example, Banga690 describes using "a user profile to select an advertisement from the index of advertisements that satisfy the requirements of the advertisement server and fit the user profile" and subsequently sending the advertisement "to the advertisement server which, in turn, can provide the proper advertisement to the content provider 140." Ex. 1014, ¶ [0060]. Furthermore, Baig describes a VCSP 202 (including server 224) that provides "particular services to users accessing a particular hotspot 110," such as targeted advertisements. Ex. 1007, ¶ [0058].

370. Banga690 teaches a known method of using a separate server 150 to determine and use a variety of profile information to select targeted advertisements for delivery to advertisement servers and content providers. Ex. 1014, ¶¶ [0053]-

[0060], Fig. 4. For example, as described above, Banga690's CR server 150 performs this determination and delivers the advertisement to the content provider 140. Ex. 1014, ¶ [0060]. A POSA would have been motivated to incorporate CR server 150's ability to select and deliver advertisements into Baig's system so that Baig's server 224 (i.e., an example of Banga690's advertisement server or content provider) would obtain targeted advertisement selections rather than managing and storing the advertisements accordingly. Ex. 1014, ¶¶ [0053]-[0060], Fig. 4; Ex. 1007, Abstract, ¶¶ [0058]-[0059], [0061], [0093]-[0095]. In the combined system, Banga690's CR server 150 would select an advertisement based on user profile information and send the selected advertisement to Baig's server 224 of the VCSP 202. *Id*. Moreover, the results of the above combination, which would have included a separate server from VCSP 202, which would handle profile management and advertisement selection for delivery to VCSP 202, would have been predictable to a POSA. *Id.*

371. Furthermore, as described above with regard to claim element [26A], it would have been obvious to modify Baig's system such that a set-top box (as described in Costa) would be incorporated into Baig's vicinity based community (as described in Baig), as it is well known for set-top boxes and other devices, including mobile devices to share a hotspot in public and non-public environments. See Section XII.A.3, above.

372. Therefore, it is my opinion that Baig-Costa (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches "with the computer equipment, electronically delivering the first television advertisement to the computer system for subsequent direction to the set-top box," as required by claim 35.

373. Accordingly, as shown above, Baig-Costa-Banga690 teaches the additional limitations included in dependent claim 35, and renders claim 35 obvious to a POSA.

36. Dependent Claim 36: "The method of claim 26 further comprising, with the computer equipment, directing the television advertisement to the set-top box in response to instructions received from the computer system."

374. Claim 36 of the '260 Patent depends from claim 26 and further requires "with the computer equipment, directing the television advertisement to the set-top box in response to instructions received from the computer system." Ex. 1001, claim 36. As discussed above, claim 26 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. Section XII.A.3.

375. Claim 36 differs from claim 35 in that the advertisement is directed "in response to instructions received from the computer system." Banga690 describes that advertisements are selected/sent by the CR server 150 ("with the computer equipment, directing the television advertisement") in response to "[an] advertisement server [directing] a request for an advertisement tag with [a] user's IP address to the CR server 150." Ex. 1014, ¶ [0060]. As discussed above with respect

to claim 26 (Sections XII.A.1 and XII.A.3), Baig's VCSP content server in the Baig-Costa-Banga690 system (recited "computer system") functions as an advertising bidding platform.

376. It would have been obvious for a POSA to modify Baig to include the client relationship (CR) server 150 ("the computer equipment") of Banga690, which selects an advertisement to be sent to an individual via an advertising server and/or content provider ("directing the television advertisement"). Ex. 1014, ¶ [0060]. See Section XII.A.35, above. It is worth noting that claim 35 does not require the delivery of the advertisement to be direct from the "computer equipment" to the "computer system." Rather, it is my opinion that the claim is drafted in a manner that permits the routing of advertisements from "the computer equipment" to the "computer system" via one or more intermediary systems, such as the advertising server of Banga690, as is described further below.

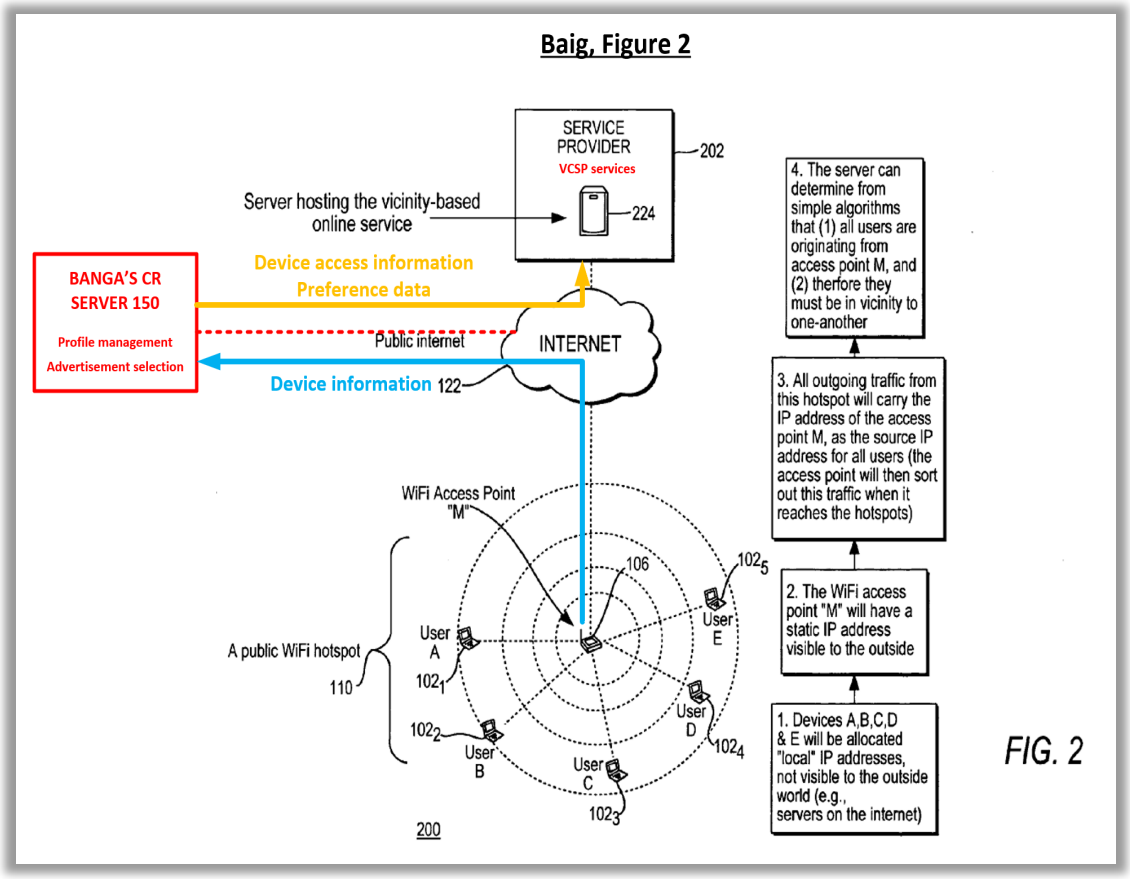
377. In the combined system, Baig's VCSP is akin to the advertising server in Banga690. Ex. 1014, ¶ [0060]; Sections XII.A.3 and XII.A.35. Just as Banga690's advertising server directs a request for an advertisement to the CR server 150, in the Baig-Costa-Banga690 system (which includes Baig's content servers that deliver advertisements, advertising bidding platform, and Banga690's CR server 150), the advertising bidding platform of Baig's VCSP content server(s) ("computer system") would direct a request ("instructions from the computing system") for an

advertisement to the CR server 150 ("computer equipment"), which would then send the advertisement back to Baig's VCSP content server(s) ("computer system") in response to that request. *Id*. It would have been obvious to include the advertising-support functionality of Banga690's CR Server 150 for the same reasons explained for claims 26 and 35. Sections XII.A.3 and XII.A.35.

378. In the Baig-Costa-Banga690 system, which is illustrated in the annotated figure below, access information may be sent from various wireless access points (e.g., wireless access point M, and/or other similar access points) to the CR server 150. Ex. 1014, ¶¶ [0053]-[0055]. The CR server 150 then generates user profile information based on the access information, and stores the user profile information accordingly. Ex. 1014, ¶¶ [0056]-[0060]. Additionally, the CR server 150 ("computer equipment") may store "an index of advertisements and associated advertisement information." Ex. 1014, ¶ [0060].

379. The advertising bidding platform of the VCSP (which may, e.g., be one of the servers 224) may allow for various advertisers to bid for rights to advertise at particular hotspots at particular times. Ex. 1007, ¶¶ [0062], [0103]-[0106]. For example, the advertising bidding platform would enable "advertisers to bid for rights to advertise at a prime hotspot for a particular time of the day for a particular audience either at one or more vicinity-based hotspots in the mesh network of the VCSP 202." Ex. 1007, ¶ [0062]. Once the bidding process is complete, just as the

advertising server in Banga690 directs a request for an advertisement to the CR server 150, the advertising bidding platform of Baig-Costa-Banga690 would direct a request (the claimed "instructions from the computing system") to the CR server 150 for an advertisement. Ex. 1014, ¶ [0060]. The transmission of such a request would be obvious in the proposed system, as the selection of advertisements is handled by the CR server 150 as taught in Banga690. For example, the CR server 150 maintains an "index of advertisements" and may use a user profile "to select an advertisement from the index of advertisements that satisfy the requirements of the advertisement server and fit the user profile" (e.g., on behalf of the advertising entity that was selected in the bidding process). Ex. 1014, ¶ [0060]. Once an advertisement is selected, the CR server 150 may provide the advertisement and/or user profile information (**orange**) to the VCSP, which may e.g., provide the selected advertisement to one or more users at the hotspot. *Id.*



Ex. 1007, Fig. 2 (annotated with Banga690's CR Server)

Accordingly, the request from the advertisement server to the CR server 150 teaches the recited "instructions from the computer system."

380. Furthermore, as described above with regard to claim element [26A], it would have been obvious to modify Baig-Costa-Zwicky's system and/or Baig-Costa-Banga690's system such that a set-top box (as described in Costa) would be incorporated into the vicinity based community (as described in Baig), as it is well known for set-top boxes and other devices, including mobile devices to share a hotspot in public and non-public environments. In these instances, it would be

obvious to direct the advertisement to the set-top box, as recited in claim 36. As described above at element [1A], Baig describes that content (such as targeted advertisements) is routed from the VCSP 202 to the various devices connected to the hotspot access point 106. Ex. 1007, ¶¶ [0093]-[0106], Fig. 2; See Section XII.A.1.a. In instances where the Baig's system is modified to include the set-top box of Costa, such television advertisements would likewise be directed "to the set-top box," as recited in claim 36.

381. Therefore, it is my opinion that Baig-Costa-Banga690 teaches "with the computer equipment, directing the television advertisement to the set-top box in response to instructions received from the computer system," as required by claim 36.

382. Accordingly, as shown above Baig-Costa-Banga690 teaches the additional limitations included in dependent claim 36, and renders claim 36 obvious to a POSA.

37. Dependent Claim 37: "The method of claim 26 wherein the step of delivering user profile information comprises delivering the first user online access IP address."

383. Claim 37 of the '260 Patent depends from claim 26 and further requires "wherein the step of delivering user profile information comprises delivering the first user online access IP address." Ex. 1001, claim 37. As discussed above, claim

26, from which claim 37 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

384. Claim 37 further requires that this step includes, "delivering the first user online access IP address" as part of delivering user profile information. Ex. 1001, claim 37. As discussed above for claims 1 and 26, Baig-Costa-Zwicky and Baig-Costa-Banga690 teaches the delivery of user profile information to a computer system, including the first user online IP access address. See Sections XII.A.1, XII.A.3, above; Ex. 1007, ¶¶ [0052], [0093].

385. Therefore, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "wherein the step of delivering user profile information comprises delivering the first user online access IP address," as required by claim 37.

386. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 37, and render claim 37 obvious to a POSA.

38. Dependent Claim 40: "The method of claim 39 wherein (i) the step of delivering electronic user profile information derived from the online activity comprises, with the computer equipment, delivering the first user online access IP address; and (ii) the selection of a television advertisement is based on user profile information that is not delivered to the computer system."

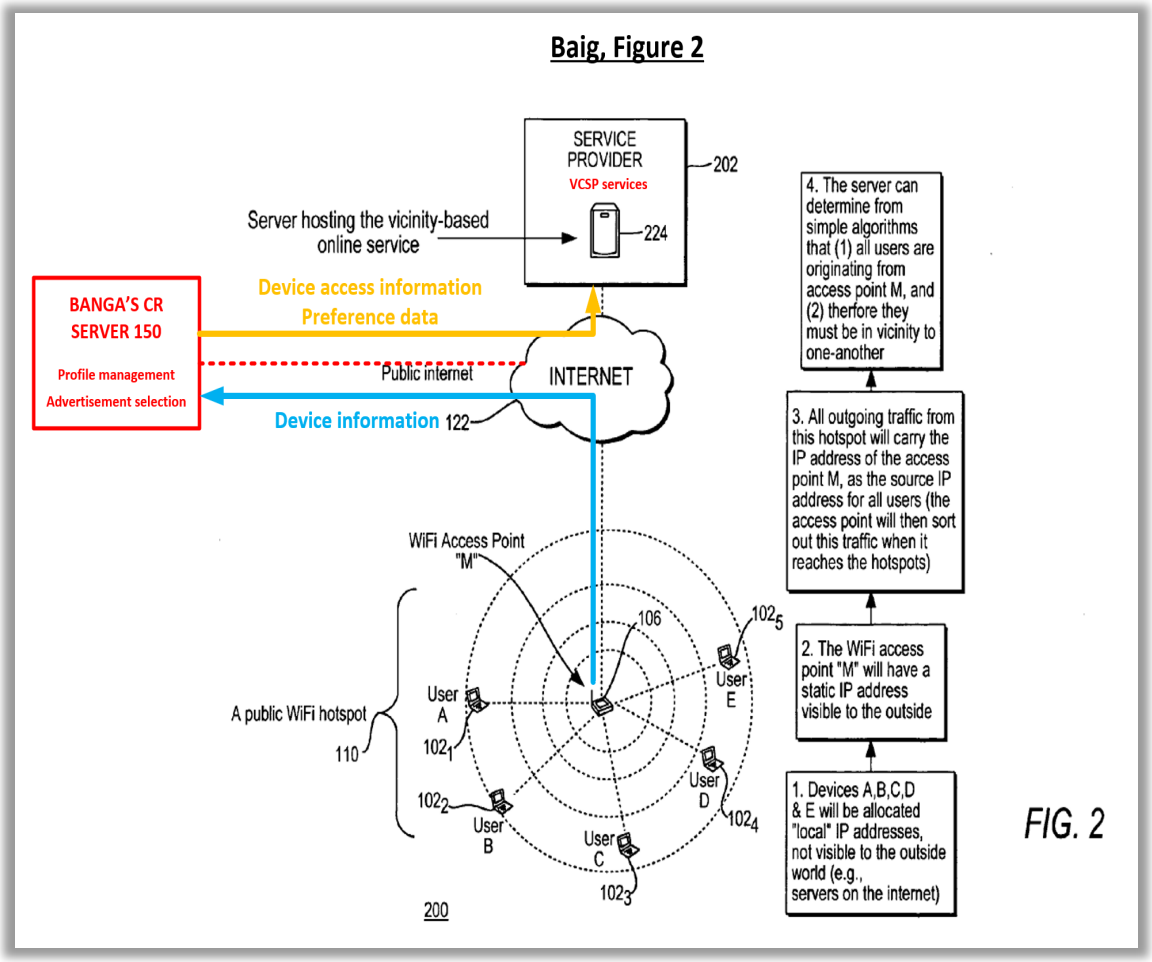
387. Claim 40 of the '260 Patent depends from claim 38 and further requires "wherein (i) the step of delivering electronic user profile information derived from

the online activity comprises, with the computer equipment, delivering the first user online access IP address; and (ii) the selection of a television advertisement is based on user profile information that is not delivered to the computer system." Ex. 1001, claim 40. As discussed above, claim 38, from which claim 40 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. Section XII.A.4.

388. As discussed for claim element [26C], Baig describes "delivered user profile information of a first user of the multitude of users" and that this user profile information "includes identification of the first online IP address." See Section XII.A.4, above. Furthermore, as explained for claims 26, 35, and 38, in Baig-Costa-Banga690, Banga690's CR server teaches the claimed "computer equipment" configured to perform a registration process, determine user profile information, and select advertisements based on user profile information. Sections XII.A.3-4, and XII.A.35. As also explained, Banga690 teaches using a variety of profile information to select advertisements, including information determined independently by the CR server 150 such as weather information. Ex. 1014, ¶¶ [0044], [0058]; Sections XII.A.3-4. Although this type of profile information may be abstracted out to determine user preferences of a user or group of users – which may be provided to an advertisement server or content provider – Banga690 does not teach transmitting that profile information (i.e., the self-determined weather/climate information) outside of the CR server 150 (claimed "computer

equipment"). Ex. 1014, ¶¶ [0057]-[0060]; Section XII.A.35. For example, Banga690 teaches that the CR server "check[s] the weather of the city and state from resources available on the Internet to include those users in hot climates and temperatures to be included within the user profile" (e.g., "information that is not delivered to the computer system"). Ex. 1014, ¶ [0058]. That is, the computer system accesses this weather information via one or more Internet sources, rather than having such information delivered to the computer system. Accordingly, because this user profile information includes information that is not delivered to the "computer system," Baig-Costa-Banga690 also teaches claim 40.

389. The annotated version of Baig's Figure 2 below illustrates the relationship between the claimed "computer equipment" (Baig-Costa-Banga690's CR server) and the "computer system" (Baig's content server(s)) described above. As shown below, Banga690's CR server teaches the '260 Patent's "computer equipment" (**red**). The computer equipment in the combined Baig-Costa-Banga690 systems receives information (e.g., online activity information for devices at the hotpsot). Some of this information is provided to Baig's VCSP content server(s) (claimed "computer system,") as profile information. However, some of the information is used to select advertisements, but is not transmitted to the computer system. For example, Banga690's CR server does not transmit weather information (claimed "information that is not delivered to the computer system").



Ex. 1007, Fig. 2 (annotated with Banga690's CR Server 150)

390. It would have been obvious that at least some of the user profile information determined by CR server 150, such as weather information, would not be transmitted to the VCSP content server 224 (claimed "computer system"), but still used to determine a targeted advertisement because both Baig and Banga690 provide explicit teachings of preserving user anonymity. Ex. 1007, ¶¶ [0068], [0098], Fig. 5 (element 512); Ex. 1014, ¶¶ [0007]-[0008]. For example, Baig describes how users may set their user name to "any name the user desires to either

identify the user or provide anonymity." Ex. 1007, ¶ [0068]. Baig similarly describes that although user information may be shared with advertisers, it would be done on an "anonymous basis." Ex. 1007, ¶ [0098]. Likewise, Banga690 discusses maintaining user relationships "without tracking cookies," which may, for example, include personally identifiable information and/or other user identifiers. Ex. 1014, ¶¶ [0007]-[0008], [0059].

391. A POSA would have appreciated that providing less profile information would be beneficial to achieving that goal. Accordingly, in Baig-Costa-Banga690, a POSA would have found it obvious for the CR server 150 to have distributed less or abstracted out user profile information (e.g., information not specifically required by VCSP server 224) in order to maximize privacy. In one example, while CR server 150 may provide network access information within delivered user profile information as discussed for claims 1 and 26 to the VCSP server 224, CR server 150 may abstract out other information such as weather information into user preference information. Sections XII.A.1, XII.A.3. For example, such information might not be specifically required by VCSP server 224. *Id*. Abstracting such unnecessary information would have been an obvious step to facilitate Baig and Banga690's goals of providing enhanced privacy. Sections XII.A.1, XII.A.3; Ex. 1007, ¶¶ [0068], [0098]; Ex. 1014, ¶¶ [0007]-[0008], [0057]-[0060]. Rather than providing

the specific weather information, CR server 150 may instead transmit the user preference information. *Id.*

392. Banga690 thus describes a known technique for abstracting profile information providing a known benefit of maximizing privacy. It is therefore my opinion that this use of Banga690's techniques in the Baig-Costa-Banga690 combination would have been obvious to a POSA as the mere use of a known technique (profile information abstraction as taught by Banga690, as described above) to improve similar systems in the same way (improve user anonymity, as I described above). Ex. 1014, ¶¶ [0007]-[0008], [0057]-[0060]. See Section IV, above (referring to obviousness rationale (C)).

393. Therefore, it is my opinion that Baig-Costa-Banga690 teaches "wherein (i) the step of delivering electronic user profile information derived from the online activity comprises, with the computer equipment, delivering the first user online access IP address; and (ii) the selection of a television advertisement is based on user profile information that is not delivered to the computer system," as required by claim 40.

394. Accordingly, as shown above, Baig-Costa-Banga690 teaches the additional limitations included in dependent claim 40, and renders claim 40 obvious to a POSA.

39. Dependent Claim 44: "The method of claim 1 wherein the first online access IP address and the common IP address are the same."

395. Claim 44 of the '260 Patent depends from claim 1 and further requires "wherein the first online access IP address and the common IP address are the same." Ex. 1001, claim 44. As discussed above, claim 1, from which claim 44 depends, is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

396. As I discussed above for claim element [1A], both Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the use of a common IP address and a first online access IP address. See Section XII.A.1.b, above. Claim 44 further requires, "the first online access IP address and the common IP address are the same." Ex. 1001, claim 44. Baig discloses that "a single, unique IP address (belonging to the access point) will represent the entire group of [devices]." Ex. 1007, ¶¶ [0047], [0038]-[0039], [0044]-[0046], [0050]-[0052], [0056]-[0058], [0064]. Thus, Baig teaches that the first online access IP address would be same as the common IP address because all of Baig's devices (including Costa's set-top box) at a given hotspot access the internet through the same access point, and so all of these devices have the same common IP address.

397. Therefore, it is my opinion that Baig-Costa (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches "wherein the first online access IP address and the common IP address are the same" as required by claim 44.

398. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 44, and render claim 44 obvious to a POSA.

40. Dependent Claims 62, 106, and 128

399. Except fortheir dependencies, claims 62, 106, and 128 are identical to claim 44. Ex. 1001, claims 62, 106, and 128. Therefore, it is my opinion that a POSA would have found claims 62, 106, and 128 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 44. See Section XII.A.39, above.

41. Dependent Claim 45: "The method of claim 1 wherein the first online access IP address and the common IP address differ."

400. Claim 45 of the '260 Patent depends from claim 1 and further requires "wherein the first online access IP address and the common IP address differ." Ex. 1001, claim 45. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

401. As discussed for claim element [1A], both Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the use of a common IP address and a first online access IP address. See Section XII.A.1.b, above; Ex. 1007, ¶¶ [0038], [0044], [0050], [0052], [0074], [0076], Figs. 2, 6. Claim 45 further requires, "the first online access

IP address and the common IP address differ." Ex. 1001, claim 45. Banga690 teaches this limitation.

402. As I discussed above for claim elements [1A] and [1B], Banga690 discloses a CR server that generates and manages user profile information. See Sections XII.A.1.b-c, above; Ex. 1014, ¶¶ [0023]-[0024], [0029], [0034]-[0046], [0053]-[0060], Figs. 3-4. Banga690's CR server also discloses that it records every time a user interface device seeks network access, including from different access points, and uses that information to generate further user profile information. Ex. 1014, ¶¶ [0005]-[0009], [0029], [0034], [0037]-[0039], [0056]-[0058]; see also Section XII.A.19, above. This allows Banga690's system the ability to track user interface devices as they move between different hotspots. For example, Banga690 describes that "a user may access the communication network 130 from two different access points 210 several times a week" and "[e]very time the user seeks network access, the connecting access point 210 sends the user's network access device's device identifier and access information to the CR server 150." Ex. 1014, ¶ [0038].

403. As discussed for [1B], in Baig-Costa-Banga690, when the online user interface device connects to the hotspot also hosting a set-top box, the VCSP system receives user profile information derived from online activity (e.g., network access) of that user interface device (which is used to target advertisements to other devices (e.g., the set-top box) at that hotspot). Section XII.A.1.c, above; Ex. 1007, ¶¶ [0058]-

[0059], [0061], [0093]-[0095]. Banga690 teaches that such online activity includes information about the device's prior network activity through other access points (e.g., other hotspots) having different IP addresses. Ex. 1014, ¶¶ [0034]-[0046], [0053]-[0060], Figs. 3-4. For example, Banga690 describes that "a user may access the communication network 130 from two different access points 210 several times a week" and that "[e]very time the user seeks network access, the connecting access point 210 sends the user's network access device's device identifier and access information to the CR server 150." *Id*. This access information may include, for example, "the number of times the communication network 130 has been accessed, the access point 210 used, date of access, time of access, location of the access point 210, and associated goods and services of the access point." *Id*.

404. Accordingly, Baig-Costa-Banga690 teaches deriving profile information from prior online activity associated with an IP address of a previous access point (i.e., the claimed "first online access IP address of the first online user interface device"), which is different from the common IP address of the hotspot to which the device has now joined.

405. For example, in the combined system of Baig-Costa-Banga690, a user may first connect to a network at a first time and a first location (e.g., a first access point/hotspot, having a first IP address, of a first coffee shop on a Saturday morning). Section XII.A.1.c, above; Ex. 1007, ¶¶ [0058]-[0059], [0061], [0093]-[0095]; Ex.

1014, ¶¶ [0034]-[0046], [0053]-[0060], Figs. 3-4. Online activity associated with this session may be obtained by the CR server 150 and used to derive profile information. *Id*. Similarly, the user may then later connect to the network at a second time at a second location (e.g., a second access point/hotspot, having a second IP address (the common IP address), of a second coffee shop on a subsequent Sunday morning). *Id*. Online activity associated with this second session may also be obtained by the CR server 150 and used to derive profile information. *Id*. Accordingly, in the Baig-Costa-Banga690 system, profile information may be derived based on access information associated with multiple different IP addresses, such as an IP address of a previous access point (the claimed first online access IP address) and an IP address of the hotspot to which the device is currently connected (e.g., the common IP address). *Id*.

406. It is my opinion that a POSA would recognize that it would be obvious and beneficial to modify Baig's targeted advertisement system to include tracking a user's online activity across multiple network access points in order to generate a more complete and/or accurate collection of profile information. For example, an individual may frequently visit Italian restaurants prior to joining the current hotspot (e.g., a coffee shop). This information may be gleaned from an individual's device accessing networks from those restaurants, and subsequently used to account for Italian cuisine interests in selecting targeted advertisements for the current coffee

shop restaurant hotspot. In short, a POSA would have been motivated to include Banga690's online activity information in Baig so that advertisements could be better targeted to individuals at Baig's VCSP hotspots. A POSA would have additionally been motivated to combine Banga690's server with Baig's VCSP server for the reasons discussed in the introduction to Section XII.A, above.

407. Therefore, it is my opinion that Baig-Costa-Banga690 teaches "wherein the first online access IP address and the common IP address differ" as required by claim 45.

408. Accordingly, as shown above, Baig-Costa-Banga690 teaches the additional limitations included in dependent claim 45, and renders claim 45 obvious to a POSA.

42. Dependent Claims 63, 107, and 129

409. Except fortheir dependencies, claims 63, 107, and 129 are identical to claim 45. Ex. 1001, claims 63, 107, and 129. Therefore, it is my opinion that a POSA would have found claims 63, 107, and 129 obvious in view of Baig-Costa-Banga690 for the same reasons as claim 45. See Section XII.A.41, above.

43. Dependent Claim 46: "The method of claim 45 wherein the first online access IP address and the set-top box IP address are associated based on online access by the first user's online user interface device via a second online access IP address."

410. Claim 46 of the '260 Patent depends from claim 1 and further requires "wherein the first online access IP address and the set-top box IP address are associated based on online access by the first user's online user interface device via a second online access IP address." Ex. 1001, claim 46. As discussed above, claim 45 is taught by Baig-Costa-Banga690.

411. As I discussed above for claim element [1A], Baig-Costa-Banga690 teaches electronically associating an online access IP address of the user and a set-top box IP address based on a common IP address. See Section XII.A.1.b, above; Ex. 1007, ¶¶ [0036]-[0038], [0043], [0052]-[0061], [0121]-[0122], Fig. 3. And as I discussed for claim 45, Baig-Costa-Banga690 also teaches "the first online access IP address and the common IP address differ." See Section XII.A.41, above. For example, these IP addresses may each correspond to a unique access point used to access a network (e.g., different access points used at different times, on different days, or the like), as is discussed for claim 45. *Id*. As noted above, claim 46 further requires "the first online access IP address and the set-top box IP address are associated based on online access by the first user's online user interface device via a second online access IP address." Ex. 1001, claim 46. These additional

requirements are taught by Baig-Costa-Banga690 for similar reasons to those I discussed above in claim 45. See Section XII.A.41, above.

412. As discussed for claim 45, in Baig-Costa-Banga690, device access information of a given user interface device, including at least one prior IP used by that user interface device to access the internet ("first online access IP address"), is received by the VCSP server of a hotspot. Section XII.A.41, above; Ex. 1014, Figs. 2-3, ¶¶ [0013], [0023]-[0029], [0038]-[0048], [0059]. It is my opinion that a POSA would find it obvious to include associating online activity information (such as prior IP addresses) of these devices in the electronic association of devices at a hotspot. See Section XII.A.1.b, above. For example, Baig's content server would receive this IP address information and associate it with device information of another device with a corresponding common IP address. And because Banga690 teaches device information as including prior IP addresses (e.g., from previous network access), the association of devices in Baig-Costa-Banga690 may further include associating prior IP addresses used by one or more of the devices. Ex. 1007, ¶¶ [0046]-[0047], [0056]-[0060]. Performing this association would provide a more complete and accurate collection of profile information for targeting advertisements, as I explained above for claim 45 (e.g., Section XII.A.41, above; Ex. 1007, ¶¶ [0038], [0052]-[0061], [0099]-[0101], [0121]-[0122], claim 13; Ex. 1014, ¶¶ [0023]-[0029]). Furthermore, as I explained above with regard to claim element [1B], the

device's access from the hotspot (i.e., the claimed "based on online access by the first user's online user interface device via a second online access IP address") would be used to perform the electronic association. *Id*.

413. For example, as described above for claim 45, in the combined system of Baig-Costa-Banga690 a user may access the Internet from a first hotspot (e.g., via a first IP address) in a first coffee shop and subsequently from a second hotspot (e.g., via a second IP address) of a second coffee shop. Access information from these two sessions (including the first IP address and the second IP address) may be sent to the CR server 150, and used to derive user profile information (e.g., which may, e.g., correspond to common user profile of the user). By electronically associating both the first and second IP addresses with this particular user's profile, the CR server 150 may determine, for example, that the user enjoys coffee, is a resident of a city in which the coffee shops are located, and/or make other inferences that may assist with the selection of targeted advertisements. Ex. 1014, ¶¶ [0038]-[0040]. Similarly, by associating both the first and second IP addresses with this particular user's profile, the CR server 150 may store other access information associated with these the first and second IP addresses within the profile (e.g., access information corresponding to sessions affiliated with both IP addresses). As described above, doing so would provide a more complete and accurate collection of profile information for selecting and providing targeting advertisements. Section XII.A.41;

Ex. 1007, ¶¶ [0038], [0052]-[0061], [0099]-[0101], [0121]-[0122], claim 13; Ex. 1014, ¶¶ [0023]-[0029].

414. Accordingly, just as the system of Baig-Costa-Banga690 teaches "the first online access IP address" and "the common IP address" of claim 45, the system of Baig-Costa-Banga690 teaches "the second online access IP address," of claim 46. Simply put, the common IP address of the hotspot teaches both the claimed "common IP address," as recited in claim 45 and the claimed "second online access IP address," in claim 46, as there is no requirement that these IP addresses be different from each other. Thus, by teaching online access via the common IP address of the hotspot, the system of Baig-Costa-Banga690 teaches online access via the "second online access IP address," as recited in claim 46.

415. Therefore, it is my opinion that Baig-Costa-Banga690 teaches "wherein the first online access IP address and the set-top box IP address are associated based on online access by the first user's online user interface device via a second online access IP address" as required by claim 46.

416. Accordingly, as shown above, Baig-Costa-Banga690 teach the additional limitations included in dependent claim 46, and renders claim 46 obvious to a POSA.

44. Dependent Claims 64, 108, and 130

417. Except fortheir dependencies and the presence of the modifier "first" before "user's online user interface device," (claim 108) or the change from "first online access IP address/set-top box IP address" to "online user interface device identifier/set-top box identifier," (claims 64, 130) claims 64, 108, and 130 are identical to claim 46. See Ex. 1001, claims 64, 108, and 130. It is my opinion that my analysis for claim 46 is applicable to claims 64, 108, and 130. Therefore, it is my opinion that a POSA would have found claims 64, 108, and 130 obvious in view of Baig-Costa-Banga690 for the same reasons as claim 46. See Section XII.A.43, above.

45. Dependent Claim 47: "The method of claim 46 wherein the second online access IP address and the common IP address are the same."

418. Claim 47 of the '260 Patent depends from claims 1 and 46 and further requires "wherein the second online access IP address and the common IP address are the same." Ex. 1001, claim 47. As discussed above, claim 46 is taught by Baig-Costa-Banga690.

419. As I discussed above for claims 45 and 46, Baig in view of Costa in further view of Banga690 teaches a first online access IP address different from the common IP address, and the association between the first online access IP address and the set-top box IP address based on a second online access IP address. See

Sections XII.A.41, XII.A.43, above. Claim 47 further requires, "the second online access IP address and the common IP address are the same." Ex. 1001, claim 47. As discussed in claim 45 and further in claim 46, the second online access IP address would be the common IP address of Baig's VCSP server. See Sections XII.A.1.b, XII.A.41, XII.A.43, above; Ex. 1007, ¶¶ [0038], [0044], [0050]-[0052], [0074]-[0076], Figs. 2, 6.

420. Therefore, it is my opinion that Baig-Costa-Banga690 teaches "wherein the second online access IP address and the common IP address are the same" as required by claim 47.

421. Accordingly, as shown above, Baig-Costa-Banga690 teaches the additional limitations included in dependent claim 47, and renders claim 47 obvious to a POSA.

46. Dependent Claims 65, 109, and 131

422. Except fortheir dependencies, claims 65, 109, and 131 are identical to claim 47. Ex. 1001, claims 65, 109, and 131. Therefore, it is my opinion that a POSA would have found claims 65, 109, and 131 to be obvious in view of Baig-Costa-Banga690 for the same reasons as claim 47. See Section XII.A.45, above.

47. Dependent Claim 48: "The method of claim 45 wherein the first online access IP address and the set-top box IP address are associated based on a correlation between the common IP address and an online user interface device identifier that indicates the user's online user interface device."

423. Claim 48 of the '260 Patent depends from claim 1 and further requires "wherein the first online access IP address and the set-top box IP address are associated based on a correlation between the common IP address and an online user interface device identifier that indicates the user's online user interface device." Ex. 1001, claim 48. As discussed above, claim 45, from which claim 48 depends, is taught by Baig-Costa-Banga690.

424. As I discussed above for claim 46, Baig-Costa-Banga690 teaches the first online access IP address and the set-top box IP address being associated based on online access by the first individual's online user interface device via a second online access IP address. See Sections XII.A.1.b, XII.A.43, above; Ex. 1007, ¶¶ [0036]-[0038], [0043], [0052]-[0061], [0121]-[0122], Fig. 3. Baig teaches user profile information such as age, gender, and/or other information. Banga690 describes user profile information that tracks a device identifier and current/past IP addresses, among other information. Ex. 1014, ¶¶ [0037]-[0039], [0045]-[0047]. It would have been obvious to and a POSA would have been motivated to modify Baig's user profile information that tracks user activity at various hot spot access points to include Banga690's device identifier record in order to track activity using

the device identifier over different access points as well as information relating to which access points that a particular device has accessed because doing so would have resulted in more thorough user profile information. Ex. 1007, ¶¶ [0089], [0095], [0104], [0124]; Ex. 1014, Figs. 2-3, ¶¶ [0005], [0013], [0023]-[0029], [0039]-[0048], [0059]. For a given user device, this user profile information includes a device identifier ("an online user interface device identifier that indicates the user's online user interface device"). *Id*. The user profile for the given device further includes the IP addresses of various access points accessed by that user device. *Id*. For example, such access points would include Banga690's previous hotspot ("the first online access IP address") and Baig's current hotspot ("set-top box IP address"/"the common IP address"). *Id*. Thus, by including the IP addresses of both access points in the user profile, the user profile information associates "the first online access IP address and the set-top box IP address." *Id*. A POSA would recognize that a user profile that includes such information teaches "a correlation between the common IP address and an online user interface device identifier that indicates the user's online user interface device." *Id*.

425. Therefore, it is my opinion that Baig-Costa-Banga690 teaches "wherein the first online access IP address and the set-top box IP address are associated based on a correlation between the common IP address and an online user interface device

identifier that indicates the user's online user interface device" as required by claim 48.

426. Accordingly, as shown above, Baig-Costa-Banga690 teaches the additional limitations included in dependent claim 48, and renders claim 48 obvious to a POSA.

48. Dependent Claim 110: "The method of claim 107 wherein the first online access IP address and the set-top box IP address are associated based on a correlation between the common IP address and an online user interface device identifier that indicates the user's online user interface device."

427. Except for their dependencies, claims 48 and 110 are identical. See Ex. 1001, claim 110. Therefore, it is my opinion that a POSA would have found claim 110 obvious in view of Baig-Costa-Banga690 for the same reasons as claim 48. See Section XII.A.47, above.

49. Dependent Claim 52: "The method of claim 1 wherein the set-top box is further indicated by a set-top box identifier that includes a device MAC address or a portion thereof."

428. Claim 52 of the '260 Patent depends from claim 1 and further requires "wherein the set-top box is further indicated by a set-top box identifier that includes a device MAC address or a portion thereof." Ex. 1001, claim 52. As discussed above, claim 1 is taught by Baig in view of Costa and Banga690. See Section XII.A.1, above.

429. As I have previously explained above at Sections XII.A.1.b-c with respect to claim 1, Banga690 describes that devices may be identified using a MAC address, which does not change between access points. Ex. 1014, ¶¶ [0024], [0032], [0054]. In the Baig-Costa-Banga690 combination, one such device would be Costa's set-top box. Ex. 1007, Abstract, ¶¶ [0006], [0039], [0101]; Ex. 1011, ¶¶ [0007], [0035]-[0036], [0042], Fig. 1. Therefore, in the combined system and as I discussed in further detail above at Sections XII.A.1.b-c with respect to claim 1, a set-top box would be identified by a MAC address (or, a portion thereof). For example, Baig-Costa-Banga690's system would include the MAC address as a device identifier in the device record (as described in Banga690) for the set-top box in order to properly route messages, targeted advertisements, and other communications specifically directed to the set-top box. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059].

430. It is therefore my opinion that the combination of Baig-Costa-Banga690 teaches "wherein the set-top box is further indicated by a set-top box identifier that includes a device MAC address or a portion thereof," as required by claim 52. Accordingly, as shown above, Baig-Costa-Banga690 teaches the additional limitations included in dependent claim 52, and renders claim 52 obvious to a POSA.

50. Dependent Claims 68, 114, and 134

431. Except fortheir dependencies, claims 52, 68, 114, and 134 are identical (claim 114) or nearly identical but for inconsequential wording changes (claims 68, 134). See Ex. 1001, claims 68, 114, and 134. Therefore, it is my opinion that a POSA would have found claims 68, 114, and 134 obvious in view of Baig-Costa-Banga690 for the same reasons as claim 52. See Section XII.A.49, above.

51. Dependent Claim 53: "The method of claim 1 wherein the set-top box is further indicated by a set-top box identifier that includes a username, a pseudonym, or a confirmation number."

432. Claim 53 of the '260 Patent depends from claim 1 and further requires "wherein the set-top box is further indicated by a set-top box identifier that includes a username, a pseudonym, or a confirmation number." Ex. 1001, claim 53. As discussed above, claim 1 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.1, above.

433. As I explained above with respect to element [1A] at Section XII.A.1.b, Baig describes that each device 102 at a hotspot is included in a list 606 of associated devices and individuals in the vicinity of the hotspot. Ex. 1007, ¶¶ [0038], [0052], [0074], [0076], Fig. 6. Baig also describes that the devices may be represented by a username in the list 606. Ex. 1007, ¶¶ [0068], [0070], [0078], Fig. 6. For example, as shown in Fig. 6, a username may be "Terminator," and/or other usernames or pseudonyms. As I have previously explained, it would have been obvious to

combine Baig with Costa such that one of the devices 102 at the hotspot would have been a set-top box. Therefore, it would have been obvious to a POSA that, as one of the devices 102 at Baig's hotspot, the set-top box would also have been indicated by a username. Ex. 1007, ¶¶ [0068], [0070], [0078], Fig. 6. For example, the set-top box may have been identified by a username that allows the set-top box to be identified in the list 606 and distinguished from other devices at the hotspot.

434. As previously discussed with respect to Banga690 at Section XII.A.1, Banga690's CR server tracks device records which include device identifiers. Banga690's CR server also includes an authentication module to verify a user based on "username, password, or other user identifier." Ex. 1014, ¶ [0051]. Therefore, in Baig-Costa-Banga690 the device record would also include a device identifier for the set-top box in the form of a username (which may be the same username displayed by Baig's list 606).

435. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 53, and render claim 53 obvious to a POSA.

52. Dependent Claims 69, 115, and 135

436. Except fortheir dependencies, claims 53, 69, 115, and 135 are identical (claim 115) or nearly identical but for inconsequential wording changes (claims 69, 135). See Ex. 1001, claims 69, 115, and 135. Claims 69 and 135 depend from claims

61 and 38, respectively, which are taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Sections XII.A.2, XII.A.4, above. Claim 115 depends from claim 110, which is taught by Baig-Costa-Banga690. See Section XII.A.48, above. Therefore, it is my opinion that a POSA would have found claims 69 and 135 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690, and claim 115 obvious in view of Baig-Costa-Banga690, for the same reasons as claim 53. See Section XII.A.51, above.

53. Dependent Claim 54: "The method of claim 1 wherein the common IP address is determined by the computer system by matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs."

437. Claim 54 of the '260 Patent depends from claim 1 and further requires "wherein the common IP address is determined by the computer system by matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs." Ex. 1001, claim 54. As discussed above, claim 1, from which claim 54 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

438. As discussed for claim element [1A], Baig in view of Zwicky in further view of Costa teaches "electronically associating an online access IP address of the user and a set-top box IP address of that user based on a common IP address." See Section XII.A.1.b, above. Ex. 1007, ¶¶ [0056] ("At step 306, the server 224

identifies all the users who have logged in from a common hotspot as having the same access point IP address."), [0040], [0052], Fig. 3 (Step 306). As further discussed above for claim element [1A], Baig in view of Costa and Zwicky teaches that the VCSP server associates all devices, including an online user interface device and a set-top box, at a specific hotspot based on those devices using a common public IP address (*i.e.*, the claimed determining the common IP address by matching different devices using the same public IP address). Ex. 1007, ¶¶ [0046]-[0051]; Ex. 1012, pp. 114-116; see also Section XII.A.1.b, above.

439. As I also discussed above in Element [1A], Baig-Costa-Zwicky and Baig-Costa-Banga690 teach that the set-top box connected to Baig's hotspot would also be identified by the VCSP server by the common IP address and a unique port number. Ex. 1012, pp. 114-116; see also Section XII.A.1.b, above. As discussed above for claim 44, Baig discloses a common IP address that is the same as the first online access IP address. Section XII.A.39. For example, a customer may decide to join the hotspot community at a coffee shop (network access being an example of "online activity" as explained for claim 1) where a set-top box is already connected. Baig further teaches that each device can connect to the hotspot independently of other devices connected to that hotspot at any given time, as is illustrated by the statistical information tracked by the VCSP (e.g., showing that the number of users logged on varies at particular times of the day). Ex. 1007, ¶ [0114], FIG. 14. A

POSA would thus understand that the set-top box (one device) would be connected to the same hotspot and thus be using the common IP address of the hotspot both before and after the online user interface device (another device) connects to the hotspot for online access. This scenario describes "a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs."

440. Therefore, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "wherein the common IP address is determined by the computer system by matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs" as required by claim 54.

441. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 54, and render claim 54 obvious to a POSA.

54. Dependent Claims 75, 116, and 141

442. Except for their dependencies and inconsequential wording changes, claims 75, 116, and 141 are nearly identical to claim 54. See Ex. 1001, claims 75, 116, and 141. Therefore, it is my opinion that a POSA would have found claims 75, 116, and 141 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 54. See Section XII.A.53, above.

55. Dependent Claim 55: "The method of claim 1 wherein the first online access IP address and the set-top box IP address are associated before the online activity occurs."

443. Claim 55 of the '260 Patent depends from claim 1 and further requires "wherein the first online access IP address and the set-top box IP address are associated before the online activity occurs." Ex. 1001, claim 55. As discussed above, claim 1, from which claim 55 depends, is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

444. As I explained above for claim element [1B], Baig describes using online activity of devices at a hotspot to determine what advertisements to serve. Section XII.A.1.c, above; Ex. 1007, ¶¶ [0038], [0052], [0066], [0074], [0081], [0093], [0099], [0114]-[0120], Figs. 14-19. As a particular example, Baig describes that "time spent by the average user in each of the VCSP's services," (e.g., a chat room, buy/sell service, barter service, or the like) is used to provide advertisements. Ex. 1007, ¶ [0119]. Baig further describes identifying, based on the online activity, user demographics and time of accessing a given website, which is further used to determine advertisements. Ex. 1007, ¶ [0120]. Baig describes the user device being associated with other devices at a hotspot via the common IP address (claimed "first online access IP address and "set-top box IP address") upon the individual registering online at that hotspot and before the individual browses online content at the hotspot ("online activity"). Ex. 1007, ¶¶ [0066], [0076], [0081], [0093]-[0094],

[0096]-[0101], [0124]. For example, in Baig, "the VCSP receives user information during user registration" and then, once this user information has been received, "the VCSP 202 aggregates all user information." Ex. 1007, ¶¶ [0096]-[0097]. By aggregating this information, the various user devices at a hotspot are associated with each other. Ex. 1007, ¶¶ [0066], [0076], [0081], [0093]-[0094], [0096]-[0101], [0124]

445. Therefore, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "wherein the first online access IP address and the set-top box IP address are associated before the online activity occurs" as required by claim 55.

446. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 55, and render claim 55 obvious to a POSA.

56. Dependent Claims 76, 117, and 142

447. Except for their dependencies, claims 55, 76, 117, and 142 are either identical (claim 117) or nearly identical but for the change from "first online access IP address/set-top box IP address" to "online user interface device identifier/set-top box identifier" (claims 76, 142). See Ex. 1001, claims 76, 117, and 142. I addressed the obviousness of identifiers with respect to independent claims 38 and 61. Sections XII.A.2, 4. Therefore, it is my opinion that a POSA would have found claims 76,

117, and 142 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for substantially the same reasons as claim 55. See Section XII.A.55, above.

57. Dependent Claim 56: "The method of claim 1 wherein the first online access IP address and the set-top box IP address are not associated until after the online activity occurs."

448. Claim 56 of the '260 Patent depends from claim 1 and further requires "wherein the first online access IP address and the set-top box IP address are not associated until after the online activity occurs." Ex. 1001, claim 56. As discussed above, claim 1, from which claim 56 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

449. As one form of "online activity," Baig describes an individual providing various demographic parameters prior to joining the online community as part of a registration process at a hotspot. Ex. 1007, ¶¶ [0093]-[0096]. It is my opinion that performing, using the common IP address, the registration process at the first online user interface device through the hotspot access point teaches the "online activity" recited in claim 56. Section XII.A.1.c, above; Ex. 1007, ¶¶ [0066], [0093], [0099], [0114]-[0120], Figs. 14-19. For example, once the individual joins the hotspot online community and completes the registration process (the claimed "online activity"), an association is generated between the set-top box IP address and the first online access IP address. Ex. 1007, ¶¶ [0066], [0076], [0081], [0093]-[0094], [0096]-[0101], [0124]. Thus, Baig also describes scenarios in which the

registration process is not completed ("the first online access IP address and the set-top box IP address are not associated") until after the user demographic information has been entered ("the online activity occurs"). Ex. 1007, ¶¶ [0066], [0070]-[0076], [0081], [0093]-[0094], [0096]-[0101], [0124]. For example, Baig describes that "[i]f the user is a new user, i.e., not registered on the VCSP website, then the user can select (e.g., point and click on) the 'new user' link 412, which allows the user to enter registration information" and "all of the fields must be completed to register on the VCSP website." Ex. 1007, ¶¶ [0070]-[0071].

450. Therefore, it is my opinion that Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "wherein the first online access IP address and the set-top box IP address are not associated until after the online activity occurs" as required by claim 56. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 56, and render claim 56 obvious to a POSA.

58. Dependent Claims 77, 118, and 143

451. Except for their dependencies, claims 56, 77, 118, and 143 are identical (claim 118) or nearly identical but for the change from "first online access IP address/set-top box IP address" to "online user interface device identifier/set-top box identifier" (claims 77, 143). See Ex. 1001, claims 77, 118, and 143. I addressed the obviousness of identifiers with respect to independent claims 38 and 61. Sections

XII.A.2, 4. Therefore, it is my opinion that a POSA would have found claims 77, 118, and 143 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for substantially the same reasons as claim 56. See Section XII.A.57, above.

59. Dependent Claim 57: "The method of claim 1 further comprising, with the computer system, automatically deriving the user profile information from the online activity performed from the first online access IP address."

452. Claim 57 of the '260 Patent depends from claim 1 and further requires "with the computer system, automatically deriving the user profile information from the online activity performed from the first online access IP address." Ex. 1001, claim 57. As discussed above, claim 1 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.1, above.

453. The only difference between claim 57 and claim 1 is that claim 57 explicitly requires the user profile information be "automatically" derived from the online activity performed from the first online access IP address. Baig describes that information about individuals' interests, age, gender, and other user information is requested and stored automatically by the VCSP 202 as individuals register online with the VCSP website. Ex. 1007, ¶¶ [0059], [0096]. It would have been obvious to a POSA that this information ("user profile information") is automatically derived from each individual's device 102, which would have been associated with an IP address ("first online access IP address"), as the individual registers online with the website ("from online activity"). Further, Baig describes that the VCSP 202 is

programmed to track and generate online activity statistics, which would also constitute "user profile information" that is automatically derived. Ex. 1007, ¶ [0114], Fig. 14. A POSA also would have known that computer systems such as VCSP 202 "automatically" execute their programming.

454. Banga690 also teaches this feature. As I explained above at Section XII.A.1 with respect to claim 1, Banga690 receives device records and generates user profiles. Ex. 1014, Figs. 2-3, ¶¶ [0013], [0028], [0034], [0041]-[0048], [0059]. Specifically, Banga690 uses a "profile engine 310 [] configured to retrieve one or more device records and generate user profiles." Ex. 1014, ¶ [0046]. Banga690 further describes that its profile engine 310 is incorporated into the CR server 150 ("computer equipment") and is programmed to automatically generate the profile information "based at least in part on the device identifier and the access information within the device record." Ex. 1014, ¶¶ [0009], [0039]-[0040], [0047]. Therefore, it would have been obvious to a POSA that Banga690's profile engine "automatically derives" the information used to generate user profiles ("user profile information") based on the access information, which includes "any information associated with the devices at the access point" (claimed "from the online activity performed from the first online access IP address"). Ex. 1014, ¶¶ [0009], [0034], [0039]-[0040], [0047].

455. As I also previously explained in further detail in Section XII.A.1.b with respect to claim element [1A], it would have been obvious to a POSA to combine Baig with Banga690. As part of that combination, it would also have been obvious to use Banga690's technique of automatically deriving—via CR server 150—profile information from online activity performed from a user interface device to further Baig's goal of providing real-time advertising to individuals. Ex. 1007, ¶¶ [0105], [0058]-[0059], [0061], [0093]-[0095]. For example, a POSA would have been motivated to combine Banga690's techniques with Baig's system so that Baig's system would be able to provide accurate and up-to-date profile information for individuals at a particular hotspot to advertisers in real-time. Ex. 1007, Abstract, ¶¶ [0012], [0105]. This would have facilitated Baig's service of allowing advertisers to target individuals based on demographics and other user information. Ex. 1007, ¶¶ [0089], [0095], [0104], [0124].

456. The combination of Baig and Banga690 described above merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are Baig's system for providing targeted advertisements to devices at hotspots and Banga690's process for automatically deriving profile information for use by advertisers in providing targeted advertisements. Ex. 1007, ¶¶ [0058]-[0059], [0061], [0089], [0093]-[0095], [0104], [0124]; Ex. 1014, ¶¶ [0009], [0039]-[0040],

[0047]. These known elements would have been combined according to known methods, such as Banga690's method of programming a server. Ex. 1014, ¶¶ [0009], [0039]-[0040], [0047]. Finally, the combination yields predictable results. Specifically it yields Baig's advertising system being programmed to derive profile information using the techniques described in Banga690. A POSA would have had a reasonable likelihood of success in performing the combination because a POSA would have possessed the skills (e.g., basic server programming skills) to modify the programming in Baig's system so that user interests and preferences were automatically derived from the access information detected and tracked by Baig's system. Ex. 1007, ¶¶ [0059], [0096], [0114], Fig. 14.

457. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 57, and render claim 57 obvious to a POSA.

60. Dependent Claims 78, 119, and 144

458. Except for their dependencies, claims 57, 78, 119, and 144 are identical (claim 78) or nearly identical but for inconsequential wording changes (claims 119, 144). See Ex. 1001, claims 78, 119, and 144. Specifically, claim 119 recites "automatically deriving the user profile information from the online activity from the first online access IP address" as opposed to "automatically deriving the user profile information from the online activity performed from the first online access

IP address," but a POSA would have understood that online activity "from the first online access IP address" would be and/or includes online activity "performed from the first online access IP address." Claims 119 and 144 further recite performing their limitations "with the computer equipment" rather than "with the computer system," but as I described with respect to claim 26 at Section XII.A.3, Baig-Costa-Zwicky and Baig-Costa-Banga690 both teach computer equipment (Baig-Costa-Zwicky's computer components included in the VCSP 202 and Baig-Costa-Banga690's CR server 150 implemented in Baig's system, respectively) as well as a computer system (Baig's content servers). Therefore, both Baig-Costa-Zwicky and Baig-Costa-Banga690 teach "with the computer equipment," (Baig-Costa-Zwicky's computer components included in VCSP 202 and Baig-Costa-Banga690's CR server 150) "automatically deriving the user profile information." Thus, it is my opinion that a POSA would have found claims 78, 119, and 144 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 57. See Section XII.A.59, above.

61. Dependent Claim 58: "The method of claim 1 further comprising, with the computer system, automatically selecting the first television advertisement based on the user profile information."

459. Claim 58 of the '260 Patent depends from claim 1 and further requires "with the computer system, automatically selecting the first television advertisement

based on the user profile information." Ex. 1001, claim 58. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

460. As I discussed above for claim element [1B], Baig teaches automatically causing advertisements to be delivered based on user profile information. See Section XII.A.1.c, above; Ex. 1007, ¶¶ [0058]-[0061], [0093]-[0095], Fig. 5. Baig describes user profile information derived from online activity in the form of age, gender, occupation, interests, geographic location, or "other profile information." Ex. 1007, ¶¶ [0058]-[0061], [0093]-[0095], Fig. 5. Baig describes automatically selecting advertisements based on such user profile information. For example, Baig teaches using a vicinity-based community service provider (VCSP) to provide advertisements to individuals that are targeted based on their user profile information. Ex. 1007, ¶¶ [0058]-[0059], [0093]-[0095]. For example, when an individual joins a hotspot, targeted advertisements are sent to the individual from a wireless access provider accordingly (e.g., Starbucks advertising to the vicinity based community with coupons for coffee, or the like). Ex. 1007, ¶¶ [0099]-[0101]; see Section XII.A.1.c, above. It is my opinion that because the advertisements are selected and transmitted based on an individual connecting to the hotspot, such selection and transmission are automatically triggered.

461. Accordingly, it is my opinion that Baig (and thus Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches "automatically selecting the first television advertisement based on the user profile information," as required by claim 58.

462. Accordingly, as shown above, Baig (and thus the combination of Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches the additional limitations included in dependent claim 58, and renders claim 58 obvious to a POSA.

62. Dependent Claim 79: "The method of claim 61 further comprising automatically selecting the first television advertisement based on the user profile information."

463. Except for their dependencies and inconsequential wording changes, claims 58 and 79 are identical. See Ex. 1001, claim 79. Therefore, it is my opinion that a POSA would have found claim 79 obvious in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for substantially the same reasons as claim 58. See Section XII.A.61, above.

63. Dependent Claim 71: "The method of claim 61 wherein the online user interface device identifier includes the first online access IP address."

464. Claim 71 of the '260 Patent depends from claim 61 and further requires "wherein the online user interface device identifier includes the first online access IP address." Ex. 1001, claim 71. As discussed above, claim 61 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa, and Banga690. See Section XII.A.2, above.

465. As I previously explained with respect to claims 1 and 61 above at Sections XII.A.1.b-c and XII.A.2, respectively, Baig teaches electronically associating device identifiers at an access point. Ex. 1007, ¶¶ [0038]-[0039], [0051]-[0052], [0056]. The device identifiers include IP addresses as well as port numbers. See Sections XII.A.1.b-c and XII.A.2, above. As I have previously stated, for purposes of this Declaration, I have mapped Baig's public IP address of the access point at a VCSP hotspot to the common IP address, while the port number is a device-specific identifier. See Sections XII.A.1.b-c and XII.A.2, above; Ex. 1007, [0038]-[0039], [0051]-[0052], [0056]; Ex. 1012, pp. 114-16; Ex. 1013, ¶¶ [0004], [0011], [0039]. The Baig-Costa-Zwicky system uses NAT, and each device may be individually publicly identified using a port number in addition to the public shared IP address (i.e., the common IP address of Baig's hotspot). Ex. 1007, ¶¶ [0038]-[0039], [0051]-[0052], [0056]; Ex. 1012, pp. 114-16; Ex. 1013, ¶¶ [0004], [0011], [0039]. Further, as I discussed with respect to the limitations of claims 1 and 61, Baig uses online activity of devices connected through the common IP address at the access point to derive profile information for use in targeting particular users based on demographics. See Sections XII.A.2, XII.A.1.b-c, above; Ex. 1007, ¶¶ [0093], [0096]-[0101]. A POSA would have understood that when tracking online activity of devices through the common IP address, Baig uses the common IP address as a device identifier of the device being tracked (claimed "online user interface device").

466. Additionally, when Baig and Costa are combined with Banga690 in the manner I described above at the beginning of Section XII.A when explaining the combination, the combined Baig-Costa-Banga690 system incorporates Banga690's device records. See introduction to Section XII.A; see also Section XII.A.1. These device records store device identifiers including the IP address of the device, as well as device-specific identifiers such as a MAC address. Ex. 1014, Figs. 2-3, ¶¶ [0009]-[0014], [0023]-[0024], [0028]-[0029], [0034], [0037]-[0048], [0056], [0059], [0061]. A POSA would have understood that these device records, which in the combined system would store both the public IP address of Baig's access point as well as the MAC/IP address of that device, teach the claimed "online user interface device identifier" that "includes the first online access IP address."

467. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Cost-Banga690 teach the additional limitations included in dependent claim 71, and render claim 71 obvious to a POSA.

64. Dependent Claim 137: "The method of claim 38 wherein the online user interface device identifier includes the first online access IP address."

468. Except fortheir dependencies, claims 71 and 137 are identical. Ex. 1001, claim 137. As I explained above at Section XII.A.4, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach claim 38. Therefore, it is my opinion that claim 137

would have been obvious to a POSA in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 71. See Section XII.A.63, above.

65. Dependent Claim 72: "The method of claim 61 wherein the set-top box identifier includes the common IP address."

469. Claim 72 of the '260 Patent depends from claim 61 and further requires "wherein the set-top box identifier includes the common IP address." Ex. 1001, claim 72. As discussed above, claim 61 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa, and Banga690. See Section XII.A.2.

470. As I previously explained with respect to claims 1 and 61 above at Sections XII.A.1.b-c and XII.A.2, respectively, Baig teaches electronically associating device identifiers at an access point. Ex. 1007, ¶¶ [0038]-[0039], [0051]-[0052], [0056]. The device identifiers include IP addresses as well as port numbers. See Sections XII.A.1.b-c and XII.A.2, above. As I have previously explained, when a device connects to Baig's VCSP hotspot via an access point 106, it shares, with each other device connected to that same access point, the common public IP address of the access point 106. Ex. 1007, ¶¶ [0038]-[0039], [0051]-[0052], [0056]. It would have been obvious to a POSA to modify Baig in view of Costa such that one of the devices 102 at the access point is a set-top box as I previously explained for claim elements [1A], [1B], and claim 61. See Sections XII.A.1.b-c, XII.A.2.; Ex. 1011, ¶¶ [0007], [0035]-[0036], [0042], Fig. 1. Therefore, in the combined Baig-Costa

system, the device identifier of the set-top box at the access point 106 would include the common public IP address of the access point 106.

471. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 72, and render claim 72 obvious to a POSA.

66. Dependent Claim 138: "The method of claim 38 wherein the set-top box identifier includes the common IP address."

472. Except for their dependencies, claims 72 and 138 are identical. See Ex. 1001, claim 138. As I explained above at Section XII.A.4, claim 38 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. Therefore, it is my opinion that claim 138 would have been obvious to a POSA in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 72. See Section XII.A.65, above.

67. Dependent Claim 73: "The method of claim 61 wherein the set-top box identifier includes at least a portion of the common IP address."

473. Claim 73 of the '260 Patent depends from claim 61 and further requires "wherein the set-top box identifier includes at least a portion of the common IP address." Ex. 1001, claim 73. As discussed above, claim 61 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.2, above.

474. As I explained above at Section XII.A.65 with respect to claim 72, both the Baig-Costa-Zwicky system and the Baig-Costa-Banga690 system teach "wherein the set-top box identifier includes the common IP address." Therefore, a POSA would have understood that both of these systems also teach "wherein the set-top box identifier includes at least a portion of the common IP address."

475. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 73, and render claim 73 obvious to a POSA.

68. Dependent Claim 139: "The method of claim 38 wherein the set-top box identifier includes at least a portion of the common IP address."

476. Except for their dependencies, claims 73 and 139 are identical. See Ex. 1001, claim 139. As I discussed above at Section XII.A.4, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach claim 38. Therefore, it is my opinion that claim 139 would have been obvious to a POSA in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for substantially the same reasons as claim 73. See Section XII.A.67, above.

69. Dependent Claim 74: "The method of claim 61 wherein the set-top box identifier includes a set-top box IP address."

477. Claim 74 of the '260 Patent depends from claim 61 and further requires "wherein the set-top box identifier includes a set-top box IP address." Ex. 1001,

claim 74. As discussed above, claim 61 is taught by Baig in view of Costa and Zwicky and Baig in view of Costa, and Banga690. See Section XII.A.2, above.

478. As I have previously explained at Sections XII.A.1.b-c, XII.A.2, XII.A.65 and XII.A.67 for claims 1, 61, and 72-73, respectively, Baig teaches electronically associating device identifiers at an access port, where the device identifiers for each device include the IP address of the VCSP hotspot access point. Ex. 1007, ¶¶ [0038]-[0039], [0051]-[0052], [0056]. As I have also previously explained, it would have been obvious to a POSA to modify Baig in view of Costa such that one of the devices 102 at the access point is a set-top box as I explained above with respect to claims 1 and 61. See Section XII.A.1.b-c, above; Ex. 1011, ¶¶ [0007], [0035]-[0036], [0042], Fig. 1. A POSA would have understood that in the combined system (*i.e.,* Costa's set top box is included as a device 102 that is connected to Baig's access point), the set-top box's identifier would include the IP address of the VCSP hotspot access point, and that said IP address would necessarily be "a set-top box IP address."

479. Accordingly, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 74, and render claim 74 obvious to a POSA.

70. Dependent Claim 140: "The method of claim 38 wherein the set-top box identifier includes a set-top box IP address."

480. Except for their dependencies, claims 74 and 140 are identical. See Ex. 1001, claim 140. As I explained above at Section XII.A.4, claim 38 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. Therefore, it is my opinion that claim 140 would have been obvious to a POSA in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 74. See Section XIIA.69, above.

71. Dependent Claim 121: "The method of claim 34 wherein the revenue amount is received from an advertiser that has contracted to display a TV ad to persons who have characteristics contained in the user profile information."

481. Claim 121 of the '260 Patent depends from claim 34 and further requires "wherein the revenue amount is received from an advertiser that has contracted to display a TV ad to persons who have characteristics contained in the user profile information." Ex. 1001, claim 121. Claim 34 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.29, above.

482. As I have previously discussed with respect to claims 24, 34, 42, and 103, Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 disclose automatically providing targeted advertisements to users. See Sections XII.A.28 and XII.A.29, above; Ex. 1014, ¶¶ [0005], [0035], [0040], [0058], [0060];

Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2. Claim 121 adds the requirement that "the revenue amount is received from an advertiser that has contracted to display a TV ad to persons who have characteristics contained in the user profile information." Ex. 1001, claim 121. Baig describes that "multiple **advertisers** can bid against each other to have their advertisements displayed at a particular location and time of day, or **based on some other end-user profile**." Ex. 1007, ¶ [0102] (emphasis added); *see also* Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0103]-[0106], Fig. 21. A POSA would have understood Baig's multiple advertisers to include an advertiser "contracted to display a TV ad" because the advertisers bid to display their advertisements to the devices at Baig's wireless hotspot access point (which, as I previously described, would include Costa's set-top box). *Id*. A POSA would further have understood that, by using Baig's end-user profiles as the basis for the advertisements and then delivering advertisements to those corresponding users, Baig's advertisers are contracting to display the TV ads "to persons who have characteristics contained in the user profile information."

483. Accordingly, as shown above, Baig (and thus, Baig-Costa-Zwicky and Baig-Costa-Banga690) teaches the additional limitations included in dependent claim 121, and renders claim 121 obvious to a POSA.

72. Dependent Claim 122: "The method of claim 121 further comprising, with the computer equipment, automatically selecting the first television advertisement based on the user profile information."

484. Except for their dependencies, claims 31 and 122 are identical. See Ex. 1001, claim 31. Therefore, it is my opinion that claim 122 would have been obvious to a POSA in view of Baig-Costa-Zwicky and Baig-Costa-Banga690 for the same reasons as claim 31. See Section XII.A.32, above.

73. Dependent Claims 125 and 152

485. Except for their dependencies and the change from "first online access IP address" to "second online access IP address" (claim 125), from "first online access IP address" to "second user interface device identifier" (claim 152) or from "set-top box IP address" to "set-top box identifier" (claim 152), claims 125 and 152 are nearly identical to claim 2. As I described above with respect to claim 61, a POSA would have found "online access IP addresses" obvious for the same reasons as "online user interface device identifiers." See Section XII.A.2, above. As I explained with respect to claim 3, a POSA would have found "second online access IP addresses/second online user interface device identifiers" obvious for the same reasons as "first online access IP addresses/first online user interface device identifiers." See Section XII.A.7, above. Thus, it is my opinion that a POSA would have found claims 125 and 152 obvious in view of Baig-Costa-Zwicky and Baig-

Costa-Banga690 for the same reasons as claim 2 and 3. See Sections XII.A.5, XII.A.7, above.

74. Dependent Claim 146: "The method of claim 42 wherein the revenue amount is received from an advertiser that has contracted to display a TV ad to an audience of an Internet site."

486. Claim 146 of the '260 Patent depends from claim 42 and further requires "wherein the revenue amount is received from an advertiser that has contracted to display a TV ad to an audience of an Internet site." Ex. 1001, claim 146. As discussed above, claim 42 is taught by Baig in view of Costa and Zwicky and Baig in view of Costa, and Banga690. See Section XII.A.29, above.

487. As I have previously discussed with respect to claims 24, 34, 42, and 103, Baig in view of Costa and Zwicky and Baig in view of Costa, and Banga690 disclose automatically providing targeted advertisements to users. See Sections XII.A.28 and XII.A.29, above; Ex. 1014, ¶¶ [0005], [0035], [0040], [0058], [0060]; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2. Baig is clear that in its system, in order for users to access the VCSP server at the hotspot, users must log onto the website of the VCSP. Only after a user has logged on does the VCSP facilitate the vicinity-based associations I have previously described, and provide Internet access to other website destinations via the access point. Ex. 1007, ¶¶ [0007], [0040], [0053]-[0054], [0059]-[0060], [0064], [0067]-[0070], [0076]-[0079].

488. Baig also describes that "multiple **advertisers** can bid against each other to have their advertisements displayed at a particular location and time of day, or **based on some other end-user profile**." Ex. 1007, ¶ [0102] (emphasis added); *see also* Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0103]-[0106], Fig. 21. A POSA would have understood that Baig's multiple advertisers are "contracted to display a TV ad" because the advertisers bid to display their advertisements at Baig's wireless hotspot access point devices (which, as I previously described, would include Costa's set-top box). *Id*. For example, after a successful bid, advertisers would be able to provide targeted advertisements to be displayed by devices 102 at Baig's access point, based on user profile information generated by Baig and/or Banga690's processes. Ex. 1014, ¶¶ [0005], [0035], [0040], [0058], [0060]; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0062], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2. It is my opinion that a POSA would have understood that by providing targeted advertisements to users as they access the VCSP webpage (or any other destination webpage), Baig's system is displaying the advertisements "to an audience of an Internet site," as recited in claim 146. Still further, in the combination with Baig-Costa-Zwicky and Baig-Costa-Banga690, the targeted advertisement (e.g., on a webpage or in television programming) would have been directed to the set-top box for display on a television to an audience at the hotspot (claimed "display a TV ad to an audience of an Internet site").

489. Accordingly, as shown above, Baig-Costa-Zwicky and Baig-Costa-Banga690 teach the additional limitations included in dependent claim 146, and render claim 146 obvious to a POSA.

B. GROUNDS C-D: BAIG IN VIEW OF COSTA, ZWICKY, AND COX, AND BAIG IN VIEW OF COSTA, BANGA690, AND COX

490. Cox discloses dynamically assigning the IP address of a wireless LAN (WLAN) access point. Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]. For example, Cox describes that "[i]f for some reason an access point should fail, it is important to handle replacement of the AP in the quickest possible time to minimize the adverse impact on network availability," and that there is thus "a need for dynamic assignment of AP identities." Ex. 1017, ¶ [0002], Abstract. For example, Cox describes obtaining IP addresses for a dynamic host configuration protocol (DHCP) server and a WLAN management module, both of which are provided by the DHCP server. Ex. 1017, ¶¶ [0022], [0024]-[0025], Figs. 1-2. The AP then requests configuration information from the WLAN management module, which allows for the quick and accurate configuration of the access point. Ex. 1017, ¶¶ [0002], [0023],. For example, "the new AP can be configured with a desired set of operational parameters, such as the configuration parameters of the previous AP." Ex. 1017, ¶ [0002].

491. It is my opinion that a POSA would have the skills, knowledge, and motivation to implement Cox's dynamic assignment of IP addresses to access points

(i.e., dynamic assignment of common IP addresses to minimize configuration overhead and effect on network availability) within the Baig-Costa-Zwicky and Baig-Costa-Banga690 systems. Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]; Ex. 1007, ¶¶ [0038], [0044]-[0052], [0056]-[0058], [0064]. In this combination, the IP addresses of Baig's access points (and thus, the common IP addresses) would be dynamically assigned. *Id*. This combination would have been obvious to a POSA because while both Baig and Cox teach assigning IP addresses to access points, Cox's teaching of dynamic assignments provides an additional benefit of allowing newly added/replaced access points to be quickly and accurately configured. Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0027]; Ex. 1007, ¶¶ [0046]-[0052], Figs. 1, 2. Doing so would have various advantages, as is described in Cox. For example, Cox describes that "it is important to handle replacement of the AP in the quickest possible time to minimize the adverse impact on network availability," and that configuring access points using dynamic IP address assignment may minimize such time. Ex. 1017, ¶ [0002]. Furthermore, Cox describes that configuring the identity of access points "may require a considerable amount of time, configuration overhead, and/or dedicated IT personnel with sufficient skill or knowledge to configure the newly installed access points," which would, e.g., likewise be reduced through the use of dynamic IP assignment. *Id*.

492. Baig already describes that "[t]he access point 106 (which includes the NAT router 108) replaces the 'local' IP address with its own 'public' IP address." Ex. 1007, ¶ [0046]. Thus, modifying Baig's system to assign such IP addresses in a dynamic manner, as taught by Cox, would have been a natural extension of Baig's already-existing functionality. Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]; Ex. 1007, ¶¶ [0046]-[0052], Figs. 1, 2.

493. A POSA would have found it obvious to modify Baig-Costa-Zwicky, and Baig-Costa-Banga690 in the ways I have described because such a combination would have been nothing more than applying a known technique to a known method to yield predictable results. See Section IV (referring to obviousness rationale D)). A POSA would have been motivated to combine Baig and Cox in this way to configure Baig's access point in a way that it may be quickly and efficiently replaced if needed. This combination would allow Baig-Costa-Zwicky's and Baig-Costa-Banga690's access point to be quickly and accurately configured if it had to be replaced, which would, e.g., minimize configuration overhead and/or adverse network impact. Ex. 1017, ¶¶ [0002], [0023]. Cox's method of dynamically assigning IP addresses to access points was a known technique. Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]. Using a shared public IP address for an access point was a known method. Ex. 1007, ¶¶ [0046]-[0052], Figs. 1, 2. Applying this known technique to this known method would have yielded the predictable

results of a dynamic assignment of IP addresses to the Baig-Costa-Zwicky and Baig-Costa-Banga690 access points (and thus, a dynamically assigned common IP address in these systems).

494. It is my opinion that a POSA would have had a reasonable expectation of success as this combination would have only required simple hardware and programming modifications, which was well within the ordinary level of skill in the art. Cox describes "APs being deployed in a WLAN to allow for automatic configuration of operational parameters," such that "the identity and associated configuration of a newly deployed AP is dynamically assigned based on physical network connection information, such as the switch and/or switch port to which the AP is connected." Ex. 1017, ¶ [0012]. Accordingly, incorporating these techniques to assign the common IP address of Baig-Costa-Zwicky and Baig-Costa-Banga690 would result in dynamically assigning the common IP address, which would, e.g., reduce configuration overhead and/or adverse network impact. Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]; Ex. 1007, ¶¶ [0046]-[0052], Figs. 1, 2.

1. Dependent Claim 11: "The method of claim 1 wherein the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and connected to the user's set-top box."

495. Claim 11 of the '260 Patent depends from claim 1 and further requires "wherein the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and connected to the user's set-top box."

Ex. 1001, claim 11. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

496. As discussed for claim element [1A], Baig-Costa-Zwicky and Baig-Costa-Banga690 teaches electronically associating an online access IP address and a set-top box IP address based on a common IP address. See Section XII.A.1.b, above. Claim 11 further requires that "the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and connected to the user's set-top box." To the extent Baig-Costa-Zwicky and Baig-Costa-Banga690 do not expressly disclose a dynamically assigned common IP address assigned to a modem or router used by multiple devices, Cox does.

497. As described above, Cox discloses dynamically assigning the IP address of a wireless LAN (WLAN) access point. Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0023]. For example, Cox describes that "[i]f for some reason an access point should fail, it is important to handle replacement of the AP in the quickest possible time to minimize the adverse impact on network availability," and that there is thus "a need for dynamic assignment of AP identities." Ex. 1017, ¶ [0002]. For example, Cox describes obtaining IP addresses for a dynamic host configuration protocol (DHCP) server and a WLAN management module, both of which are provided by the DHCP server. Ex. 1017, ¶¶ [0022]-[0025], Figs. 1-2. The access point then requests configuration information from the WLAN management

module, which allows for the quick and accurate configuration of the access point. Ex. 1017, ¶¶ [0002], [0023],. For example, "the new AP can be configured with a desired set of operational parameters, such as the configuration parameters of the previous AP." Ex. 1017, ¶ [0002].

498. As discussed in the introduction of Section XII.B with respect to the motivation to combine Cox and Baig, it would have been obvious to apply Cox's method of dynamic assignment of IP addresses to Baig's access points. See Section XII.B. Further, this combination would allow Baig-Costa-Zwicky's and Baig-Costa-Banga690's access point(s) to be quickly and accurately configured if it had to be replaced. Ex. 1017, ¶¶ [0002], [0023],. This is important to minimize the down time for failed access points to thereby maintain high availability for the plurality of hotspots and their services. Manually and locally configuring a replacement access point is error-prone due to the number of parameters and often requires an experienced administrator, unlikely to be on-site at a hotspot. A POSITA also would have appreciated that dynamic IP addresses enhance privacy and provide inherent security advantages to deter potential hackers monitoring the network activity for an access point. Thus, Cox's mechanisms for remotely reconfiguring the access point reassigning configuration information is highly desirable, allowing a quick swap-out using a spare access point on hand. It is my opinion that a POSA would have had a reasonable expectation of success as this combination would have

only required simple hardware and programming modifications, which were well within the ordinary level of skill in the art.

499. Therefore, it is my opinion that Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox teaches "wherein the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and connected to the user's set-top box," as required by claim 11.

500. Accordingly, as shown above, Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox teach the additional limitations included in dependent claim 11, and renders claim 11 obvious to a POSA.

2. Dependent Claim 90: "The method of claim 61 wherein the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and connected to the user's set-top box."

501. Claim 90 of the '260 Patent depends from claim 61 and further requires "wherein the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and connected to the user's set-top box." Ex. 1001, claim 90. As discussed above, claim 61, from which claim 90 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.2. Except for its dependency on claim 61, claim 90 is identical to claim 11.

502. Therefore, it is my opinion that Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox teaches "wherein the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and

connected to the user's set-top box," as required by claim 90 for the same reasons as I described above for claim 11.

503. Accordingly, as shown above, Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox teach the additional limitations included in dependent claim 90, and renders claim 90 obvious to a POSA.

C. GROUNDS E-F: BAIG IN VIEW OF COSTA, ZWICKY, COX, AND HAN, AND BAIG IN VIEW OF COSTA, BANGA690, COX, AND HAN

504. Han discloses a management server that maintains a database that registers and that stores changes to IP addresses that have been dynamically assigned. Ex. 1018, ¶¶ [0011]-[0012], [0016]-[0024], [0030], [0042], [0047]-[0050], Claims 2, 3. Further, Han discloses a method for a terminal (e.g., an AP for the internet) that operates on a standby timer that periodically updates its IP address. Ex. 1018, ¶¶ [0039]-[0043]. Han describes that "since the standby timer needs to acquire a new IP address after a predetermined time has elapsed due to the characteristics of the DHCP, the standby timer acquires a new IP address accordingly to standby timer time." Ex. 1018, ¶ [0039].

505. It is my opinion that a POSA would have had the skills, knowledge, and motivation to incorporate Han's method of storing and updating IP addresses that have been dynamically assigned to the systems of Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox. This combination would have been obvious because it

is simply a combination of prior art elements according to known methods to yield predictable results. As described above in Section XII.B, these Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox combinations teach dynamically assigning IP addresses. See Section XII.B, above; Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]; Ex. 1007, ¶¶ [0046]-[0052], Figs. 1, 2. Similarly, Han is directed to the implementation of dynamically assigned IP addresses, including the storage thereof in a centralized database. Ex. 1018, ¶¶ [0004]-[0013], [0018]-[0022], [0027]-[0029], [0039]-[0045], [0055]-[0057], Figs. 2, 3, Claims 2, 3. These are both known prior art elements that would be combined according to a known method (e.g., centralized database storage) to yield predictable results such as providing a centralized database that manages the various dynamically assigned IP addresses (e.g., the dynamically assigned IP addresses as described in Cox) in the system as they are updated. Ex. 1018, ¶¶ [0004]-[0013], [0018]-[0022], [0027]-[0029], [0039]-[0045], [0055]-[0057], Figs. 2, 3; Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]; Ex. 1007, ¶¶ [0046]-[0052], Figs. 1, 2. This would be advantageous as it would accommodate centralized storage of accurate dynamic IP addresses, despite any periodic updates (which might, e.g., not otherwise be reflected in other storage solutions). For example, Han describes that "the periodic IP address update is in accordance with the DHCP standard in the related art." Ex. 1018, ¶ [0041]. Furthermore, such centralized storage of the dynamic IP addresses would

achieve benefits such as "increasing the convenience of use and reducing the load of the embedded system by not directly managing the dynamic address of the embedded terminal in the embedded system." Ex. 1018, Summary.

506. A POSA would also have been motivated to modify Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox based on the teachings of Han in the ways that I have described because this combination would be nothing more than applying a known technique to a known method to yield predictable results. See Section IV (referring to obviousness rational (D)). That is, it would have been obvious for a POSA to apply Han's known method of storing and updating IP addresses that have been dynamically assigned to the system (e.g., to the various access points, or the like) to Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox to achieve the benefits of dynamic IP addresses described in Han. Ex. 1018, ¶¶ [0004]-[0013], [0018]-[0022], [0027]-[0029], [0039]-[0045], [0055]-[0057], Figs. 2, 3; Ex. 1017, Abstract, ¶¶ [0002], [0012]-[0014], [0022]-[0025]; Ex. 1007, ¶¶ [0046]-[0052], Figs. 1, 2. It is my opinion that a POSA would understand that Han's techniques for dynamic IP storage and/or updates are known, and would yield predictable results when applied to the known methods of Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox. *Id*. For example, when applied according to Baig-Costa-Zwicky-Cox's and Baig-Costa-Banga690-Cox's method of using a dynamically-assigned common IP address for electronic association, the resulting

system would update and/or store this common IP address at periodic intervals. *Id*. Han describes that "when the embedded terminal 110 newly acquires an IP address different from the previous IP address, the embedded terminal 110 notifies the management server 400 that an event in which the IP address is changed has occurred (S205), and the management server 400 updates and stores the terminal mapping table with the IP address of the corresponding embedded terminal 110 using the received IP address change event and stores new log information in the log file (S207)." Ex. 1018, ¶ [0042], Figs. 1, 2. Accordingly, in this combination, Baig's VCSP system stores a common IP address that is dynamically assigned and updated. Ex. 1018, ¶¶ [0010], [0039]-[0043].

507. A POSA would have had a reasonable expectation of success in making the proposed combination because the basic programming skills required would have been well within a POSA's skillset.

1. Dependent Claim 13: "The method of claim 1 wherein part (a) comprises the act of storing the common IP address, and further comprising updating the common IP address of the user."

508. Claim 13 of the '260 Patent depends from claim 1 and further requires "wherein part (a) comprises the act of storing the common IP address, and further comprising updating the common IP address of the user." Ex. 1001, claim 13. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

509. As discussed for claim element [1A], Baig-Costa-Zwicky and Baig-Costa-Banga690 teaches electronically associating an online access IP address and a set-top box IP address based on a common IP address. See Section XII.A.1.b, above. Claim 13 further requires that the electronically associating includes "the act of storing the common IP address, and further comprising updating the common IP address of the user." Ex. 1001, claim 13. As discussed for claim 11, Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox teaches that the common IP address is dynamically assigned. See Section XII.B.1, above. But to the extent it is argued that these combinations do not teach the act of storing and updating the common IP address, it is my opinion that Han teaches such functionality.

510. Han discloses a management server maintaining a database that registers and that stores changes to IP addresses that have been dynamically assigned. Ex. 1018, ¶¶ [0011]-[0012], [0016]-[0024], [0030], [0042], [0047]-[0050], Claims 2, 3. Further, Han discloses a method for a terminal (*e.g.*, an access point for the internet) that operates on a standby timer that periodically updates its IP address. Ex. 1018, ¶¶ [0039]-[0043]. For example, Han describes that "since the standby timer needs to acquire a new IP address after a predetermined time has elapsed due to the characteristics of the DHCP, the standby timer acquires a new IP address according to the standby timer time." Ex. 1018, ¶ [0039].

511. As I discussed above, it would have been obvious for a POSA to apply Han's method of storing and updating IP addresses that have been dynamically assigned to the access point. For example, a POSA would understand that Han's techniques for dynamic IP storage and/or updates are known, and would yield predictable results when applied to the known methods of Baig-Costa-Zwicky-Cox and Baig-Costa-Banga690-Cox. For example, when applied according to Baig-Costa-Zwicky-Cox's and Baig-Costa-Banga690-Cox's method of using a dynamically-assigned common IP address for electronic association, the resulting system would update and/or store this common IP address at periodic intervals. *Id*; See Section XII.B. In this combination, Baig's VCSP system would store a common IP address that is dynamically assigned and updated. Ex. 1018, ¶¶ [0010], [0039]-[0043].

512. Therefore, it is my opinion that Baig-Costa-Zwicky-Cox-Han and Baig-Costa-Banga690-Cox-Han teach "wherein part (a) comprises the act of storing the common IP address, and further comprising updating the common IP address of the user," as required by claim 13.

513. Accordingly, as shown above, Baig-Costa-Zwicky-Cox-Han and Baig-Costa-Banga690-Cox-Han teach the additional limitations included in dependent claim 13, and render claim 13 obvious to a POSA.

2. Dependent Claim 92: "The method of claim 61 wherein part (a) comprises the act of storing the common IP address, and further comprising updating the common IP address of the user."

514. Except for its dependency, the claim 92 is identical to claim 13. Ex. 1001, claims 13, 92. Therefore, it is my opinion that a POSA would have found claim 92 obvious in view of Baig-Costa-Zwicky-Cox-Han and Baig-Costa-Banga690-Cox-Han for the same reasons as claim 13. See Section XII.C.1, above.

3. Dependent Claim 14: "The method of claim 1 wherein part (a) comprises the act of storing the common IP address, and further comprising periodically updating the common IP address of the user."

515. Claim 14 of the '260 Patent depends from claim 1 and further requires "wherein part (a) comprises the act of storing the common IP address, and further comprising periodically updating the common IP address of the user." Ex. 1001, claim 14. As discussed above, claim 1, from which claim 14 depends is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

516. Claim 14 is identical to claim 13 except that it specifies "periodically" updating the common IP address. As I discussed above for claim 13, Han also discloses periodically updating the common IP address. See Section XII.C.1, above; Ex. 1018, ¶¶ [0039]-[0043] (describing a method for the terminal operating on a standby timer that periodically updates its IP address). Therefore, for the same reasons as I discussed in claim 13, it is my opinion that Baig-Costa-Zwicky-Cox-Han and Baig-Costa-Banga690-Cox-Han teach "wherein part (a) comprises the act

of storing the common IP address, and further comprising periodically updating the common IP address of the user," as required by claim 14.

517. Accordingly, as shown above, Baig-Costa-Zwicky-Cox-Han and Baig-Costa-Banga690-Cox-Han teach the additional limitations included in dependent claim 14, and render claim 14 obvious to a POSA.

4. Dependent Claim 93: "The method of claim 92 wherein part (a) comprises the act of storing the common IP address in the computer system, and further comprising periodically updating the common IP address of the user."

518. Except for its dependency and some insubstantial wording changes, claim 93 is identical to claim 14. It is my opinion that my analysis of claim 14 is applicable to claim 93. Therefore, it is my opinion that a POSA would have found claim 93 obvious in view of Baig-Costa-Zwicky-Cox-Han and Baig-Costa-Banga690-Cox-Han for the same reasons as claim 14. See Section XII.C.3, above.

5. Dependent Claim 16: "The method of claim 15 wherein part (a) comprises the act of storing the common IP address and dates and times corresponding thereto in the computer system, and further comprising, with the computer system, periodically updating (i) the common IP address and times and dates corresponding thereto or (ii) the list of online access IP addresses corresponding to specific online activities and time and dates corresponding to each of the online activities."

519. Claim 16 of the '260 Patent depends from claim 15 and further requires "wherein part (a) comprises the act of storing the common IP address and dates and

times corresponding thereto in the computer system, and further comprising, with the computer system, periodically updating (i) the common IP address and times and dates corresponding thereto or (ii) the list of online access IP addresses corresponding to specific online activities and time and dates corresponding to each of the online activities." Ex. 1001, claim 16. As discussed above, claim 15 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.19.

520. Based on my reading of claim 16, it is my understanding that claims 16 further requires (a) the act of storing the common IP address and the corresponding times and dates in the computer system, and (b) periodically updating one of: (i) the common IP address and times and dates corresponding thereto or (ii) the list of online access IP addresses corresponding to specific online activities and time and dates corresponding to each of the online activities. Ex. 1001, claim 16. As I have previously explained with respect to claim 1 at Section XII.A.1.c, above, Baig's VCSP content server(s) (claimed "computer system") tracks information such as online activities of individuals at an access point (e.g., IP address and times and dates of access) and storing this information (e.g., for providing targeted advertisements). Ex. 1007, ¶¶ [0038], [0052]-[0053], [0061], [0066], [0074], [0093], [0099], [0114]-[0120], Figs. 5-6, 14-19. Baig also explains that the access point uses a common public IP address for all of the connected devices. Ex. 1007, ¶¶[0038]-[0039], [0044]-[0045], [0053]-[0056].

521. Similarly, Banga690's CR server receives access information of devices at the access point in the form of device records. Ex. 1014, ¶¶ [0009]-[0010], [0013], [0028]-[0029], [0034], [0039], [0041]-[0048], [0056]-[0059], Figs. 2, 3. This access information includes any information associated with the devices at the access point. Ex. 1014, ¶ [0034]. The access information includes identifiers of the devices, the IP address associated with the device identifiers, times and dates of access, and other information associated with the network access devices. Ex.1014, ¶¶ [0009], [0013], [0028], [0034], [0038]-[0048], [0059], Figs. 2, 3. Therefore, both Baig and Banga690 describe receiving network access information that includes the IP address associated with the device identifiers, for example, the public IP address of Baig's hotspot access point, which is common to all devices connected to the hotspot. Ex. 1007, ¶¶ [0066], [0093], [0099], [0114]-[0120], Figs. 14-19; Ex.1014, ¶¶ [0013], [0028], [0034], [0041]-[0048], [0059], Figs. 2, 3.

522. Additionally, as I explained above at Sections XII.C.1-4 with respect to claims 13-14 and 92-93, Baig in view of Costa, Zwicky, Cox, and Han and Baig in view of Costa, Banga690, Cox, and Han further teach that the public IP address of Baig's hotspot may be a common, dynamically-assigned IP address that Baig's VCSP 202 stores and for which Baig's system periodically updates the common IP address information. For example, as I further explained, in these combinations the system would periodically update the stored common IP address information with

new information, a process which would include storing the IP address as well as the time and date information in the access records as taught by Banga690. Ex. 1014, ¶¶ [0034], [0038]-[0039], [0056].

523. Accordingly, as shown above, Baig-Costa-Zwicky-Cox-Han and Baig-Costa-Banga690-Cox-Han teach the additional limitations included in dependent claim 16, and render claim 16 obvious to a POSA.

6. Dependent Claim 95: "The method of claim 94 wherein part (a) comprises the act of storing in the computer system the common IP address and dates and times corresponding thereto, and further comprising periodically updating (i) the common IP address and times and dates corresponding thereto or (ii) the list of online access IP addresses corresponding to specific online activities and time and dates corresponding to each of the online activities."

524. Except for their dependencies and some insubstantial wording changes, claim 95 is nearly identical to claim 16. See Ex. 1001, claim 16. As I explained above at Section XII.C.5, claim 16 is taught by Baig-Costa-Zwicky-Cox-Han and Baig-Costa-Banga690-Cox-Han. Claim 95 requires that the storing be done "in the computer system" while claim 16 requires that the updating be done "with the computer system." Ex. 1001, claims 16, 95. It would have been obvious to a POSA that the limitations of claims 16 and 95 are both performed by Baig's VCSP 202 for the reasons described above at Section XII.C.5. Thus, it is my opinion that a POSA would have found claim 95 obvious in view of Baig-Costa-Zwicky-Cox-Han and

Baig-Costa-Banga690-Cox-Han for the same reasons as claim 16. See Section XII.C.5, above.

D. GROUNDS G-H: BAIG IN VIEW OF COSTA, ZWICKY, AND LEIGH, AND BAIG IN VIEW OF COSTA, BANGA690, AND LEIGH

525. Claims 17, 19, 20, 96, 98, and 99 relate to techniques for advertisement delivery to a set-top box. To any extent Baig does not already teach the claimed techniques (see XII.A.21-22), Leigh does, and it is my opinion that a POSA would have found it obvious to modify Baig in view of Leigh's teachings.

526. Leigh discloses a central "ad content server" that inserts advertisements into web pages on the Internet in response to requests from the web pages for advertisements. Ex. 1020, Figs. 1A, 2A, Abstract, ¶¶ [0022], [0053]-[0054]. Leigh describes that the ad content server may insert targeted advertisements into webpages for a variety of publishers (e.g., sources) for presentation to users at a wireless hotspot. Ex. 1020, ¶¶ [0001]-[0003], [0013], [0024], [0033], [0047].

527. To perform these functions, Leigh's central ad content server stores, retrieves, and eventually inserts advertisements at target websites for users at hotspots using embedded code in webpages. Ex. 1020, ¶¶ [0001]-[0004], [0013]-[0034], [0051]-[0056], Figs. 1, 2A, 3A, 4.

528. Leigh's system "connects a user with a target website via a wireless customer premises equipment [at] a 'hotspot'," and "when [a] user makes a HTTP-

based request for an Internet web page, the request is first re-routed to [the] central server." Ex. 1020, ¶¶ [0013]-[0014], [0047], Fig. 1A. As shown in Leigh's Fig. 1A below, a client computer 102 accesses the Internet 115 through a router 106 and network 107. The traffic from client 102 is then routed to an ad server 110 for retrieving and inserting the targeted advertisements into pages from various web publishers, including the depicted target web server 120. Ex. 1020, ¶¶ [0013]-[0024], [0033], [0047].

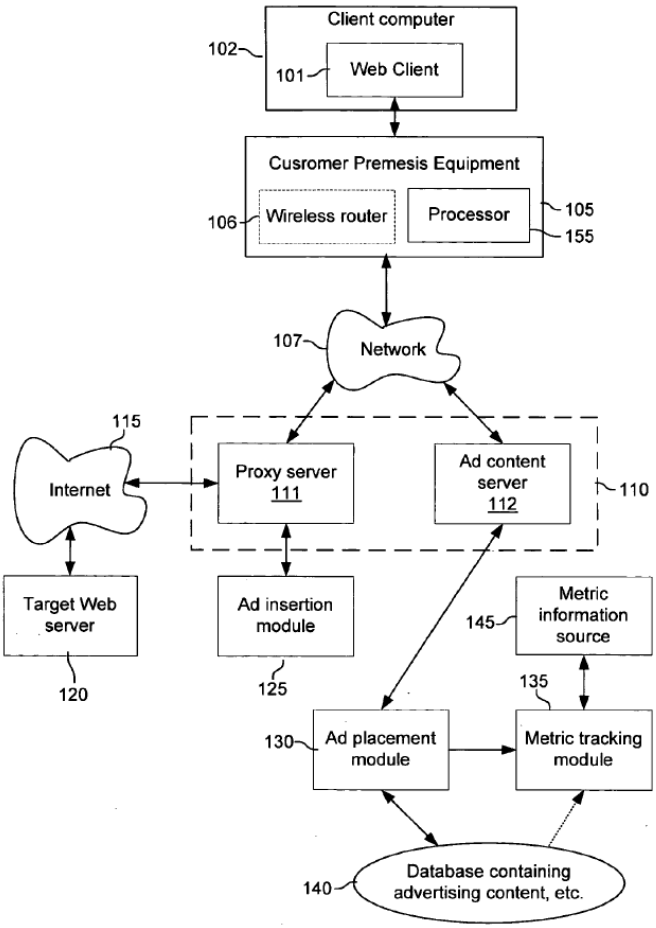


FIG. 1A

Ex. 1020, Fig. 1A

529. As I explain in further detail below, and to the extent it is required by claims 17 and 96, it is my opinion that a POSA would have found it obvious to apply Leigh's techniques for providing targeted advertisement in not just websites from one source, but also in websites of other sources or publishers. Further, with respect to claims 19, 20, 98, and 99, it is also my opinion that a POSA would have found it obvious to adopt Leigh's techniques for advertisement delivery, such as embedding code fragments executable by a set-top box, in Baig. The obviousness of these combinations is detailed in the relevant sections below.

530. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to modify Baig and combine Baig with Leigh in the way that I have described above. See Section IV (referring to obviousness rationale (G)). Leigh's teachings would have suggested to a POSA that Leigh's central ad server would be useful in a system "providing vicinity-based community services at a wireless access location by a public network service provider," such as Baig's system. For example, both Leigh and Baig describe implementing their systems at similar hotspots, such as coffee shops, cafes, and other premises. Ex. 1007, Abstract, ¶¶ [0038]-[0039], [0042]-[0043], [0052]-[0053]; Ex. 1020, ¶¶ [0001]-[0003], [0013]-[0014], [0024], [0033], [0047], Fig. 1. It would have been obvious to a POSA to configure Baig's VCSP 202 to act as a central ad server because doing so would have facilitated the function of providing targeted

advertisements to devices connected to Baig's hotspot access point 106 by allowing VCSP to serve as a central storage and delivery hub for the targeted advertisements. Ex. 1020, ¶¶ [0001]-[0003], [0013]-[0014], [0024], [0033], [0047], Fig. 1; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093]-[0106], [0124], Figs. 1, 2.

531. Additionally, as described above, there are only two choices from which a targeted advertisement may come from (the computer system or outside the computer system). This combination would have thus been obvious to a POSA because it represents a simple substitution of one known advertisement delivery process (STB retrieving an advertisement using Leigh's ad-code insertion) for another (VCSP servers 224 sending the advertisement to the STB). See Section IV (referring to obviousness rationale (B)). The combinations with Leigh relate to the first of these two choices, and thus the combination would have been a straightforward means of achieving one of the two options for providing targeted advertisements. Further, it would have been straightforward for a POSA with the requisite skills and experience to configure Baig's system that is already associating devices and selecting targeted advertisements to send to web pages to also send those advertisements to the set-top box via Leigh's central ad server.

532. It is also my opinion that other rationales further support my finding that the combination of Baig and Leigh would have been obvious. First, the combination of Baig and Leigh merely involves the use of a known technique to

improve similar systems in the same way. See Section IV (referring to obviousness rationale (C)). As I explained above, Baig and Leigh each teach similar systems where advertisements are directed to users, targeted to the specific users to enhance their relevance and increase user engagement. Ex. 1020, ¶¶ [0001]-[0003], [0013]-[0014], [0024], [0033], [0047], Fig. 1; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093]-[0106], [0124], Figs. 1, 2. Leigh's system would be an improvement to Baig's by which the VCSP can insert targeted advertisements (which would be of greater relevance to the user than non-targeted advertisements) into content (such as webpages) requested by a device 102 through Baig's hotspot access point 106, increasing the likelihood that the user will engage with the advertisement and benefit the advertiser. Ex. 1020, ¶¶ [0001]-[0005], [0013], [0024], [0033], [0047], Fig. 1.

533. This improvement would have benefited the Baig-Costa-Zwicky and Baig-Costa-Banga690 systems because it would allow the combinations to store a variety of content at the central ad server and provide more relevant advertising to all webpages accessed by devices 102 through the hotspot access points 106. Therefore, Leigh's improvements would have resulted in an increase in the "rate of response" to the advertisements when applied to the combinations, as Leigh's system is designed to provide. Ex. 1020, ¶¶ [0003]-[0005], [0013], [0024], [0033], [0047], Fig. 1. It would have been obvious to a POSA that by increasing the rate of response in the Baig-Costa-Zwicky and Baig-Costa-Banga690 systems (by adding Leigh to

both systems), and providing advertisements related to a larger variety of content, the combinations with Leigh would have been more enticing to advertisers and would have increased demand for Baig's VCSP services for advertisement campaigns. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093]-[0106], [0124], Figs. 1, 2; Ex. 1020, ¶¶ [0001]-[0003]. Further, by increasing the number of webpages that targeted advertisements may be displayed at, Leigh's improvements would increase the number of advertising opportunities for the advertisers and the number of advertising views, thereby increasing the number of bids received and the revenue generated in the combined Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh systems. Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0103]-[0106], Fig. 21

534. The combinations with Leigh merely combine known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are Baig's system providing Internet access and targeted advertisements to devices at a wireless hotspot and Leigh's known process for inserting or adding targeted advertisements in user-requested webpages via its central advertisement system 110. Ex. 1020, ¶¶ [0001]-[0003], [0013]-[0014], [0024], [0033], [0047], Fig. 1; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093]-[0106], [0124], Figs. 1, 2. These known elements would have been combined according to known methods, such as Leigh's

method of using a central ad server to insert advertisements in hotspot environments similar to Baig's hotspot. Ex. 1020, ¶¶ [0013]-[0014], [0024], [0028]-[0035]. For example, a POSA would have incorporated Leigh's advertisement system 110 (and central ad server) into the VCSP and used Leigh's known methods of redirection and/or encapsulation techniques to insert targeted advertisements into webpages accessed by users at a hotspot. Ex. 1020, ¶¶ [0013]-[0014], [0024], [0028]-[0035]. Finally, the combination yields predictable results, specifically it yields Baig's VCSP, which already provides targeted advertisements to user devices, further configured to provide the targeted advertisements via the central ad server of Leigh's advertising system 110 incorporated into the VCSP.

535. A POSA would have had more than a reasonable expectation of success in making the proposed combination. Specifically, a POSA would have had the skills, including programming and design skills, and experience, including experience in data communications and programming systems similar to VCSP 202, to carry out the straightforward combinations described above.

1. Dependent Claim 17: "The method of claim 1 wherein the computer system is a central ad server and the first television advertisement is received at the central ad server and directed to the set-top box."

536. Claim 17 of the '260 Patent depends from claim 1 and further requires "wherein the computer system is a central ad server and the first television advertisement is received at the central ad server and directed to the set-top box."

Ex. 1001, claim 17. As discussed above, claim 1 is taught by Baig in view of Costa and Zwicky and Baig in view of Costa and Banga690. See Section XII.A.1, above.

537. As I previously discussed above at Section XII.A.21, it is my opinion that Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 renders the limitations of claim 17 obvious. I have been asked to consider a scenario in which the claimed "a central ad server" requires a server that provides advertisements for websites of different publishers. To any extent Baig does not already disclose this, Leigh does, as I explained above, and it would have been obvious to modify Baig in view of Leigh's teachings such that Baig's VCSP 202 included Leigh's targeted advertising process that receives requests for content, such as for websites, from user devices connected at a hotspot, and to provide the requested content to the requesting devices with targeted advertising, regardless of a publisher of the requested content.

538. Baig-Costa-Zwicky and Baig-Costa-Banga690 teach targeted advertisement systems in which mobile devices at a hotspot, such as Costa's set-top box, access the Internet via Baig's access point 106 and receive targeted advertisements from Baig's VCSP 202. See Section XII.A.1.b-c, above. The VCSP 202 receives these targeted advertisements from advertising entities and provides them to mobile devices 102 connected to the access point 106. Ex. 1007, ¶¶ [0011], [0093], [0099]-[0101]. Similarly, and as described above, Leigh teaches an

advertisement system 110 with an ad content server that stores, retrieves, and eventually inserts advertisements at target websites for users at hotspots. Ex. 1020, ¶¶ [0001]-[0003], [0013]-[0014], [0024], [0033], [0047], Fig. 1. After storing/receiving the targeted advertisements, Leigh's advertising servers provide the targeted advertisements to the target websites by adapting requested webpages (e.g., with embedded code) to include the targeted advertisements. Ex. 1020, ¶¶ [0001]-[0004], [0013]-[0034], [0047], [0051]-[0056], Figs. 1, 2A, 3A, 4. Leigh's system is similar to the VCSP 202 in that both provide targeted advertisements to users in hotspots (for example, a café/coffee shop) where users connect to the Internet. Ex. 1020, ¶¶ [0001]-[0003], [0013]-[0014], [0024], [0033], [0047], Fig. 1; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0099]-[0101], [0104], [0124], Figs. 1, 2A.

539. Modifying Baig-Costa-Zwicky or Baig-Costa-Banga690 in view of Leigh would have resulted in devices such as Costa's set-top box accessing the Internet via Baig's access point 106. Baig's VCSP, which would include targeted advertising functionality of Leigh's advertisement system 110, would receive content requests from hotspot devices (e.g., a set-top box or mobile devices), and transmit targeted advertisements back to those devices (e.g., via requested webpages). Baig's modified VCSP would perform such a targeted advertising process for all requested content across different publishers or sources, as Leigh

discloses. Ex. 1020, ¶¶ [0001]-[0004], [0013]-[0034], [0047], [0051]-[0056], Figs. 1, 2A, 3A, 4.

540. This modification to Baig in view of Leigh would have been obvious to a POSA because it is simply the use of a well-known technique to improve similar systems in the same way. See Section IV, above (referring to obviousness rationale (C)). The similar systems are Baig's and Leigh's targeted advertising systems where advertisements are directed to users, targeted to the specific users to enhance their relevance and increase user engagement. Ex. 1020, ¶¶ [0001]-[0003], [0013]-[0014], [0024], [0033], [0047], Fig. 1; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093]-[0106], [0124], Figs. 1, 2. Leigh teaches a known technique of injecting targeted advertisements into any webpage requested by hotspot-connected devices. Ex. 1020, ¶¶ [0001]-[0005], [0013], [0024]. By enabling Baig's system to include targeted advertising in any website requested through the hotspot, a POSA would have recognized that advertisers would have many more opportunities for advertising. It would have been obvious to a POSA that, by applying Leigh's technique, advertisers in Baig's system would have more opportunities to provide targeted advertising because the universe of websites through which targeted advertising could be implemented would be expanded.

541. A POSA would have recognized that Leigh's techniques would have resulted in an increase in the "rate of response" to the advertisements when applied

to Baig-Costa-Zwicky or Baig-Costa-Banga690, as Leigh's system is designed to provide. Ex. 1020, ¶¶ [0003]-[0005], [0013], [0024], [0033], [0047], Fig. 1. It would have been obvious to a POSA that by increasing the rate of response in the Baig-Costa-Zwicky and Baig-Costa-Banga690 systems (by adding Leigh to either combination), and providing more targeted advertising opportunities through content from multiple sources, a targeted advertising system would have been more enticing to advertisers and would have increased demand for Baig's VCSP services. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093]-[0106], [0124], Figs. 1, 2. Moreover, increasing the number of advertising opportunities for advertisers (and thus, the number of possible advertising views) would also have led to an increase in the number of advertising bids received and revenue generated through Baig's VCSP system. Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0093]-[0106], Fig. 21.

542. Further, as discussed above in the introduction to Section XII.D with respect to the motivations to combine Leigh with Baig-Costa-Zwicky and Baig-Costa-Banga690, because there are only two options for providing targeted advertisements it would have been the mere simple substitution of one known technique for another to implement Leigh's techniques in Baig-Costa-Zwicky and Baig-Costa-Banga690. It is also my opinion that a POSA would have had more than a reasonable expectation of success in making the proposed combination. Specifically, a POSA would have had the skills, including programming and design

skills, and experience, including experience in data communications and programming systems to carry out the straightforward combinations described above.

543. Accordingly, for at least the reasons I explain above, it is my opinion that Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh teach the additional limitations included in dependent claim 17, and renders claim 17 obvious to a POSA.

2. Dependent Claim 96: "The method of claim 61 wherein the computer system is a central ad server and the first television advertisement is received at the central ad server and directed to the set-top box."

544. Claim 96 of the '260 Patent depends from claim 61 and further requires "wherein the computer system is a central ad server and the first television advertisement is received at the central ad server and directed to the set-top box." Ex. 1001, claim 96. As discussed above, claim 61 is taught by Baig in view of Costa and Zwicky and Baig in view of Costa and Banga690. See Section XII.A.2, above.

545. I note that, other than their dependencies, claim 96 is identical to claim 17. Therefore, it is my opinion that a POSA would have found claim 96 obvious in view of Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh for substantially the same reasons as claim 17. See Section XII.D.1, above.

3. Dependent Claim 19: "The method of claim 1 wherein part (b) comprises, with the computer system, directing instructions to the set-top box to retrieve the first television advertisement from a profile provider, from an online site, or from an independent ad server."

546. Claim 19 of the '260 Patent depends from claim 1 and further requires "wherein part (b) comprises, with the computer system, directing instructions to the set-top box to retrieve the first television advertisement from a profile provider, from an online site, or from an independent ad server." Ex. 1001, claim 19. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690.

547. As described above with regard to claim element [1B], in Baig-Costa-Zwicky and Baig-Costa-Banga690, an advertisement is caused to be directed to a set top box for presentation. See Section XII.A.1.c, above. To the extent that Baig-Costa-Zwicky and Baig-Costa-Banga690 fail to expressly teach directing instructions to the set-top box to retrieve an advertisement, Leigh does.

548. As I explained above in the introduction to Section XII.D and for claim 17 (Section XII.D.1), Leigh teaches a well-known technique for providing targeted advertisements in webpages using embedded code. In particular, Leigh teaches "inserting a code fragment into [a] HTML page" where the code fragment ("instructions"), when executed by a client browser, causes a device to retrieve the content identified from a server (claimed "from an online site, or from an independent ad server"). Ex. 1020, ¶¶ [0013]-[0034], [0051]-[0056], Figs. 1, 2A,

3A, 4. The retrieval is from "an online site" because Leigh teaches that the code fragment may include an advertisement uniform resource locator (URL) 203 (Figure 2A) which represents a network location on the Internet. Ex. 1020, ¶¶ [0029]-[0031]. Additionally, Leigh teaches that the URL may direct the client browser to Ad Content Server 112, which also describes the claimed "independent ad server." Ex. 1020, Figs. 1A (illustrating ad content server 112 being separate from a target web server), 1B, 3A (illustrating ad content server 112 as being separate from proxy server 111 and ad insertion module 125).

549. As I also already explained above, it would have been obvious to modify Baig's VCSP system to use Leigh's advertisement delivery techniques to improve the number of advertising opportunities the VCSP system provides to possible advertisers. Section XII.D.1, above.

550. In addition, implementing Leigh's embedded code fragment technique was simply one well-known way of delivery content through webpages. As I explained for claim 1, Baig already discloses providing targeted advertising in webpages, and thus, it would have been obvious to a POSA to have chosen and applied one of the well-known ways of advertisement delivery through websites, as Leigh teaches. Section XII.A.1.c, above; Ex. 1007, ¶¶ [0093], [0099]-[0101], claim 13. For example, Leigh's embedded code fragments would be executed by Baig-Costa-Zwicky-Leigh's or Baig-Costa-Banga690-Leigh's set-top box. The

predictable result of this application would have been that the set-top box retrieves the advertisement indicated by the URL from "an online site," when rendering a webpage. Ex. 1020, ¶¶ [0013]-[0034], [0051]-[0056], Figs. 1, 2A, 3A, 4.

551. As discussed in the introduction to Section XII.D, this combination would have also been obvious to a POSA because it represents a simple substitution of one known advertisement delivery process (STB retrieving an advertisement using Leigh's ad-code insertion) for another (VCSP servers 224 sending the advertisement to the STB). See Section IV (referring to obviousness rationale (B)). That is, a POSA would have recognized that there were only two options for a set-top box to obtain an advertisement, particularly through a webpage. One option was for the set-top box to receive it automatically without requesting it. The other option was for the set-top box to send a request or otherwise retrieve the advertisement, and Leigh explicitly discloses a technique for doing so.

552. Further, the use of an embedded link (e.g., code fragment in an HTML document) would also have been obvious as the use of a known technique to improve similar systems in the same way. For example, applying an embedded link technique for advertisement retrieval would have provided benefits such as reducing or minimizing the need for VCSP servers 224 or a set-top box to serve as a repository for advertisements. Instead, the VCSP servers and set-top box may simply request or retrieve the advertisements from its source (e.g., an online site or advertisement

server) as needed. Additionally, use of a retrieval process, as taught by Leigh, would further allow the recipient device to control advertisement timing. For example, the recipient device and browser client would be able to retrieve the advertisement only when needed (e.g., when a user wants to view a particular webpage).

553. Accordingly, as shown above, Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh teach the additional limitations included in dependent claim 19, and render claim 19 obvious to a POSA.

4. Dependent Claim 98: "The method of claim 61 wherein part (b) comprises, with the computer system, directing instructions to the set-top box to retrieve the first television advertisement from a profile provider, from an online site, or from an independent ad server."

554. Claim 98 of the '260 Patent depends from claim 61 and further requires "wherein part (b) comprises, with the computer system, directing instructions to the set-top box to retrieve the first television advertisement from a profile provider, from an online site, or from an independent ad server." Ex. 1001, claim 98. As discussed above, claim 61, from which claim 98 depends, is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.2, above.

555. Other than its dependency, claim 98 is identical to claim 19. Ex. 1001, claim 98. Therefore, it is my opinion that a POSA would have found claim 98 obvious in view of Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh for the same reasons as claim 19. See Sections XII.D.3, above.

5. Dependent Claim 20: "The method of claim 1 wherein the computer system causes the first television advertisement to be directed only in response to a request for advertisements originating from the user's set-top box."

556. Claim 20 of the '260 Patent depends from claim 1, which is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690 as explained in Section XII.A.1. Claim 20 further requires "wherein the computer system causes the first television advertisement to be directed only in response to a request for advertisements originating from the user's set-top box." Ex. 1001, claim 20. It is my opinion that claim 20's requirement that the advertisement is directed only in response to a request from the user's set-top box is taught by Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh for the same reasons as I explained for claim 19. See Section XII.D.3. That is, Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh teach a set-top box retrieving an advertisement based on an embedded code fragment in an HTML web page. A POSA would understand that the advertisement corresponding to the embedded code fragment is not provided to the set-top box until the set-top box browser client executes the code fragment. Accordingly, Baig's VCSP system embedding such a code fragment in a requested webpage (see Sections XII.D.1-3) teaches "the computer system causes the first television advertisement to be directed only in response to a request for advertisements originating from the user's set-top box."

557. Accordingly, Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh teach the additional limitations included in dependent claim 20, and render claim 20 obvious to a POSA.

6. Dependent Claim 99: "The method of claim 61 wherein the computer system causes the first television advertisement to be directed only in response to a request for advertisements originating from the user's set-top box."

558. Claim 99 of the '260 Patent depends from claim 61 and further requires "wherein the computer system causes the first television advertisement to be directed only in response to a request for advertisements originating from the user's set-top box." Ex. 1001, claim 99. As discussed above, claim 61, from which claim 99 depends, is taught by Baig in view of Costa and Zwicky and Baig in view of Costa, and Banga690. See Section XII.A.2, above.

559. Other than its dependency, claim 99 is identical to claim 20. Ex. 1001, claim 99. Therefore, it is my opinion that a POSA would have found claim 99 obvious in view of Baig-Costa-Zwicky-Leigh and Baig-Costa-Banga690-Leigh for the same reasons as claim 20. See Section XII.D.5, above.

E. GROUNDS I-J: BAIG IN VIEW OF COSTA, ZWICKY, AND WING, AND BAIG IN VIEW OF COSTA, BANGA690, AND WING

560. Wing (Ex. 1022), like Baig, describes a server system (e.g., a gateway server) that facilitates Internet access by multiple different devices via a common public IP address. Ex. 1022, ¶¶ [0022]-[0030], Fig. 2A, claims 1-5. More

specifically, to do so, Wing maintains identity information, such as the common (e.g., shared between all devices connected to the gateway) public IP address, device specific NAT port numbers, and/or other unique device specific identifiers. *Id.*, ¶ [0009]. For example, Wing maintains such identity information at a network management system 51 (NMS 51). *Id*. In the event that such identity information changes, the corresponding devices notify the NMS 51 of the changes accordingly. *Id.*, ¶¶ [0009], [0022]-[0030], [0039]-[0046]. For example, the devices may notify the NMS 51 of changes to the common public IP address, a device specific NAT port number, and/or other unique device specific identifier. Ex. 1022, ¶¶ [0022]-[0030], [0039]-[0046].

561. Accordingly, it is my opinion that a POSA would recognize that Wing describes the need to monitor devices connected to a gateway in order to detect any changes in IP addresses that may affect communications between the gateway and such devices (e.g., so as to successfully maintain communication with devices behind the gateway and/or NAT). See Ex. 1022, ¶¶ [0044]-[0046]. More specifically, Wing explains that it is important for a management server to identify changes in device identification information (e.g., public gateway IP address, private IP address, port number, and/or other device identifier), to prevent disruption of communication with the corresponding device. Ex. 1022, ¶¶ [0022]-[0030], [0039]-[0046].

562. It is further my opinion that by implementing these techniques of Wing, Baig's VCSP server 224 would be able to keep track of the most current address information of the hotspot connected devices. For example, doing so would enable the VCSP server 224 to correctly and successfully send targeted advertisements to their intended devices.

1. **Dependent Claim 54: "The method of claim 1 wherein the common IP address is determined by the computer system by matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs."**

563. As I explain above at Section XII.A.53, it is my opinion that Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 teach claim 54.

564. I have been asked to analyze claim 54 assuming that claim 54 requires confirming that the IP address of the STB is the same before and after the online activity and assuming that Baig in view of Costa and Zwicky, or Baig in view of Costa and Banga690 does not teach such confirmation. It is my opinion that Wing teaches confirming that a device is using the same identifier such as an IP address, i.e., that this identifier has not changed. It is also my opinion that it would have been obvious to modify Baig to apply such a confirmation technique.

565. Like Baig, Wing is directed to an environment in which multiple devices may be connected to the Internet via a gateway and a common public IP

address. Ex. 1022, ¶¶ [0022]-[0030], Fig. 2A, claims 1-5. Wing teaches a network management system 51 (NMS 51) that stores identification information for each device connected to the gateway, including the gateway's public IP address (which is shared by all devices connected to that gateway), a NAT port number (specific to each device), and a unique device identifier. *Id.*, ¶ [0009]. To detect changes, Wing teaches that each device may monitor its address, and exchange communications with a server to identify any changes. *Id.*, ¶¶ [0009], [0022]-[0030], [0039]-[0046]. More specifically, Wing explains that, in response to detecting a change in address information (such as a change to the public gateway IP address, NAT port number, or unique device identifier), the device reports the updated address to NMS 51. Ex. 1022, ¶¶ [0022]-[0030], [0039]-[0046].

566. It is my opinion that a POSA would have understood that Wing teaches the need to monitor IP address changes for gateway-connected devices to ensure that communications with devices behind a gateway and/or NAT can be successfully maintained. See Ex. 1022, ¶¶ [0044]-[0046]. As Wing explains, because a public gateway IP address, private IP address and/or port number, or device identifier may change, it is important for a management server to recognize such changes; otherwise, communications with that device may be disrupted. Ex. 1022, ¶¶ [0022]-[0030], [0039]-[0046]. A POSA would understand that detecting changes also

teaches confirming that device information has not changed so that communication can continue using the same addressing information.

567. It is further my opinion that a POSA would have found it obvious and would have been motivated to adopt Wing's teaching of confirming whether an IP address is the same or has changed (e.g., by monitoring and storing IP address updates) in Baig's system because this would allow Baig's VCSP server 224 and/or other servers to maintain successful communications. For example, using Wing's techniques, VCSP server 224 would keep track of the most up-to-date address information of the hotspot-connected devices (as taught in Wing), and correctly and successfully target intended devices with advertisements. If VCSP server 224 did not confirm device address information, advertisements or other content may be transmitted using old and invalid information, and transmission of that communication would fail.

568. Accordingly, using Wing's technique would have been an improvement since Baig discloses that an AP may be part of a larger mesh network of hotspots, and that a device can hop from one AP to another within the mesh network. Ex. 1007, ¶¶ [0039], [0044]-[0047], [0055], [0060]-[0062], [0065]-[0066], [0075]-[0077]. When a device changes AP (i.e., moves from one hotspot to another), the device's public IP address would also change since each AP is assigned a different public IP address. Ex. 1007, ¶¶ [0039], [0044]-[0047]. In the modified

system, VCSP server 224 would adopt Wing's technique in Baig so that the VCSP server 224 is aware of the current IP address of hotspot-connected devices, including an STB. This process would include a VCSP server 224 confirming that an STB's IP address has not changed across various time periods, including periods in which other devices may be joining the hotspot (i.e., claimed "online activity"). This teaches "matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs."

569. It is my opinion that this combination of Baig and Wing (and thus, Baig, Costa, Zwicky, and Wing and/or Baig, Costa, Banga690, and Wing) would have been obvious to a POSA because it is the use of a known technique to improve similar systems in the same way (See Section IV, above (referring to obviousness rationale (C)). As an initial matter, and as I explain above, both Baig and Wing teach similar systems that include access points (e.g., gateways) through which multiple devices are connected to the internet. By using an access point, each of these devices would share a common public IP address. Wing further teaches monitoring for changes to the IP addresses of those devices (along with additional information) so that those devices can be properly reached. Ex. 1022, ¶¶ [0022]-[0030], [0039]-[0046]. It is my opinion that a POSA would have found it obvious to apply this technique (i.e., monitoring the IP addresses of the user devices and store updated IP

address) because it would have improved Baig's system in the same way: providing the ability to monitor and collect device identification information (e.g., IP addresses) and to confirm that the IP address of a device, such as a hotspot-connected STB, has not changed. In one example, a POSA would have appreciated that when a user device joins a hotspot community, the profile information associated with that device may be used to select targeted advertisements for other devices and individuals at the hotspot, including an STB. It would have been beneficial for the VCSP server 224 in Baig to confirm that the STB that was connected to the hotspot prior to the new user device joining the community was still connected to that same hotspot before attempting to transmit the advertisement to that STB.

570. In short, and for at least the foregoing reasons, it is my opinion that Baig-Costa-Zwicky-Wing and Baig-Costa-Banga690-Wing teach claim 54.

2. Dependent Claims 75, 116, and 141

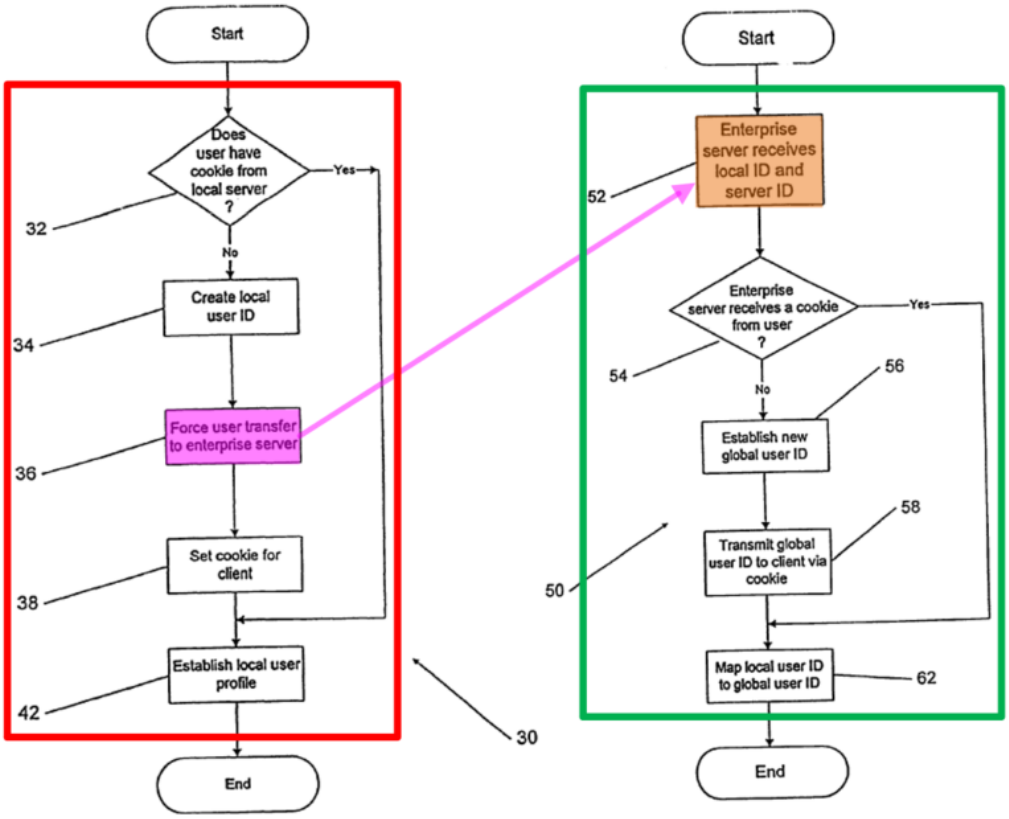
571. Except for their dependencies and inconsequential wording changes, claims 75, 116, and 141 are nearly identical to claim 54 . See Ex. 1001, claims 75, 116, and 141. Therefore, it is my opinion that a POSA would have found claims 75, 116, and 141 obvious in view of Baig-Costa-Zwicky-Wing and Baig-Costa-Banga690-Wing for the same reasons as claim 54. See Section XII.E.1, above.

F. GROUND K: BAIG IN VIEW OF COSTA, BANGA690, AND JAYE

572. As discussed above at Section XII.A.1 with respect to claim 1, Baig-Costa-Banga690 derives user profile information from a user's online activity. Ex. 1014, ¶¶ [0034]-[0046], [0053]-[0060], Figs. 3-4. As further explained at Section XII.A.3 with respect to claim 26, Baig-Costa-Banga690 also teaches a profile server (e.g., Banga690's CR server) that electronically delivers the user profile information to a computer system (e.g., Baig's VCSP server). Ex. 1014, ¶¶ [0038], [0072]; Ex. 1007, ¶ [0093].

573. Jaye (Ex. 1026) describes a system that, similar to Baig-Costa-Banga690, automatically electronically delivers user profile information. Ex. 1026, 2:15-3:39, 6:32-7:6. Jaye describes maintaining a local user profile "based on user interaction with the local server." Ex. 1026, 2:15-21, 3:3-9, 6:1-4, 6:34-7:6. After Jaye's system determines user profile information, such as a user ID and other profile information, Jaye discloses that a local server 15 (**red**) forces a transfer to automatically redirect user information to a computer system (the enterprise server 16 (**green**)). Ex. 1026, 2:15-3:39, 6:32-7:6. This is shown in the following drawing placing Jaye's Figure 2 (left) side-by-side with Jaye's Figure 3 (right). Jaye's Figure 2 (left) shows the operation of a local server e.g., local server 15 (**red**), while Jaye's Figure 3 (right) shows the operation of the enterprise server 16 (**green**). The

magenta arrow shows that the local server forces a transfer of user information that is received by the enterprise server 16.



Ex. 1026, Figs. 2 (left) and 3 (right) (both annotated)

Ex. 1026, 2:15-3:39, 6:32-7:6, 7:46-57, Figs. 2-3. A POSA would have understood that the forced transfer in Jaye is an automatic redirection.

574. Jaye explains that "a variety of conventional techniques exist for forcing a transfer to another server." Ex. 1026, 6:34-36. For example, Jaye describes a technique of inserting, into an image tag of a webpage, a special URL that redirects the client 12 to the enterprise server 16. Ex. 1026, 6:36-40. Jaye further describes appending user profile information, such as a local server ID and client information

(e.g., a local user ID), to the special URL. Ex. 1026, 6:40-46. As an example, Jaye describes a pseudo-URL: http://enterprise_server_id/go?local_server_id&client_information. *Id.* This example teaches a POSA that the special URL can be used to provide the enterprise server 16 with two pieces of information: the local_server_id, which provides the ID of the local server such as the local server 15, and the client_information, which teaches providing various user information about the client. By appending the client_information ("user profile information") to the URL, Jaye's system uses HTML redirection to redirect a client device to a separate computer system (enterprise server 16) to deliver that user profile information. Ex. 1026, 2:15-3:39, 6:32-7:6, 7:46-57, Figs. 2-3.

575. It is my opinion that a POSA would have found it obvious to combine Baig-Costa-Banga690's VCSP server providing Internet access to devices 102 (user's online interface devices) with Jaye's redirection as a means of delivering user profile information. For example, in the combination of Baig-Costa-Banga690-Jaye, a POSA would have applied Jaye's well-known electronic communication techniques (i.e., network/URL redirection) with a profile server (e.g., the VCSP) to the user's online interface device to deliver the user profile information. Jaye's system is similar to Baig's in that both describe determining user profile information and automatically delivering user profile information to a computer system. Ex.

1026, 2:15-3:39, 6:32-7:6, 7:46-57, Figs. 2-3; Ex. 1007, ¶¶ [0038], [0066], [0072], [0093], [0099], [0114]-[0120], Figs. 14-19. Further, Jaye describes its redirect as one of a variety of conventional (i.e., well-known) techniques for forcing a transfer, and it would have been obvious to a POSA to use such a technique to deliver user profile information in Baig-Costa-Banga690's system. Ex. 1026, 6:32-7:6.

576. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to modify Baig and combine Baig with Jaye in the way that I have described above. See Section IV (referring to obviousness rationale (G)). A POSA would have been motivated to modify Baig-Costa-Banga690's system such that Jaye's methods of delivering user profile information with a URL redirect would have been used as part of Baig's method of deriving user information (the user profile registration process) for the VCSP system. Ex. 1007, ¶¶ [0081], [0093]-[0106]. For example, Jaye's redirect method would have been useful for providing a streamlined method of registering the user and automatically delivering user profile information to the VCSP that is transparent to the user. Ex. 1026, 6:32-7:6. A POSA would have understood that Jaye's process is "transparent to the user" because the forced transfer (redirect) occurs automatically and does not require the user's attention or input. Ex. 1026, 2:43-49, 5:1-4, 6:57-60. Therefore, implementing Jaye's transparent redirect in the profile registration and delivery process would have reduced potential user confusion by performing the delivery of

user profile information without the need for any user configuration or input. Further, as I noted above, Jaye describes its redirect as one of a variety of conventional (i.e., well-known) techniques for forcing a transfer and it would have been obvious to a POSA to select Jaye's transparent redirect as one of a finite number of conventional techniques for delivering user profile information to a computer system. See Section IV (referring to obviousness rationale (E)).

577. It is also my opinion that other rationales also support my finding that the combination of Baig and Jaye would have been obvious. First, the combination of Baig and Jaye merely involves the use of a known technique to improve similar systems in the same way. See Section IV (referring to obviousness rationale (C)). As I explained above, Baig and Jaye each teach similar systems where user profile information is derived and then delivered to a server (Baig's VCSP 202 and Jaye's enterprise server 16). Ex. 1026, 2:15-3:39, 6:32-7:6, 7:46-57, Figs. 2-3; Ex. 1007, ¶¶ [0038], [0066], [0072], [0093]-[0106], [0114]-[0120], Figs. 14-19. Baig's system describes a website server collecting user information (including user interests and preferences as well as demographic information such as age, gender, and the like) and then provides that information to the VCSP system for use in targeted advertising. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093]-[0106], [0124], Figs. 1-2, 14-19. Similarly, Jaye's system derives user profile information at a local server and then providing that information to another server (e.g., for use in a global

profile that may be used for, among other things, targeted advertising). Ex. 1026, 2:15-3:39, 6:32-7:6.

578. As I discussed above, Jaye's forced transfer of the user information via an HTML redirection allows for the information to be delivered to the other server "transparent[ly] to the user." Ex. 1026, 6:32-7:6. As I previously explained, a POSA would have been motivated to use Jaye's techniques to make the Baig-Costa-Banga690 registration and user profile delivery processes "transparent" to the user in order to reduce potential user confusion by performing the delivery of user profile information without the need for any user configuration or input. For the reasons discussed above, it would have been obvious to a POSA to improve Baig's similar system in a similar way by modifying Baig to include a redirect of the online user interface device as part of delivering the user profile information to Baig's VCSP server.

579. The combination of Baig-Costa-Banga690-Jaye also involves applying a known technique to a known device ready for improvement to yield predictable results. See Section IV (referring to obviousness rationale (D)). The known technique is Jaye's technique of delivering user profile information from one device or server to another via redirection in a manner that is transparent to the user. Ex. 1026, 2:15-3:39, 6:32-7:6. The known device ready for improvement is Baig's system that uses user profile information for certain services, such as targeted

advertising. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093]-[0106], [0124], Figs. 1-2, 14-19. Baig's system does not explicitly describe delivering the user profile information to VCSP in a transparent manner, and thus a POSA would have found Baig's system ready for improvement to eliminate possible user confusion and reduce the amount of user interaction necessary to use Baig's targeted advertising and other community-based services. The predictable result of the combination is Baig's system receiving the user profile information at the VCSP server 224 for the community hotspot via Jaye's HTML redirection.

580. A POSA would have had more than a reasonable expectation of success in making the proposed combination. As I stated above, Jaye's redirect is one of a variety of conventional (i.e., well-known) techniques for forcing a transfer and a POSA would have been familiar with such techniques. Ex. 1026, 6:32-7:6. A POSA would have had the skills, including programming and design skills, and experience, including experience in HTML and other network communication protocols, to carry out the straightforward combinations described above.

1. Dependent Claim 105: "The method of claim 26 wherein automatically electronically delivering comprises, with the computer equipment, redirecting the user's online user interface device to a server of the computer system."

581. Claim 105 of the '260 Patent depends from claim 26 and further requires "wherein automatically electronically delivering comprises, with the computer equipment, redirecting the user's online user interface device to a server of

the computer system." Ex. 1001, claim 105. As discussed above, claim 26 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.3, above.

582. As I discussed above at Section XII.A.3 with respect to claim 26, Baig in view of Costa and Banga690 teaches automatically electronically delivering user profile information from a profile server (Banga690's CR server) to a computer system server (Baig's VCSP server). Ex. 1007, ¶¶ [0052], [0093], [0099]-[0101]; Ex. 1014, [0059]-[0060]. As I described above in the introduction to Section XII.F with respect to Jaye, it would have been obvious to a POSA to further combine Baig-Costa-Banga690 with Jaye such that the user information is automatically delivered to the computer system via an HTML redirect from the users' online user interface device in a manner transparent to the user. Ex. 1026, 2:15-3:39, 6:32-7:6. Such a combination would have been the simple use of a known technique to improve similar systems in the same way, and the application of a known technique (Jaye's transparently delivering profile information) to a device ready for improvement (Baig's targeted advertisement system), as I described in more detail in Section XII.F with respect to the motivations to make the Baig-Costa-Banga690-Jaye combination. The combination with Jaye would have improved Baig-Costa-Banga690's system by automatically performing the delivery of user profile information without the need for any user configuration or input (i.e., transparently)

and reducing the potential for user confusion in completing the registration process with the VCSP.

583. Accordingly, for the reasons described above, Baig-Costa-Banga690-Jaye teaches the additional limitations included in dependent claim 105, and renders claim 105 obvious to a POSA.

2. Dependent Claim 127: "The method of claim 38 wherein automatically electronically delivering comprises, with the computer equipment, redirecting the user's online user interface device to the computer system."

584. Claim 127 of the '260 Patent depends from claim 38 and further requires "wherein automatically electronically delivering comprises, with the computer equipment, redirecting the user's online user interface device to the computer system." Ex. 1001, claim 127. As discussed above, claim 38 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa, and Banga690. See Section XII.A.4, above.

585. I note that, other than their dependencies and a change from "to a server of the computer system" to "to the computer system," claim 127 is otherwise identical to claim 105. The change in language does not alter my opinion because redirection to a server of the computer system also teaches redirection to the computer system. Therefore, it is my opinion that a POSA would have found claim 127 obvious in view of Baig-Costa-Banga690-Jaye for the same reasons as claim 105. See Section XII.F.1, above.

3. Dependent Claim 41: "The method of claim 38 wherein the step of delivering electronic user profile information derived from the online activity comprises, with the computer equipment, redirecting the first user's online user interface device during the first user's accessing of an online site via the first online access IP address."

586. Claim 41 of the '260 Patent depends from claim 38 and further requires "wherein the step of delivering electronic user profile information derived from the online activity comprises, with the computer equipment, redirecting the first user's online user interface device during the first user's accessing of an online site via the first online access IP address." Ex. 1001, claim 41. As discussed above, claim 38 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.4, above.

587. I note that claim 41 is substantially similar to both claims 127 and 105, which I have addressed above at Sections XII.F.1-2. Ex. 1001, claims 105, 127. Claim 41 additionally requires that the redirection of the user's online interface device specifically occurs "during the first user's accessing of an online site via the first online access IP address." Ex. 1001, claim 41. As I previously explained above at the beginning of Section XII.F with respect to the combination of Baig, Costa, Banga690, and Jaye, such a combination would render determining user profile information (such as Jaye's user ID and other profile information) and using HTML redirection of the client device (claimed "user's online interface device") to a separate computer system (e.g., Baig's VCSP 202) obvious to a POSA. As a result

of this redirection, the client device would automatically deliver the determined user profile information appended to the HTML redirect to the computer system (claimed "automatically electronically delivering of user profile information includes redirecting a user's device to [a server of the computer system/the computer system]") as part of Baig's user profile registration process so that the registration and user profile delivery process remained transparent to the user. Ex. 1026, 6:32-7:6; Ex. 1007, ¶¶ [0070], [0081], [0093]-[0106].

588. Baig explains that its user profile registration process includes a user accessing and entering information in a VCSP website. Ex. 1007, ¶¶ [0070], [0093], [0096]. In order to access the VCSP website, the user must connect to the access point 106 to reach the VCSP website. Ex. 1007, ¶¶ [0059], [0068]-[0070], [0093]. As I explained above with respect to claims 1 and 26 at Sections XII.A.1 and XII.A.3, the IP address of the access point 106 at Baig's hotspot is the "first online access IP address." And, because the VCSP's website is an online site, the accessing is "of an online site." Ex. 1007, ¶¶ [0070], [0093], [0096]. Therefore, it would have been clear to a POSA that because the combination's redirect occurs during the user profile registration process when the user accesses and enters information in the VCSP website, the redirection is "during the first user's accessing of an online site via the first online access IP address" as required by claim 41. Ex. 1026, 6:32-7:6; Ex. 1007, ¶¶ [0070], [0081], [0093]-[0106].

589. Accordingly, for the reasons described above, Baig-Costa-Banga690-Jaye teaches the additional limitations included in dependent claim 41, and renders claim 41 obvious to a POSA.

G. GROUNDS L-M: BAIG IN VIEW OF COSTA, ZWICKY, AND HOWCROFT, AND BAIG IN VIEW OF COSTA, BANGA690, AND HOWCROFT

590. Howcroft describes a method for sending targeted advertising data. Ex. 1016, Abstract, ¶¶ [0022]-[0026], [0030]-[0032], [0048]-[0051], [0055], [0066]-[0079], [0083]-[0084], [0088]. In particular, Howcroft describes that targeted advertising may be performed using behavioral information, including information about an individual's search history. Ex. 1016, Abstract, ¶¶ [0022]-[0026], [0030]-[0032]. Specifically, Howcroft describes that "[r]ecent portal search information is added into the end user's advertising insertion database and SSO end user profile (based on monitoring and characterizing data communications in the triple network) to be used for updating the SSO end user profile useful for targeted advertising selection." Ex. 1016, ¶ [0022]-[0026]. Howcroft further describes that "search information may be used for targeting advertisements to the end user's television/STB as well as other end user screens such as personal computers, mobile IP devices and cell phones." Ex. 1016, ¶ [0022]-[0026].

591. It is my opinion that a POSA would have found it obvious to include the search information of Howcroft within the online user activity from which Baig's

user profile information is derived. Ex. 1016, ¶¶ [0022]-[0026], [0030]-[0031], [0072]-[0079].

592. For example, a POSA would have understood that a user's search history is highly indicative of a user's interests (e.g., if the individual searches for travel-related products/services, they are provided with travel-based advertisements), and would therefore have been motivated to further derive Baig's user profile information based on the search information of Howcroft so that advertisements may be better targeted to individuals based on their interests. *Id*. Howcroft's system is similar to Baig's in that both describe providing targeted advertisements based on user profile information. Ex. 1016, Abstract, ¶¶ [0022]-[0026], [0030]-[0032], [0048]-[0051], [0055], [0066]-[0079], [0083]-[0084], [0088]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19. It is my opinion that deriving user interests and preference information from Baig's online activity, including user search information, as taught in Howcroft, would have increased the relevance of advertisements, as including such user search information would provide a more holistic and comprehensive representation of a given user's activities, interests, or the like. Ex. 1016, ¶¶ [0030]-[0032].

593. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to combine Baig with Howcroft in the way that I have described above.

594. It is my opinion that deriving user interests and preference information from Baig's online activity including user search information, as taught in Howcroft, would have involved the mere use of a known technique to improve similar systems in the same way (see Section IV, referring to obviousness rationale (C)). For example, Howcroft describes the known technique of updating a user's preferences based on user search information, which may, e.g., improve an effectiveness of advertisements by increasing their relevance (an improvement). Ex. 1016, ¶¶ [0030]-[0031]. Similar to Howcroft, Baig also describes an electronic advertisement system, configured to use profile information to target specific users for advertisements. Ex. 1016, Abstract, ¶¶ [0022]-[0026], [0030]-[0032], [0048]-[0051], [0055], [0066]-[0079], [0083]-[0084], [0088]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19. Therefore, by applying the technique described in Howcroft, Baig's system would experience an improvement in its targeted advertising capabilities. *Id*. For example, as I described above, including user search information, as taught in Howcroft, within the user profile information used to select advertisements in Baig would have increased the relevance of such advertisements for a given individual, as including

such user search information would provide a more holistic and comprehensive representation of the given individual's activities, interests, or the like. *Id*.

595. In addition to deriving user profile information based on user search histories, Howcroft describes using user viewing information to update preferences for that user. Ex. 1016, ¶¶ [0030]-[0031], [0049]-[0050]. Howcroft describes considering several criteria "to determine advertisement placement or delivery and delivery timing," including a current usage scenario (such as "watching an IPTV show") and "time of day." Ex. 1016, ¶ [0049]. A POSA would have understood that user viewing information would be a useful indication of a user's interests, activities, or the like. Thus, it would have been obvious and a POSA would have been motivated to include Howcroft's viewing information in Baig's user profile so that Baig's advertisements would be better targeted to individuals based on current viewing interests. Ex. 1016, ¶¶ [0030]-[0031], [0049]-[0050]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19.

596. Deriving Baig's user profile information from current viewing interests, as taught in Howcroft, would have been the mere use of a known technique to improve similar systems in the same way. Ex. 1016, ¶¶ [0030]-[0031], [0049]-[0050]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19. Howcroft teaches improving a relevance of

advertisements by updating user preferences (a known technique) using user viewing information. Ex. 1016, ¶¶ [0030]-[0031], [0049]-[0050]. Baig describes an electronic advertisement system, similar to the electronic advertisement system described in Howcroft. Ex. 1016, ¶¶ [0030]-[0031], [0049]-[0050]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19. Therefore, by applying the technique described in Howcroft, Baig's system would experience a similar improvement in its targeted advertising capabilities. *Id*.

597. Furthermore, Howcroft describes various techniques for sending advertisements to selected subscribers, including triggers to automatically send advertisements upon satisfying certain criteria. Ex. 1016, ¶ [0035], [0066]-[0068], [0088]. It would have been obvious and a POSA would have been motivated to apply Howcroft's automated trigger for sending advertisements to Baig's transmission of advertisements so that advertisements can be targeted to individuals in real time, without awaiting a request from an STB and/or otherwise configuring the STB to do so. For example, by providing advertisements in real time, such advertisements may be most effective and timely (as they may be based on real time information and delivered during an optimal viewing window).

598. It is my opinion that directing advertisements, as taught in Baig, based on the automated trigger in Howcroft, would have been the mere use of a known

technique to improve similar systems in the same way. Ex. 1016, ¶ [0035], [0066]-[0068], [0088]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19. For example, Howcroft describes the known technique of performing automated selection and direction of advertisements. Ex. 1016, ¶¶ [0030]-[0031]. In doing so, Howcroft describes an improved advertising system, which both increases advertisement timeliness and relevance despite not requiring a prompt or other user request. *Id*. Baig describes an electronic advertisement system, similar to the electronic advertisement system described in Howcroft. Ex. 1016, ¶¶ [0030]-[0031], [0049]-[0050]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19. Therefore, by applying the technique described in Howcroft, Baig's system would experience a similar improvement in its targeted advertising capabilities

599. In addition, Howcroft describes "SSO subscriber advertising profile settings" defined by an SSO subscriber (e.g., via opt ins or other privacy control settings on their internet browser) that indicate selected user devices that allow advertisements to be received, categories/types of advertising, acceptable advertising formats, privacy settings, and the like. Ex. 1016, ¶¶ [0048], [0055], [0083]-[0084]. Howcroft further describes that such information may be stored and used to determine "appropriate advertisements to target an SSO subscriber at a specific time." Ex. 1016, ¶¶ [0054]-[0055].

600. It would have been obvious and a POSA would have been motivated to use the SSO subscriber advertising profile settings of Howcroft to derive the user profile information of Baig to "increase the relevance of advertisements" and allow for "real-time targeted advertising" For example, Howcroft describes performing "real-time targeted advertising based upon an SSO subscriber's identified preferences as they have entered them under a 'shopping list' or based on their internet behavior," which would "increase the SSO subscriber's interest in watching the advertisements and therefore increase the value of the advertisements to the advertiser." Ex. 1016, ¶¶ [0030]-[0031], [0048], [0054]-[0055], [0083]-[0084]. A POSA would have understood that the proposed combination would have been the mere use of a known technique to improve similar systems in the same way. Howcroft teaches the known technique of storing user defined advertising criteria and using that stored criteria for selecting a targeted advertisement for the associated user , which improves a targeted advertisement system by increasing an advertisement's relevance and by providing those targeted advertisements in real-time. *Id*. Similar to Howcroft, Baig teaches an electronic advertisement system for specifically targeting users based on profile information. Thus, a POSA would have understood that applying Howcroft's technique of storing and using user-defined advertising criteria would have improved Baig's goals of tailored advertising in the same way. Ex. 1016, ¶¶ [0030]-[0031], [0048], [0054]-[0055], [0083]-[0084]; Ex.

1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19.

601. Howcroft also describes the known technique of generating a list of possible advertisements based on various criteria, and using the generated list to select an advertisement. Ex. 1016, ¶¶ [0066]-[0068], [0070]. For example, Howcroft describes improving relevance of advertisements displayed to a user based on an advertising database, which may, e.g., be used to generate the list of possible advertisements described above. *Id*. Similar to Howcroft, Baig also describes an electronic advertisement system, configured to use profile information to target specific users for advertisements. Ex. 1016, Abstract, ¶¶ [0022]-[0026], [0030]-[0032], [0048]-[0051], [0055], [0066]-[0079], [0083]-[0084], [0088]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19. Accordingly, a POSA would have been motivated to apply the teachings of Howcroft to the similar systems described in Baig, the targeted advertising in Baig will be improved. Ex. 1016, ¶¶ [0066]-[0068], [0070].

602. Furthermore, it is my opinion that a POSA would have been motivated to have at least one of Baig's content servers 224 (claimed "computer system") operate independently of a television service provider, as taught in Howcroft, would be obvious to a POSA because such a combination would enable targeted advertisement selection, without the need to share user profile information with a

television subscriber. Furthermore, doing so would avoid sharing user behavioral information and/or user profile information with a television service provider. A POSA would appreciate that at least some benefits of having an independent computer system is that the privacy and security of user profile information may be improved. Further, Howcroft teaches that performing user profiling for targeted advertisements independently of television service providers (a known technique) would be beneficial because such a system would be able to increase relevance of advertising. For example, Howcroft's method would allow advertising selection using accumulated subscriber history (i.e., profile information) across multiple access networks rather than limiting it to any particular television service provider, which would e.g., increase an effectiveness of the advertisements themselves (an improvement). Ex. 1016, ¶¶ [0030]-[0031], [0060]-[0062]. Additionally, having Baig's content server select the advertisement without transmitting the profile information to the television service provider would also alleviate the television service provider from maintaining and storing the universe of profile information of their subscribers. And because Baig also teaches an electronic advertisement system (a similar system) for specifically targeting users based on profile information, applying Howcroft's techniques would have improved Baig's tailored advertising system in the same ways.

603. Furthermore, it is my opinion that a POSA would be motivated to perform targeted selection/transmission of advertisements (as described in Baig), using Howcroft's profiling process, as such profiling would result in a more comprehensive collection of activity data associated with a user. For example, rather than collecting activity data for a user at a single device (or across multiple devices, but without an association between them), only a subset of activity data for a given user may be used in targeted ad selection. For example, in Howcroft, a profiling process (known technique) operates across different devices to compile online activity across these different devices. Ex. 1016, ¶¶ [0032], [0039], [0060]-[0062]. Because these devices are associated before the activity occurs, the activity would be associated with the given user accordingly, thus offering more thorough activity data associated with the given user, which is used to selected targeted advertisements with increased relevance (an improvement). *Id*. Furthermore, since both Baig and Howcroft teach similar systems (electronic advertisement systems that target users based on profile information), it is my opinion that applying Howcroft's techniques would have improved Baig's goals of tailored advertising in the same way. For example, as described above, this associated user activity would provide a more comprehensive perspective of the corresponding user than a subset or isolated portion of the user activity. Having more information about the user's activity would

enable advertisements to be more effectively selected and targeted to the corresponding user.

604. In addition, similar to the device identifiers of Baig, Howcroft describes using device identifiers for managing devices across networks. Ex. 1016, ¶¶ [0060]-[0062]. For example, Howcroft explains that one type of device identification is a product serial number, the use of which is a known method. Ex. 1016, ¶ [0061]. More specifically, Howcroft describes that "unique identifying information obtained from the end user device (e.g. cellular phone number, MAC address, product serial number) may be used to infer SSO credentials." *Id*. This combination of Baig's device identifiers and Howcroft's product serial numbers would have been obvious as the simple substitution of one known element for another to obtain predictable results. See Section IV (referring to obviousness rationale (B)), above. It is my opinion that it would have been obvious to a POSA to use a product serial number, as taught in Howcroft, as a device identifier (as taught in Baig), as doing so would have involved the simple substitution of one known element for another to obtain predictable results. Ex. 1016, ¶ [0061]; Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0023]-[0029], [0039]-[0048], [0059]. A POSA would have expected that the substitution of a product serial number for Baig's device identifiers would have the predicted result of the product serial number being used as a device identifier. Ex. 1016, ¶ [0061]; Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0023]-[0029], [0039]-[0048], [0059]. A

POSA would have been motivated to add an additional method by which a device may be identified to improve the accuracy of device identification while managing devices across networks. *Id*. For example, in the event that a first method of device identification is unsuccessful or incorrect, a second method of device identification (such as the use of product serial numbers as a device identifier) may be used to perform and/or otherwise correct the identification.

605. A POSA would have had more than a reasonable expectation of success in making the proposed combination. Specifically, a POSA would have had the skills, including programming and design skills, and experience, including experience in data communications and programming systems similar to VCSP 202, to carry out the straightforward combinations described above.

1. Dependent Claim 6: "The method of claim 1 wherein the online activity comprises requesting a search."

606. Claim 6 of the '260 Patent depends from claim 1 and further requires "wherein the online activity comprises requesting a search." Ex. 1001, claim 6. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.1.

607. Baig describes selecting a television advertisement (e.g., for delivery to a hotspot). See Section XII.A.1.c; Ex. 1007, ¶¶ [0093], [0099]-[0101], claim 13. As I have previously explained with respect to claim 1, Baig describes selecting the advertisement based on user profile information, geographic information, time,

and/or other information. Ex. 1007, ¶¶ [0058]-[0059], [0093]-[0095], [0099]. The information Baig uses to select the advertisement is derived from the claimed "online activity," as I have explained above at Section XII.A.1.c. Ex. 1007, ¶¶ [0066], [0093], [0099], [0114]-[0120], Figs. 14-19. For example, Baig's Figure 13 shows an illustrative search webpage 1300 that allows a character string to be searched on the VCSP's website. Ex. 1007, ¶ [0111], Fig. 13. Part of this information tracked by Baig's VCSP is time spent on various services, and Baig describes a search service where individuals may search (claimed "requesting a search") the VCSP website through their device. Ex. 1007, ¶¶ [0082], [0119]-[0120], Figs. 13, 19.

608. It is my opinion that a POSA would have combined Howcroft with Baig to track user profile information, including requesting a search. Ex. 1016, Abstract, ¶¶ [0022], [0026], [0030]-[0032], [0067]-[0070]. As I have explained above, Howcroft performs targeted advertising using behavioral information, including information about a user's online searches. Ex. 1016, Abstract, ¶¶ [0022], [0026], [0030]-[0032], [0067]-[0070]; Section XII.G (introduction). In particular, Howcroft describes using behavioral information, including information about an individual's search history, to determine which advertisements to send to a user. Ex. 1016, Abstract, ¶¶ [0022]-[0026], [0030]-[0032]. Thus, Howcroft teaches maintaining behavioral information of a user's online search history ("wherein the online activity comprises requesting a search"). And, as I have explained above in the introduction

to Section XII.G, it would have been obvious to a POSA to combine Howcroft with Baig because doing so was simply the use of Howcroft's known technique of using user search information to update a user's preferences to improve Baig's similar electronic advertisement system for targeting users based on profile information in the same way (increasing the relevance of advertisements provided to the user). Ex. 1016, ¶¶ [0072]-[0079], [0022], [0030]-[0031]; Ex. 1007, ¶¶ [0038], [0052], [0058]-[0061], [0066], [0074], [0081], [0093]-[0101], [0114]-[0120], Figs. 6, 14-19. In the combinations of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft, Baig's user profile would have incorporated Howcroft's behavioral information comprising a user's online search history. Ex. 1016, ¶¶ [0072]-[0079], [0022], [0030]-[0031].

609. Therefore, as shown above, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft each teaches the additional limitations included in dependent claim 6, and renders claim 6 obvious to a POSA.

2. Dependent Claim 85: "The method of claim 61 wherein the online activity comprises requesting a search."

610. Except for their dependencies, claims 6 and 85 are identical. See Ex. 1001, claims 6, 85. Therefore, it is my opinion that claim 85 would have been obvious to a POSA in view of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for substantially the same reasons as claim 6. See Section XII.G.1, above.

3. Dependent Claim 120: "The method of claim 31 wherein the first television advertisement is selected based at least partly on a specific search request, which request has originated from the first online user interface device."

611. Claim 120 of the '260 Patent depends from claim 26 and further requires "wherein the first television advertisement is selected based at least partly on a specific search request, which request has originated from the first online user interface device." Ex. 1001, claim 120. As discussed above, claim 26 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.3. Howcroft teaches the use of search requests in defining user profiles and selecting advertisements based on those profiles.

612. For example, Howcroft describes that the TAMS reviews historic behavior of an SSO subscriber (e.g., did the SSO subscriber recently shop for tickets or hotels on the web or via the phone, or the like). Ex. 1016, ¶ [0067]. Howcroft also describes identifying contextual information, which includes activity in which an SSO subscriber is currently involved, such as "web surfing, chatting, IM, web logging (blogging), telephone calls, etc." Ex. 1016, ¶ [0069].

613. More specifically, Howcroft describes analyzing "user event data," which includes an individual's internet search history, and maintaining this information in a database, which is then be used to select advertisements. Ex. 1016, ¶ [0030]. For example, Howcroft describes that "if a SSO subscriber enters a search for the GM Sierra pick-up, this information may be added to the SSO subscriber's

database so that television advertisements may be sent to the SSO subscriber regarding pick-up trucks or related products." Ex. 1016, ¶ [0030]. Howcroft then describes selecting, based at least in part on this information, an advertisement for the SSO subscriber. Ex. 1016, ¶¶ [0068]-[0070].

614. For example, Howcroft describes tracking historic behavior of an SSO subscriber and identifying contextual information from current SSO subscriber activity. Ex. 1016, ¶¶ [0067], [0069]. Howcroft also describes analyzing "user event data," which includes an individual's internet search history, and maintaining this information in a database. Ex. 1016, ¶ [0030]. Howcroft then selects, based at least in part on this information, an advertisement for the SSO subscriber. Ex. 1016, ¶¶ [0068]-[0070].

615. As I discussed above, it would have been obvious to combine the teachings of Howcroft with those of Baig because a POSA would recognize this combination as the simple use of a known technique to improve similar methods in the same way, as I discussed in further detail above in the introduction to Section XII.G. For example, like Baig, Howcroft is directed to a targeted advertisement system that allows advertisers to target individuals across multiple user devices based on user profile information and/or user activity. Ex. 1016, ¶¶ [0066]-[0070]. In Howcroft, the TAMS system selects an advertisement for an individual based on the different content consumption and online activities of individuals, such as search

activity, as reflected in their user profile information. Ex. 1016, ¶¶ [0066]-[0068]. A POSA would have recognized that such a system is advantageous because it ensures that the particular advertisement selected from all the available advertisements is highly correlated with the individual's interests (for example, if the individual searches for travel-related products/services, the individual is provided with travel-based advertisements). Ex. 1016, ¶¶ [0066]-[0068].

616. Accordingly, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach "wherein the first television advertisement is selected based at least partly on a specific search request, which request has originated from the first online user interface device," as required by claim 120.

617. Accordingly, as shown above, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations included in dependent claim 120, and renders claim 120 obvious to a POSA.

4. Dependent Claim 126: "The method of claim 39 wherein the user profile information derived from the online activity comprises an indication of a search request originating from the online user interface device of the first user."

618. Claim 126 of the '260 Patent depends from claim 39 and further requires "wherein the user profile information derived from the online activity comprises an indication of a search request originating from the online user interface device of the first user." Ex. 1001, claim 126. As discussed above, claim 39 is

taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.33, above.

619. As I have explained above at Sections XII.G.1 and XII.G.3 with respect to claims 6 and 120, Baig in view of Costa, Zwicky, and Howcroft, and Baig in view of Costa, Banga690, and Howcroft teach that the online activity of Baig's devices 102 may be and/or include a search, and using related search request information to improve advertisers' ability to target individuals based on their interests. Ex. 1016, [0072]-[0079], [0022], [0030]-[0031]; Ex. 1007, ¶ [0111]. Specifically, as described in Howcroft, the user profile information is used to "target specific advertising via specific user profile[s]," which includes information about searches conducted from the user's online interface device. Section XII.G.1, above; Ex. 1016, Abstract, ¶¶ [0022], [0026], [0030], [0032]; Ex. 1007, ¶ [0111]. It would have been obvious to a POSA that by combining Baig's system with Howcroft's method of targeting advertisements Baig's system would provide vicinity-based targeted advertising based on user profiles that include Howcroft's information about searches conducted from the user's online interface device. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0111], [0124], Figs. 1-2; Ex. 1016, Abstract, ¶¶ [0022], [0026], [0030]-[0032].

620. Therefore, as shown above, Baig in view of Howcroft (and thus, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft) teaches the

additional limitations included in dependent claim 126, and renders claim 126 obvious to a POSA.

5. Dependent Claim 8: "The method of claim 1 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address."

621. Claim 8 of the '260 Patent depends from claim 1 and further requires "wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address." Ex. 1001, claim 8. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.1, above.

622. This claim discloses selecting an advertisement "from among a plurality of possible television advertisements." Howcroft teaches using various criteria to generate a list of potential advertisements for a subscriber, and then selecting one advertisement from the list to send to a user device. Ex. 1016, ¶¶ [0030]-[0031], [0066]-[0068], [0070].

623. It is my opinion that using criteria to generate a list of potential advertisements and selecting an advertisement for a user from that list, as taught in Howcroft, is the mere use of a known technique to improve similar systems in the

same way, as discussed in the introduction of Section XII.G with respect to the motivation to combine Howcroft with the teachings of Baig.

624. Therefore, as shown above, Baig in view of Howcroft (and thus, Baig in view of Costa, Zwicky, and Howcroft and Baig in view of Costa, Banga690, and Howcroft) teaches the additional limitations included in dependent claim 8, and renders claim 8 obvious to a POSA.

6. Dependent Claim 87: "The method of claim 61 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address."

625. Except for their dependencies, claims 87 and 8 are identical. See Ex. 1001, claims 8, 87. Therefore, it is my opinion that a POSA would have found claim 87 obvious in view of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for the same reasons as claim 8. See Section XII.G.5, above.

7. Dependent Claim 9: "The method of claim 8 wherein the first television advertisement is selected based at least partly on demographic or behavioral attributes included in the user profile information."

626. Claim 9 of the '260 Patent depends from claim 8 and further requires "wherein the first television advertisement is selected based at least partly on demographic or behavioral attributes included in the user profile information." Ex.

1001, claim 9. As discussed above, claim 8 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.14, above.

627. Baig teaches profile information including "age and gender information" and using such demographic information in advertisement selection "to attract more viewers of the advertisements." Ex. 1007, ¶¶ [0096], [0120]. Baig also describes selecting advertisements based on behavioral attributes in the user profile information, such as an amount of time spent by individuals in various services provided by the VCSP. Ex. 1007, ¶ [0119].

628. Therefore, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations included in dependent claim 9, and render claim 9 obvious to a POSA.

8. Dependent Claims 32, 88, and 145

629. Except for their dependencies, claims 9, 32, and 88 are identical. See Ex. 1001, claims 9, 32 and 88. Therefore, it is my opinion that a POSA would have found claims 32 and 88 obvious in view of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for the same reasons as claim 9. See Section XII.G.7, above. Except for their dependencies, claims 9 and 145 are nearly identical, and thus it is my opinion that a POSA would have found claim 145 obvious for substantially similar reasons as claim 9. See Section XII.G.7, above. For example, both claims recite that the user profile information comprise/include demographic attributes.

And, as described above with respect to claim 9, Baig teaches that the user profile information may be collected through a VCSP website using a user's device (the claimed "collected through an Internet site accessed with the online user interface device of the first user"). Ex. 1007, ¶ [0093]. Therefore, it is my opinion that a POSA would have found claim 145's "wherein the user profile information derived from the online activity comprises demographic attributes collected through an Internet site accessed with the online user interface device of the first user" obvious in view of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for substantially the same reasons described above with respect to claim 9's "wherein the first television advertisement is selected based at least partly on demographic or behavioral attributes included in the user profile information." See Section XII.G.7, above.

9. Dependent Claim 10: "The method of claim 1 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the television content viewed at the time the first television advertisement is to be presented by the set-top box."

630. Claim 10 of the '260 Patent depends from claim 1 and further requires "wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the television content viewed at the time the first television advertisement is to be presented by the set-top

box." Ex. 1001, claim 10. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.1.

631. Baig describes advertisements provided to a particular hotspot "in real time" based on the collected user profile information at that access point. Ex. 1007, ¶¶ [0099]-[0101], [0105]-[0106], claim 13. To the extent Baig does not expressly disclose advertisements selected "based at least in part on the television content viewed at the time the first television advertisement is to be presented by the set-top box," Howcroft does. Howcroft describes advertisers sending advertisements to single sign on (SSO) subscriber's internet protocol television (IPTV) displays while a particular television show is streaming. Ex. 1016, ¶ [0050]. Howcroft describes considering several criteria "to determine advertisement placement or delivery and delivery timing for SSO subscribers." Ex. 1016, ¶ [0049]. Howcroft describes determining selection and delivery of advertisements based on a current usage scenario (such as "watching an IPTV show") and "time of day." Ex. 1016, ¶¶ [0049]-[0050].

632. It would have been obvious and a POSA would have been motivated to include the current usage scenario/timing information of Howcroft to the user profile information described in Baig to more specifically target advertisements to individuals in real time based on their activity, interests, and preferences, as discussed in the introduction of Section XII.G with respect to the motivation to

combine Howcroft with the teachings of Baig. Furthermore, as I described above with regard to claim element [1B] it would have been obvious to modify Baig's system to cause a first television advertisement to be directed for presentation to a set-top box (as described in Costa). See Section XII.A.1.c, above.

633. Accordingly, it is my opinion that Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teaches "wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the television content viewed at the time the first television advertisement is to be presented by the set-top box," as required by claim 10.

634. Accordingly, as shown above, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations included in dependent claim 10, and renders claim 10 obvious to a POSA.

10. Dependent Claim 89: "The method of claim 61 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the television content viewed at the time the first television advertisement is to be presented by the set-top box."

635. Except for their dependencies, claims 10 and 89 are identical. Ex. 1001, claims 10, 89. Therefore, it is my opinion that claim 89 would have been obvious to a POSA in view of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for substantially the same reasons as claim 10. See Section XII.G.9, above.

11. Dependent Claim 21: "The method of claim 1 wherein the computer system causes the first television advertisement to be directed without a request for advertisements originating from the user's set-top box."

636. Claim 21 of the '260 Patent depends from claim 1 and further requires "wherein the computer system causes the first television advertisement to be directed without a request for advertisements originating from the user's set-top box." Ex. 1001, claim 21. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.1.

637. Baig describes causing direction of television advertisements automatically and without an individual's input. Ex. 1007, ¶¶ [0012], [0094]-[0101], [0120]; Section XII.A.1.c. For example, Baig describes that "businesses or other entities can advertise online through the VCSP website for a particular hotspot based upon the (i) geographical location of the users, (ii) profile (age/gender) of the users at the hotspot (iii) time of the day." Ex. 1007, ¶ [0099]. To the extent Patent Owner argues that causing "the first television advertisement to be directed without a request for advertisements originating from the user's set-top box" requires explicit prohibition on any requests for advertisements, it is my opinion that that Howcroft provides such teachings.

638. Howcroft explains what was widely known by at least 2006: that television service to a set-top box was available and in at least some cases, used a technology known as IPTV. See Ex. 1016, ¶¶ [0022]-[0034]. Accordingly, a POSA

would have recognized that a set-top box in a coffee shop or other business establishment would have been able to receive streaming television and to display that television programming on an associated television. Ex. 1011, ¶¶ [0007], [0034]-[0036]; Ex. 1016, ¶¶ [0022]-[0034], [0064], [0066], [0073]. The set-top box in the Baig-Costa-Zwicky and Baig-Costa-Banga690 combinations would have been no different. For example, Costa explains that a set-top box may be one device that is connected using IP networking to an access point that allows the STB to access the public Internet. Ex. 1011, ¶¶ [0032], [0036]-[0038]. This IP connection would have allowed the set-top box to receive IPTV streaming as taught in Howcroft, and a POSA would have recognized that capability. Howcroft further discloses that within an IPTV stream, advertisements may be inserted at particular spots (e.g., times) and that those advertisements may be specifically selected based on a user profile. Ex. 1016, ¶¶[0070]-[0071], [0066]-[0067]. In other words, advertising is similarly be targeted within the IPTV environment. This advertisement insertion does not require a request from the user STB. Instead, the advertisements are automatically selected and inserted at the IPTV head-end and simply transmitted to the set-top box as part of the program stream.

639. It would have been obvious to a POSA to have combined Howcroft's technique for delivering ads to set-top boxes without a set-top box request in the Baig-Costa-Zwicky and Baig-Costa-Banga690 combinations. For example, in Baig-

Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft, targeted advertisements may be delivered to the set-top box through an IPTV stream as Howcroft teaches. Such combinations would have caused the set-top box to receive targeted advertisements through streaming programming, e.g., at a designated time slot in a television program, without requesting those advertisements. Accordingly, the delivery of targeted advertisements would be at the advertiser's or content provider's discretion, which may be more desirable to those entities. It is my opinion that these combinations would have been obvious as it would have involved the mere use of a known technique to improve similar systems in the same way. Namely, Howcroft automatically inserts selected advertisements into an IPTV stream (a known technique) to increase the timeliness and/or relevance of advertisements by providing an advertisement during a television program and without requiring a prompt or request from the individual (an improvement) as discussed. Ex. 1016, ¶¶ [0066]-[0071]. And because Baig also teaches an electronic advertisement system (a similar system) for specifically targeting individuals based on profile information, applying Howcroft's technique would have improved Baig's goals of tailored advertising in the same way. For example, Howcroft describes that "SSO subscriber behavioral database information may then be used to select targeted advertisement data types, advertisement types and device types for the subscriber." Ex. 1016, ¶ [0030]. As a particular example, Howcroft describes that "if a SSO subscriber enters

a search for the GM Sierra pick-up, this information may be added to the SSO subscriber's database so that television advertisements may be sent to the SSO subscriber regarding pick-up trucks or related products," and "[t]he IPTV service provider network may then target specific advertising via [a] specific user profile." *Id*. By combining this automated advertisement insertion in an IPTV programming, as taught by Howcroft, to the targeted advertising system of Baig, the relevance of advertisements to the intended recipient will be increased e.g., by provided targeted advertisements during a television program and in a more timely manner, therefore increasing "the value of the advertisements to the advertiser." Ex. 1016, ¶¶ [0031], [0070]-[0071].

640. Howcroft also describes using triggers to automatically send advertisements upon satisfying certain criteria. Ex. 1016, ¶¶ [0035], [0066]-[0068], [0088]. It would have been obvious to for a POSA to apply Howcroft's automated trigger for sending advertisements to Baig's transmission of advertisements so that advertisements can be targeted to individuals in real time, without awaiting a request from a set-top box and/or otherwise configuring the set-top box to do so. Ex. 1016, ¶¶ [0035], [0066]-[0068], [0088]; Ex. 1007, ¶¶ [0012], [0094]-[0101], [0120]. For example, this would reduce delays with selecting and providing such advertisements (caused by waiting for the request such advertisements), thus furthering Baig's goal of providing the most effective targeted advertising possible.

641. For example, as I described above, directing advertisements, as taught in Baig, by inserting the advertisement in an IPTV stream and/or using the automated trigger in Howcroft, would have been the mere use of a known technique to improve similar systems in the same way. See introduction to Section XII.G; Ex. 1016, ¶¶ [0035], [0066]-[0068], [0088]; Ex. 1007, ¶¶ [0012], [0094]-[0101], [0120]. For example, Howcroft teaches automatically selecting and directing advertisements (a known technique) to increase the timeliness and/or relevance of advertisements without requiring a prompt or request from the individual (an improvement) as discussed. Ex. 1016, ¶¶ [0030]-[0031]. And because Baig also teaches an electronic advertisement system (a similar system) for specifically targeting individuals based on profile information, applying Howcroft's technique would have improved Baig's goals of tailored advertising in the same way. By combining this automated advertisement selection and direction, as taught by Howcroft, to the targeted advertising system of Baig, the relevance of advertisements to the intended recipient will be increased e.g., by provided targeted advertisements in a timelier manner while profile information is more up-to-date, therefore increasing "the value of the advertisements to the advertiser." Ex. 1016, ¶ [0031].

642. Accordingly, it is my opinion that the combinations of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach "wherein the computer system causes the first television advertisement to be directed without a

request for advertisements originating from the user's set-top box," as required by claim 21.

643. Accordingly, as shown above, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations in dependent claim 21, and render claim 23 obvious to a POSA.

12. Dependent Claim 100: "The method of claim 61 wherein the computer system causes the first television advertisement to be directed without a request for advertisements originating from the user's set-top box."

644. Except for their dependencies, claims 100 and 21 are identical. Ex. 1001, claims 21, 100. Therefore, it is my opinion that a POSA would have found claim 100 obvious for the same reasons as claim 21. See Section XII.G.11, above.

13. Dependent Claim 23: "The method of claim 1 wherein only advertisements satisfying criteria selected by each user are directed to the set-top box of that user."

645. Claim 23 of the '260 Patent depends from claim 1 and further requires "wherein only advertisements satisfying criteria selected by each user are directed to the set-top box of that user." Ex. 1001, claim 23. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.1.

646. As I discussed above with regard to claim element [1B], Baig-Costa-Zwicky and Baig-Costa-Banga690 teach causing an advertisement to be directed to a set top box for presentation. See Section XII.A.1.c, above. To the extent that Baig

does not expressly disclose "only advertisements satisfying criteria selected by each user are directed to the set-top box of that user," Howcroft does. Howcroft describes an SSO subscriber defining (e.g., via opt ins or other privacy control settings on their internet browser) "SSO subscriber advertising profile settings." Ex. 1016, ¶¶ [0048], [0055], [0083]-[0084]. In Howcroft, defining these profile settings includes indicating selected user devices through which an SSO subscriber allows advertisements to be received, what categories/types of advertising are received, acceptable advertising formats, privacy settings, or the like. Ex. 1016, ¶¶ [0048], [0055], [0083]-[0084]. Howcroft further describes storing such information and using this information to determine "appropriate advertisements to target an SSO subscriber at a specific time." Ex. 1016, ¶ [0055].

647. It is my opinion that it would have been obvious and a POSA would have been motivated to use the SSO subscriber advertising profile settings of Howcroft to derive the user profile information of Baig to "increase the relevance of advertisements" in the proposed combinations by allowing users to set their own criteria, as this would have been the mere use of a known technique to improve similar systems in the same way. Ex. 1016, ¶ [0031]; See Section XII.G, above. For example, Howcroft teaches storing user defined advertising criteria (i.e., a known technique) in order to increase relevance of advertising and/or provide such advertising in real time (i.e., an improvement) as discussed. Ex. 1016, ¶¶ [0030]-

[0031]; See Section XII.G, above. And because Baig also teaches an electronic advertisement system (i.e., a similar system) for specifically targeting individuals based on user profile information, it is my opinion that applying Howcroft's technique would have improved Baig's goals of tailored advertising in the same way. See Section XII.G, above.

648. Accordingly, it is my opinion that the combination of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teaches that "only advertisements satisfying criteria selected by each user are directed to the set-top box of that user," as required by claim 23. Accordingly, as shown above, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations in dependent claim 23, and render claim 23 obvious to a POSA.

14. Dependent Claim 102: "The method of claim 61 wherein only advertisements satisfying criteria selected by each user are directed to the set-top box of that user."

649. Except for their dependencies, claims 23 and 102 are identical. Ex. 1001, claims 23, 102. Therefore, it is my opinion that claim 102 would have been obvious to a POSA over Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for the same reasons as claim 23. See Section XII.G.13, above.

15. Dependent Claim 51: "The method of claim 1 wherein the set-top box is further indicated by a set-top box identifier that includes a device serial number or a portion thereof."

650. Claim 51 of the '260 Patent depends from claim 1 and further requires "wherein the set-top box is further indicated by a set-top box identifier that includes a device serial number or a portion thereof." Ex. 1001, claim 51. As discussed above, claim 1 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa, and Banga690. See Section XII.A.1.

651. As I previously explained with respect to claim 1 at Section XII.A.1, both Baig-Costa-Zwicky and Baig-Costa-Banga690 describe device identifiers. Baig-Costa-Zwicky describes using IP addresses and port numbers as device identifiers. Ex. 1007, ¶¶ [0043], [0046], [0049]-[0050]; Ex. 1012, pp. 114-16, Fig. 5-4; Ex. 1013, Abstract, ¶¶ [0004], [0011], [0039], [0046], [0064]. Banga690 (and thus, Baig-Costa-Banga690) describes device records that include device-specific identifiers. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. For example, Banga690 describes using identifiers such as a MAC address, IMEI identity, IMSI, and/or other identifiers to track devices across networks. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059].

652. To the extent that Banga690 does not explicitly teach the use of device serial numbers in its device records, this is taught in Howcroft. Howcroft specifically states that a type of device identification used to manage devices across

networks is a product (i.e., device) serial number. Ex. 1016, ¶¶ [0061]-[0062]. As I previously explained at the introduction to Section XII.G with respect to the motivation to make the Howcroft combinations, it would have been obvious to a POSA to combine Howcroft with Baig-Costa-Zwicky and Baig-Costa-Banga690 such that the device identifiers (e.g., Baig-Costa-Zwicky's IP addresses and port numbers and Baig-Costa-Banga690's device records including MAC addresses) would include Howcroft's product serial number as a means of identifying known devices across networks. As Howcroft explains, its product serial number can be used to identify the device and infer user credentials, which would have benefited the Baig-Costa-Zwicky and Baig-Costa-Banga690 systems by, for example, helping to quickly identify a user and assisting with determining what targeted advertisements to provide the user. Ex. 1016, ¶ [0061]. In the proposed combination, Howcroft's product serial number would have been used, alone or in conjunction with the device identifiers of Baig-Costa-Zwicky and Baig-Costa-Banga690, as a device identifier to infer user credentials and improve the accuracy of device identification when managing devices across networks by providing a device identifier that remains constant across any network.

653. Accordingly, as shown above, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations included in dependent claim 51, and render claim 51 obvious to a POSA.

16. Dependent Claims 67, 113, and 133

654. Except for their dependencies, claims 51 and 113 are identical. See Ex. 1001, claims 51, 113. Except for their dependencies, claims 67 and 133 are substantially identical to claim 51. See Ex. 1001, claims 67 and 133. The only difference is the insubstantial wording change from "wherein the set-top box is further indicated by" (claim 51) to "wherein the set-top box identifier includes" (claims 67, 133). It is my opinion that my analysis for claim 51 is applicable to these claims. Therefore, it is my opinion that claims 67, 113, and 133 would have been obvious to a POSA in view of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for the same reasons as claim 51. See Section XII.G.15, above.

17. Dependent Claim 55: "The method of claim 1 wherein the first online access IP address and the set-top box IP address are associated before the online activity occurs."

655. Claim 55 of the '260 Patent depends from claim 1 and further requires "wherein the first online access IP address and the set-top box IP address are associated before the online activity occurs." Ex. 1001, claim 55. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.1.

656. As I previously discussed above at Section XII.A.55, it is my opinion that claim 55 is taught by Baig in view of Costa and Zwicky and Baig in view of Costa and Banga690. Howcroft also teaches "wherein the first online access IP

address and the set-top box IP address are associated before the online activity occurs."

657. As I set forth above with respect to the motivations to combine Howcroft with Baig-Costa-Zwicky and Baig-Costa-Banga690, Howcroft describes a "profiling process" that resides in an IP network ("specifically in the routing framework providing Internet access"). Ex. 1016, ¶¶ [0039], [0061]; See Section XII.G. For example, this profiling process "monitors an SSO subscribers' end user devices event data used to access the platforms and networks and stores the access event devices data in an Internet profiling database 204." Ex. 1016, ¶ [0039]. For example, the process uses SSO credentials to associate different user devices (such as a set top box, online access devices (e.g., mobile phones, laptops, personal computers, or the like), or the like) on a subscriber by subscriber basis. Ex. 1016, ¶¶ [0031]-[0032], [0039], [0061]. In this combined system, activity data that occurs on a device is tracked after a login request is received from that given device (e.g., after a device that is connected to Baig's hotspot access point, which electronically associates devices). *Id*. Specifically, online activity and/or other communications for a given subscriber (monitored and/or otherwise collected across any of that subscriber's associated devices) are stored in association with that subscriber. *Id*. For example, Howcroft describes storing "surfing history, traffic characteristics, port

usage, etc. with which to monitor activities by the SSO subscriber." Ex. 1016, ¶ [0061].

658. As I have previously explained in the introduction of Section XII.G with respect to the motivations to combine Howcroft with Baig-Costa-Zwicky and Baig-Costa-Banga690 it would have been obvious and a POSA would have been motivated to implement the functions of Howcroft's profiling process as another way of tracking user activity data as such tracking provides a more comprehensive activity dataset associated with a user. See introduction to Section XII.G, above. For example, in Howcroft, a profiling process (known technique) operates across different devices to compile online activity across these different devices. Ex. 1016, ¶¶ [0031]-[0032], [0039], [0060]-[0062]; see Section XII.G, above. Because these devices are associated before the activity occurs, the activity would be associated with the given user accordingly, thus offering more thorough profile information associated with the given user, which is used to select targeted advertisements with increased relevance (an improvement). *Id*. Furthermore, since both Baig and Howcroft teach similar systems (electronic advertisement systems that target users based on profile information), it is my opinion that applying Howcroft's techniques would have improved Baig's goals of tailored advertising in the same way.

659. It is also my opinion that combining the systems of Baig and Howcroft would require only simple network-based design knowledge and programming

modifications that would be well within the ordinary level of skill in the art for a POSA. It is thus my opinion that a POSA would perceive a reasonable expectation of success in combining the systems of Howcroft and Baig.

660. Accordingly, as shown above, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations included in claim 55, and render claim 55 obvious to a POSA.

18. Dependent Claims 76, 117, and 142

661. Except for their dependencies, claims 55, 76, 117, and 142 are identical (claim 117) or nearly identical but for the change from "first online access IP address/set-top box IP address" to "online user interface device identifier/set-top box identifier" (claims 76, 142). See Ex. 1001, claims 55, 76, 117, and 142. It is my opinion that my analysis for claim 55 is applicable to claims 76, 117, and 142. Therefore, it is my opinion that a POSA would have found claims 76, 117, and 142 obvious for the same reasons in view of Baig in view of Costa, Zwicky, and Howcroft, and Baig in view of Costa, Banga690, and Howcroft as claim 55. See Section XII.G.17, above.

19. Dependent Claim 59: "The method of claim 1 wherein: (i) the computer system is under control of an entity that operates independently of a provider of television service to each of the multitude of users through the corresponding set-top box; and (ii) the computer system causes the first television advertisement to be directed in part (b) without transmitting user online behavioral profile information to the provider of television service."

662. Claim 59 of the '260 Patent depends from claim 1 and further requires "wherein: (i) the computer system is under control of an entity that operates independently of a provider of television service to each of the multitude of users through the corresponding set-top box" (claim element [59A]), and "(ii) the computer system causes the first television advertisement to be directed in part (b) without transmitting user online behavioral profile information to the provider of television service" (claim element [59B]). Ex. 1001, claim 59. As discussed above, claim 1 is taught by Baig-Costa-Zwicky and Baig-Costa-Banga690. See Section XII.A.1.

663. A POSA would recognize that the systems of Baig would operate independently of a television service provider, as no details of such as television service provider are described in Baig. Further, Howcroft teaches details of a television service provider independent of its computer system. Howcroft describes a "profiling process" that resides in an IP network ("specifically in the routing framework providing Internet access"). Ex. 1016, ¶ [0061]. The profiling process is used by Howcroft's TAMS to obtain product interest information for each SSO

subscriber and is "capable of receiving SSO subscriber event data indicating SSO subscriber surfing history from independent network service providers, including … IPTV." Ex. 1016, ¶ [0060]. In Howcroft, different networks are operated by different independent network service providers. Ex. 1016, ¶ [0062]. Accordingly, subscriber history is compiled for multiple different end user devices using information obtained across such different networks. *Id*. Howcroft's TAMS associates devices and causes advertisements to be sent based on user profile information independently of a service provider (as recited in claim element [59A]). Without transmitting any profile information, Howcroft's TAMS selects an advertisement and directs it to a target device. Ex. 1016, ¶¶ [0068]-[0071], Figs. 2-3. Such selection of the advertisement is performed by the Targeted Advertising Selection System (TASS) of the TAMS based on profile information input into the TASS. *Id*. As I described further above with regard to claim elements [59A], [81A], [123A], and [149A], the computer system operates independently of television service providers in the combined system. Ex. 1016, ¶¶ [0068]-[0071], Figs. 2-3. For example, the TASS generates a list of potential advertisements to be sent based on device information, advertiser information, a product interest correlation score for the user, advertiser bid process, viable formats based on device characteristics, historical behavior, contextual information, and/or other information. *Id*. The

TAMS then selects an advertisement from the list, and presents it to the target device accordingly. Ex. 1016, ¶ [0070].

664. As for directing the advertisement without transmitting profile information to a television service provider, Howcroft's system "automatically calculates a product interest correlation score (PICS) and recommends and/or selects an advertisement," and sending "a selected advertisement to a selected SSO subscriber end user device based on the SSO subscriber". Ex. 1016, ¶ [0035]. Such a scenario includes, for example, "location" or "activity," and occurs without sending profile information to a television service provider. *Id.* In some instances, the selection and sending of the advertisements may be based on an automated trigger, set to send advertisements to subscribers where a PICS exceeds a predefined a threshold level and where a current location is less than a threshold distance from a specified location (again, without sending profile information to a service provider). Ex. 1016, ¶¶ [0067]-[0071], [0088].

665. As I described above in the introduction of Section XII.G with respect to the motivation to make the combinations with Howcroft, having Baig's content server operate independently of Howcroft would have been obvious to a POSA. For example, such a combination would have enabled targeted advertisement selection, without the need to share user profile information with a television subscriber. Likewise, a POSA would have been motivated to perform Baig's targeted selection

and transmission of advertisements using Howcroft's techniques that operate independent of a television service provider, as doing so would avoid sharing user behavioral information and/or user profile information with a television service provider. See introduction to Section XII.G, above. A POSA would recognize that restricting the information provided to other entities would enhance the security of that information as well as help maintain privacy of the user.

666. Accordingly, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teaches that "the computer system is [under control of/controlled by] an entity that operates independently of a provider of television service to each of the multitude of users through the corresponding set-top box" and that the first television advertisement is directed "without transmitting [or causing to be transmitted] user online behavioral profile information to the provider of television service."

667. Therefore, it is my opinion that Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach "wherein: (i) the computer system is under control of an entity that operates independently of a provider of television service to each of the multitude of users through the corresponding set-top box; and (ii) the computer system causes the first television advertisement to be directed in part (b) without transmitting user online behavioral profile information to the provider of television service," as required by claim 59.

668. Accordingly, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations included in dependent claim 59, and render claim 59 obvious to a POSA.

20. Dependent Claims 81, 123, and 149

669. Except for their dependencies and some insubstantial wording changes, claims 59, 81, 123, and 149 are identical. Ex. 1001, claims 59, 81, 123, and 149. It is my opinion that my analysis for claim 59 is applicable to these claims. Therefore, it is my opinion that claims 81, 123, and 149 would have been obvious to a POSA in view of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for the same reasons as claim 59. See Section XII.G.19, above.

21. Dependent Claim 60: "The method of claim 59 wherein the online access and set-top box IP addresses are associated in part (a), and the first television advertisement is caused to be directed in part (b), without receiving personally identifiable information from the provider of television service."

670. Claim 60 of the '260 Patent depends from claim 1 and further requires "wherein the online access and set-top box IP addresses are associated in part (a), and the first television advertisement is caused to be directed in part (b), without receiving personally identifiable information from the provider of television service." Ex. 1001, claim 60. As discussed above, claim 59, is taught by Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft.

671. As discussed for claim 2, Baig teaches that neither the electronic association (e.g., a list 606 of website 600) nor the profile information includes personally-identifiable information. Section XII.A.5, above; Ex. 1007, ¶¶ [0061], [0066], [0076], [0081], [0093]-[0101], [0124]; Ex. 1001, 6:11-20 (identifying examples of non-personally-identifiable information). For example, Baig describes profile information including age, gender, city/state/country of residence, hobbies, online sites visited, and/or other information, none of which is personally-identifiable information. *Id*. In Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft, the non-personally-identifiable profile information is then used in causing a first television advertisements to be directed to the set-top box. Section XII.A.1.c, above*;* Ex. 1007, ¶¶ [0093], [0096]-[0101], Fig. 22, claim 13; Ex. 1011, ¶¶ [0006], [0035]-[0036], Fig. 1; Ex. 1016, ¶¶ [0070]-[0071], [0067].

672. Thus, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach directing the advertisements and associating the IP addresses "without receiving personally identifiable information from the provider of television service."

673. Therefore, it is my opinion that the combinations teach "wherein the online access and set-top box IP addresses are associated in part (a), and the first television advertisement is caused to be directed in part (b), without receiving

personally identifiable information from the provider of television service" as required by claim 60.

674. Accordingly, as shown above, Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft teach the additional limitations included in dependent claim 60, and renders claim 60 obvious to a POSA.

22. Dependent Claims 82, 124, and 150

675. Except for their dependencies, claims 60, 82, 124, and 150 or nearly identical but for the change from "to be directed in part (d)" to "to be directed in part (b)" (claim 124), "online access and set-top box IP address" to "online user interface device identifier and the set-top box identifier" (claim 150) or from "online user interface device identifier and the set-top box identifier" to "online access and set-top box IP addresses" (claim 82). It is my opinion that my analysis for claim 60 is applicable to claims 82, 124, and 150. Therefore, it is my opinion that a POSA would have found claims 82, 124, and 150 obvious in view of Baig-Costa-Zwicky-Howcroft and Baig-Costa-Banga690-Howcroft for the same reasons as claim 60. See Section XII.G.21, above.

H. GROUND N: BAIG IN VIEW OF COSTA, BANGA690, AND SMITH

676. Baig is directed to providing vicinity based community services (such as providing targeted advertisements) to individuals associated with various access points. The goal of targeted advertisements is to most effectively tailor

advertisements toward their recipients. To do this most effectively, advertisements would be selected based on user profile information (as described in Baig), which may be associated with a device identifier (as described in Baig and Banga690).

677. In order to make the device identification process as seamless and effective as possible, a POSA would have been motivated to implement cookies (as described in Smith) as the device identifiers within the Baig-Costa-Banga690 system, so as not to require registration and/or authentication of an individual in order to identify their corresponding user profile information. Ex. 1014, ¶¶ [0023]-[0024], [0029], [0039]; Ex. 1021, ¶¶ [0006], [0011]-[0014], [0018], [0035], [0038]. Additionally, Smith recognizes that the use of such cookies is well known, as is the method of cookie-based device identification, and their use in the combined system of Baig-Costa-Banga690, as is described further below. Ex. 1021, ¶¶ [0006], [0011]-[0014], [0018], [0035], [0038]. Similarly, the use of such cookies would improve Baig's goal of including advertisements in existing content, and their incorporation would involve merely routine understanding of device identification protocols (as is also discussed further below).

678. It is therefore my opinion that several rationales support my finding that the combination of Baig-Costa-Banga690 and Smith would have been obvious. First, the combination Baig-Costa-Banga690-Smith merely combines known prior art elements according to known methods to yield predictable results. See Section

IV (referring to obviousness rationale (A)). For example, a first known element comprises the the device identifiers used to retrieve profile information and/or device records in Baig-Costa-Banga690, and a second element comprises the cookie data of Smith (which enables the identification of devices across various communication sessions by network systems). Ex. 1014, ¶¶ [0023]-[0024], [0029], [0039]; Ex. 1021, ¶¶ [0006], [0011]-[0014], [0018], [0035], [0038]. For example, in addition or as an alternative to the device identifiers described in Baig-Costa-Banga690 (such as port numbers and a MAC address, IMEI identity, IMSI, or the like), the device identifier would include the cookie described in Smith. *Id*.

679. These known elements would have been combined according to known methods, such as cookie-based device identification, and more specifically, cookie-based device identification across different communication sessions to yield predictable results (i.e., the identification of a particular device). Ex. 1021, ¶¶ [0006], [0011]-[0014], [0018], [0035], [0038]. This identification is key to retrieving user profile information corresponding to the identified device irrespective of the communication session. Ex. 1021, ¶ [0038].

680. The combinations described above would have provided another type of profile key that the combined systems could utilize for identifying devices without requiring time-consuming authentication measures. As Smith explains, cookies were well-known techniques for identifying devices across communication sessions

without requiring an authentication process. Ex. 1021, ¶¶ [0006], [0035]. Smith also teaches that cookies may be used as a key to retrieve profile information without requiring users to register. Ex. 1021, ¶¶ [0011]-[0014], [0018], [0038]. In Baig-Costa-Banga690, device identifiers are similarly used to retrieve profile information (and/or device records) without requiring user registration. Ex. 1014, ¶¶ [0006], [0043]. Accordingly, using Smith's cookie identification as a device identifier in Baig-Costa-Banga690 to index profile information would have simply replaced one type of profile key with another. It is also my opinion that a system enabled to use a device-specific cookie to identify user profile information and device records would be a predictable to a POSA, given the prevalence of using cookies in this manner as of the alleged invention date.

681. Finally, a POSA would have expected success in combining Smith with Baig-Costa-Banga690 because these combinations merely involve routine understanding of device identification protocols. Ex. 1021, ¶¶ [0006]-[0007] (describing the use of cookies as a common method for performing device identification).

1. Dependent Claim 49: "The method of claim 48 wherein the online user interface device identifier includes a cookie."

682. Claim 49 of the '260 Patent depends from claim 48 and further requires "wherein the online user interface device identifier includes a cookie." Ex. 1001,

claim 49. As discussed above, claim 48 is taught by Baig in view of Costa and Banga690. See Section XII.A.47, above.

683. As I previously explained with respect to claim 1 at Section XII.A.1, Baig-Costa-Banga690's device records are device-specific identifiers which indicate the user's online user interface device. See Section XII.A.1. For example, Banga690 describes using identifiers such as a MAC address, IMEI identity, IMSI, and/or other identifiers to track devices across networks. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059].

684. To the extent that Baig-Costa-Banga690's device identifiers do not explicitly include a cookie, this is taught in Smith. Ex. 1021, ¶¶ [0006], [0015], [0017], [0034], [0038]. In such a scenario, it is my opinion that a POSA would have found it obvious to combine Smith with the Baig-Costa-Zwicky and Baig-Costa-Banga690 systems in the manner I described above such that Smith's cookie data would have been used as, or as part of, the device identifier used to track devices on Baig's access point 106. Ex. 1021, ¶¶ [0006], [0015], [0017], [0034], [0038]. As I discussed above with respect to the motivations to combine Smith with Baig-Costa-Banga690, Smith's cookie identification would have been used as a device identifier to index profile information based on a user's online activity, tracked via the device identifiers, in the combined system. Ex. 1021, ¶¶ [0006], [0015], [0017], [0034], [0038].

685. Accordingly, as shown above, Baig-Costa-Banga690-Smith teach the additional limitations included in dependent claim 49, and render claim 49 obvious to a POSA.

2. Dependent Claims 66, 111, and 132

686. Except for their dependencies, claims 49, 66, 111, and 132 are identical. See Ex. 1001, claims 49, 66, 111, and 132. Therefore, it is my opinion that a POSA would have found claims 66, 111, and 132 obvious in view of Baig-Costa-Banga690-Smith for the same reasons as claim 49. See Section XII.H.1, above.

3. Dependent Claim 50: "The method of claim 48 wherein the online user interface device identifier includes a tag."

687. Claim 50 of the '260 Patent depends from claim 48 and further requires "wherein the online user interface device identifier includes a tag." Ex. 1001, claim 50. As discussed above, claim 48 is taught by Baig in view of Costa and Banga690. See Section XII.A.47, above.

688. As I explained above at Section XII.H.1 with respect to claim 49, it is my opinion that a POSA would have understood Baig in view of Costa, Banga690, and Smith teaches "wherein the online user interface device identifier includes a cookie." It is my opinion that a POSA would have understood that a cookie constitutes a "tag," as required by claim 50. I note that the '260 Patent does not provide an express definition of "tag" and in fact it interchangeably refers to cookies

or tags as examples of the device identifiers. Ex. 1001, 17:40-18:14. Further, the ’260 Patent describes the functionality of a cookie, and then labels the element performing that functionality as a “tag,” (“[t]he CAS then uniquely identifies the STB using a tag it previously placed on the STB”). Ex. 1001, 19:14-15. I also understand that the inventor of the ’260 Patent has elsewhere explained that a cookie is an example of a tag. Ex. 1038, 3:17-23 (’260 inventor explaining that “a cookie is [] one example of a possible tag” and “[a] tag generally is a unique identifier used to mark a person electronically”). As I discussed above, it is my opinion that a POSA would have found it obvious to combine Smith with the Baig-Costa-Banga690 system in the manner I described in the introduction of Section XII.H such that Smith’s cookie data would have been used as, or as part of, the device identifier used to track devices on Baig’s access point 106. Ex. 1021, ¶¶ [0006], [0015], [0017], [0034], [0038]. As explained in further detail above, a POSA would have been motivated to make the Smith combinations for multiple reasons such as, for example, so as not to require registration and/or authentication of an individual in order for the VCSP to identify their corresponding user profile information. Ex. 1021, ¶¶ [0006], [0011]-[0014], [0018], [0035], [0038].

689. Accordingly, as shown above, Baig-Costa-Banga690-Smith teaches the additional limitations included in dependent claim 50, and render claim 50 obvious to a POSA.

4. Dependent Claims 70, 112, and 136

690. Except for their dependencies, claims 50, 70, 112, and 136 are identical. See Ex. 1001, claims 50, 70, 112, and 136. Therefore, it is my opinion that a POSA would have found claims 70, 112, and 136 obvious in view of Baig-Costa-Banga690-Smith for the same reasons as claim 50. See Section XII.H.3, above.

I. GROUNDS O-P: BAIG IN VIEW OF COSTA, ZWICKY, AND MIDDELJANS, AND BAIG IN VIEW OF COSTA, BANGA690, AND MIDDELJANS

691. Middeljans discloses distributing targeted content, profiling users, and providing payment to entities creating and maintaining user profiles. Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058]. More specifically, Middeljans describes "an aggregator arranged for bundling the content according to a segment profile and distributing the content to a receiving device, the receiving device comprising user profile maintenance means for maintaining a user profile, and profile transmitting means for transmitting the user profile to a profiling center, the profiling center being arranged for aggregating user profiles received from plural receiving devices into an aggregated profile, and for making the aggregated profile available to the aggregator for use as the segment profile." Ex. 1023, ¶ [0008]. Accordingly, in Middeljans, the above described profiling center and content aggregator are separate systems. Ex. 1023, Abstract, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054]. Middeljans recognizes that "it makes

good business sense to sell the aggregated profiles to any interested party for a fee," given that "[a]nyone who is in the business of distributing content to a segment of a large user group needs accurate profiles for the people that make up the segment." Ex. 1023, ¶¶ [0058], [0015].

692. It is my opinion that a POSA would have had the skills, knowledge, and motivation to incorporate Middeljans's technique of receiving payment from an advertiser as a result of receiving profile information, and providing payment to a profile center for the profile information into the combination of Baig-Costa-Zwicky and Baig-Costa-Banga690. Specifically, Middeljans's payment would be incorporated into a profiling center such as Banga690's CR server or Baig's VCSP. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2; Ex. 1014, ¶¶ [0028]-[0029], [0036]-[0040], [0053]-[0060]; Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058]. The combination would have been obvious because Baig-Costa-Zwicky, Baig-Costa-Banga690, and Middeljans are all directed to systems that generate user profile information. *Id*. It is my opinion that a POSA would have been motivated to make the Middeljans combinations so that the combined systems of Baig-Costa-Zwicky-Middeljans and Baig-Costa-Banga690-Middeljans receive a payment, at least partially from an advertiser, in exchange for such user profile information (as described in Middeljans) would have been a natural extension of maintaining and

providing user profile information, as it would enable the combinations to monetize the stored user profile information. Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058].

693. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to modify Baig-Costa-Zwicky and Baig-Costa-Banga690 to include the features of Middeljans in the ways that I have described. See Section IV (referring to obviousness rationale C)). For example, as taught by Middeljans, an advertiser would have found it beneficial to pay Banga690's CR server for delivering specific user profiles to Baig's VCSP server that would correspond to specific groups of people. Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0056], [0058]. Further, specifically with respect to the Baig-Costa-Banga690-Middeljans combination, both Banga690's CR server and Middeljans's profiling center are similar because they are run by third parties separate from portions of the system that use user profile information. Ex. 1014, ¶¶ [0028]-[0029], [0036]-[0040], [0053]-[0060]; Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058].

694. Thus, for the reasons described above, a POSA would recognize that this combination would have been nothing more than the use of a known technique (receiving revenue from an advertiser for profile information and paying a profile provider for the profile information as taught by Middeljans) to improve a similar

method (Baig-Costa-Zwicky's and Baig-Costa-Banga690's delivery of user profile information to a computer system for selection of targeted advertisements) in the same way (incentivizing collection and provision of user profile information with payment from advertisers). *Id*. For example, by providing the systems with payments from advertisers, those systems and entities would be motivated to continue providing and improving their profile collection services. Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0056], [0058]. And, with respect to the Baig-Costa-Banga690-Middeljans combination, a POSA would have found the combination even more straightforward because both Banga690's CR server and Middeljans profiling can be run by third parties separate from the rest of the computer system.

695. Furthermore, a POSA would have found it obvious that, in Baig's VCSP system, revenue would be received from an advertiser as a result of providing user profile information to the advertiser, as taught in Middeljans. An advertiser would be motivated to pay for such profile information so that the advertiser could better target specific groups of people, using the techniques of Middeljans. Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0056], [0058]. As discussed above, this combination would have been nothing more than the use of a known technique (Middeljans's advertiser paying a profile provider for delivering user profile information) to improve a similar system (Baig-Costa-Zwicky's and Baig-Costa-

Banga690's systems having profile providers provide data for user profiles useful for targeted advertisements) in the same way (providing monetary incentives to the profile providers). *Id*.

696. A POSA would have had a reasonable expectation in making the proposed combination because the basic programming skills required would have been well within a POSA's skillset.

1. Dependent Claim 25: "The method of claim 1 further comprising paying a revenue amount to a profile provider as a result of using the user profile information in part (b)."

697. Claim 25 of the '260 Patent depends from claim 1 and further requires "paying a revenue amount to a profile provider as a result of using the user profile information in part (b)." Ex. 1001, claim 25. As discussed above, claim 1 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa, and Banga690. See Section XII.A.1.

698. As I explained above with respect to element [1B] at Section XII.A.1.c, Baig in view of Costa and Zwicky, and Baig in view of Costa, and Banga690 teaches that Baig's VCSP directs advertisements to a set-top box at Baig's hotspot. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2. As I previously explained at Section XII.A.28 above with respect to claim 24, Baig discusses a bidding process, which a POSA would have recognized would result in the generation of a revenue. Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0102]-

[0106], Fig. 21. The winner of the bidding process would earn the right to have their advertisements displayed by Baig's VCSP 202 through devices 102 at one or more hotspots. Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0102]-[0106], Fig. 21. A POSA would have understood that the winner of the bidding process would pay an amount (i.e., the amount of their winning bid) to have their advertisements displayed. Because Baig describes its bidding process as being facilitated by VCSP 202, it would have been obvious to a POSA that advertisers who win the bidding process would pay the revenue amount to Baig's VCSP 202 (claimed "paying a revenue amount to a profile provider"). Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0102]-[0106], Fig. 21.

699. I have been asked to consider a scenario where claim 25 requires that the "profile provider" be separate from the computer system. To any extent that Baig does not teach a profile provider separate from its VCSP server and revenue paid from the VCSP to the profile provider, Baig-Costa-Banga690-Middeljans does. For example, as I explained at Section XII.A.3 above with respect to claim 26, it would have been obvious to a POSA that Banga690's CR server is separate from content provider servers. Banga690's CR server receives device records and generates corresponding user profiles that may be used, for example, for targeted advertising. Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0028], [0034], [0041]-[0048], [0059]; See Section XII.A.3, above. For the reasons I explain further below, it is my opinion

that Middeljans discloses providing a payment to a profile provider such as Baig's VCSP 202 or Banga690's CR server.

700. As I explained above with respect to the motivations to combine Middeljans with Baig-Costa-Zwicky's system and Baig-Costa-Banga690's system, Middeljans is related to distributing targeted content, profiling users, and providing payment to entities creating and maintaining user profiles. Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058]. Middeljans collects and maintains user profiles that contain a variety of information—including device information, demographic information, and other information that may be used in targeted marketing campaigns—at a profiling center. Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054]. A POSA would have understood that Middeljans' profiling center is separate from a content server (Middeljans' "content aggregator"). Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054], [0058]. Middeljans also describes providing the collected user profiles to entities in the business of distributing content (e.g., advertisers) to generate revenue. For example, Middeljans describes that the user profiles are valuable to "[a]nyone who is in the business of distributing content to a segment of a large user group needs accurate profiles for the people that make up the segment," and it would make sense to sell them for a fee. Ex. 1023, ¶¶ [0058], [0015].

701. It would have been obvious to a POSA that the "[a]nyone who is in the business of distributing content" referenced by Middeljans would include advertisers, who distribute advertising content. A POSA would also have understood that the fee received by Middeljans profiling center in exchange for selling the user profiles would constitute "revenue" for the profiling center. Ex. 1023, ¶¶ [0058], [0015].

702. As I explained above it would also have been obvious to a POSA to implement Middeljans' technique of providing a payment to a profiling center in exchange for using user profile information with Baig-Costa-Zwicky and Baig-Costa-Banga690. In the combinations, Baig's VCSP 202 and Banga690's CR server, respectively, would generate user profiles for use in targeting advertising in a manner similar to Middeljans's profiling center, and these user profiles would subsequently be sold to advertisers in exchange for a fee (claimed "paying a revenue amount to a profile provider as a result of using the user profile information in part (b)"). Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0028], [0034], [0041]-[0048], [0059]; Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054], [0058]. To the extent that Patent Owner argues the claim requires the profiling center be separate from the computer system, Baig-Costa-Banga690-Middeljans teaches this because the CR server is separate from Baig's VCSP content server(s) (claimed "computer system").

703. Accordingly, as shown above, Baig-Costa-Banga690-Middeljans teaches the additional limitations included in dependent claim 25, and render claim 25 obvious to a POSA.

2. Dependent Claim 104: "The method of claim 61 further comprising paying a revenue amount to a profile provider as a result of using the user profile information in part (b)."

704. Claim 104 of the '260 Patent depends from claim 61 and further requires "paying a revenue amount to a profile provider as a result of using the user profile information in part (b)." Ex. 1001, claim 104. As discussed above, claim 61 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.2, above.

705. I note that, other than their dependencies, claim 104 is identical to claim 25. Therefore, it is my opinion that a POSA would have found claim 104 obvious in view of Baig-Costa-Banga690-Middeljans for the same reasons as claim 25. See Section XII.I.1, above.

3. Dependent Claim 29: "The method of claim 26 further comprising receiving a revenue amount from a proprietor of the computer system as a result of the electronic delivering act."

706. Claim 29 of the '260 Patent depends from claim 26 and further requires "receiving a revenue amount from a proprietor of the computer system as a result of the electronic delivering act." Ex. 1001, claim 29. As discussed above, claim 26 is

taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.3, above.

707. A POSA would have understood that Banga690's CR server teaches the claimed "computer equipment," and that in the combined Baig-Costa-Banga690 system, Banga690's CR server would be separate from the VCSP content server(s) (claimed "computer system"). Further, a POSA would have understood that Banga690's CR server would automatically electronically deliver electronic user profile information to Baig's VCSP content server(s) (claimed "computer system"). See Section XII.A.3, above; Ex. 1014, ¶¶ [0023]-[0024], [0029], [0034]-[0046], [0053]-[0060], Figs. 3, 4.

708. Claim 29 requires "receiving a revenue amount from a proprietor of the computer system as a result of the electronic delivering act." Ex. 1001, claim 29. As I previously explained above at Section XII.I.1 with respect to claim 25, Middeljans teaches paying a profile provider a fee in exchange for using profile information. A POSA combining Baig-Costa-Banga690 with Middeljans would have understood that the proprietor of the computer system (Baig's VCSP server) pays a profile provider or computer equipment (Banga690's CR server) for delivered user profile information in a similar manner to Middeljans' computer system paying a profile provider a fee. See Section XII.I.1, above; Ex.1014, Figs. 2, 3, ¶¶ [0013],

[0028], [0034], [0041]-[0048], [0059]; Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054], [0058].

709. Accordingly, as shown above, Baig-Costa-Banga690-Middeljans teaches the additional limitations included in dependent claim 29, and renders claim 29 obvious to a POSA.

4. Dependent Claim 33: "The method of claim 26 further comprising receiving a revenue amount from a provider of the television advertisement as a result of electronically delivering the user profile information."

710. Claim 33 of the '260 Patent depends from claim 26 and further requires "receiving a revenue amount from a provider of the television advertisement as a result of electronically delivering the user profile information." Ex. 1001, claim 33. As discussed above, claim 26 is taught by Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690. See Section XII.A.3, above.

711. Claim 33 requires 1) that a revenue amount be received from a provider of the television advertisement and 2) that said revenue amount be received "as a result of electronically delivering the user profile information." Ex. 1001, claim 33. As I explained above with respect to claim 26 at Section XII.A.3, Baig in view of Costa and Zwicky, and Baig in view of Costa and Banga690 teaches that Baig's VCSP directs advertisements to a set-top box at Baig's hotspot. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2. At least one of VCSP servers 224 select and deliver advertisements from advertisers that may, for

example, be the winners of a bidding for the opportunity to have Baig's VCSP direct their advertisements to users. Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0102]-[0106], Fig. 21. Therefore, a POSA would have understood that Baig's advertisers are the claimed "provider of the television advertisement," because they provide the television advertisements to be directed to the set-top box by at least one of Baig's VCSP servers 224.

712. A POSA would have further understood that the advertiser that wins the bidding process would pay an amount (i.e., the amount of their winning bid) to have their advertisements displayed. Because Baig describes its bidding process as being facilitated by VCSP 202, it would have been obvious to a POSA that advertisers who win the bidding process would pay the revenue amount to at least one of Baig's VCSP content server(s) responsible for hosting the community services (claimed "computer system"). Ex. 1007, ¶¶ [0011]-[0012], [0054], [0062], [0102]-[0106], Fig. 21. As I further explained above with respect to claim 26, Baig and Baig in view of Banga690 teaches the claimed "computer equipment" (Banga690's CR server) automatically electronically delivering electronic user profile information to the computer system (Baig's VCSP content server(s)). See Section XII.A.3, above.

713. I have been asked to consider a scenario where the aforementioned disclosures do not expressly disclose payment to the computer equipment (Baig's

computer components in Baig-Costa-Zwicky handling profile information collection and management and Banga690's CR server in Baig-Costa-Banga690) as a result of delivery the user profile information. In such a scenario, it is my opinion that a POSA would have been motivated to combine Baig-Costa-Zwicky and Baig-Costa-Banga690 with Middeljans. As I have previously discussed in the introduction to Section XII.I with respect to the motivations to combine Baig and Middeljans, Middeljans discloses a profiling center that collects and maintains user profiles that contain a variety of information, including device information, demographic information, and other information that may be used in targeted marketing campaigns. Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054]. Middeljans's profiling center is analogous to Baig's computer components handling profile management as well as Banga690's CR server 150, which also collects and manages user profile information. Middeljans acknowledges that user profiles "are very valuable to content aggregators, **advertising agencies** and other parties" and that "it makes good business sense for the profiling center 220 to sell the aggregated profiles 221 to any interested party for a fee." Ex. 1023, ¶ [0010] (emphasis added), Abstract, ¶¶ [0008]-[0009], [0015], [0046]-[0052], [0058]. Therefore, it would have been obvious to a POSA that Middeljans teaches an advertiser (e.g., of an advertising agency) (claimed "provider of the television advertisement") paying a profile provider such as in Baig-Costa-Zwicky or Baig-Costa-Banga690 for electronic

delivery of user profiles that are valuable to the advertiser (e.g., specific to a demographic or profile related to the advertiser's products or services). *Id*.

714. As I explained above, it would have been obvious to a POSA to combine Middeljans's systems for payment for delivery of user profile information to a profiling center with the Baig-Costa-Zwicky and Baig-Costa-Banga690 systems. In these combinations, Baig's VCSP profiling computer components (e.g., a component of one of VCSP servers 224) and Banga690's CR server, respectively, would generate user profiles for use in targeting advertising in a manner similar to Middeljans' profiling center. These user profiles would subsequently be sold to advertisers who found the user profile information valuable for use in delivery of specific advertisements to Baig's VCSP server that, for example, target particular users. Ex. 1014, Figs. 2, 3, ¶¶ [0013], [0028], [0034], [0041]-[0048], [0059]; Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054], [0058]; Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2.

715. As I discussed in further detail above in the introduction to Section XII.I, the combination would have simply been the use of a known technique (Middeljans' advertiser paying a profile provider for delivering user profile information) to improve the similar methods of delivering user profile information to a computer system disclosed by Baig-Costa-Zwicky and Baig-Costa-Banga690. The improvement would have provided Baig-Costa-Zwicky's system and Baig-

Costa-Banga690's system with further incentives/benefits to collecting and providing user profile information by providing the systems with payments from advertisers, who would in turn be incentivized to pay for the information because the information would allow advertisers to target ads to specific groups of people. Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0056], [0058]. This more specific targeting would help increase the likelihood of viewer engagement (e.g., viewing additional information about the advertised products or services and/or purchasing the products or services). Without the advertiser incentivizing a profile provider to obtain and deliver profile information, the profile provider would have little to no reason to provide or continue to provide such services and/or improve those services. As I noted above, with respect to the Baig-Costa-Banga690-Middeljans combination, a POSA would have found the combination even further straightforward because both Banga690's CR server and Middeljans profiling can be run by third parties separate from the rest of the computer system.

716. Accordingly, as shown above, Baig-Costa-Zwicky-Middeljans and Baig-Costa-Banga690-Middeljans teach the additional limitations included in dependent claim 33, and render claim 33 obvious to a POSA.

J. GROUND Q: BAIG IN VIEW OF COSTA, BANGA690, MIDDELJANS, AND KONINGSTEIN

717. Like Baig-Costa-Banga690-Middeljans, Koningstein describes a method for targeted advertising. Ex. 1024, ¶¶ [0040]-[0048], [0068], [0079].

Specifically Koningstein discloses a method of delivering targeted advertisements that includes advertisers only paying when a user takes some action. Ex. 1024, ¶¶ [0043]-[0048]. Koningstein's advertisers are only obligated to pay an advertising provider when "some [] monetization event occurs," such as a purchase of an item by a user. Ex. 1024, ¶¶ [0045], [0048]. Thus, it is my opinion that Koningstein teaches a system in which advertisers pay to have their advertisements shown, but only when revenue is generated as a result of presenting the selected advertisement.

718. It is my opinion that a POSA would have the skills, knowledge, and motivation to incorporate Koningstein's payment scheme into the system of Baig-Costa-Banga690-Middeljans. The combination would have been obvious because, like the system of Baig-Costa-Banga690-Middeljans, Koningstein is directed to a method for targeted advertising. Ex. 1024, ¶¶ [0040]-[0048], [0068], [0079]; Ex. 1007, ¶¶ [0093], [0103], [0115]; Ex. 1014, ¶¶ [0028]-[0029], [0036]-[0040], [0053]-[0060]; Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058].

719. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to modify Baig-Costa-Banga690-Middeljans with the teachings of Koningstein. See Section IV (referring to obviousness rationale (C)). A POSA would have been motivated to combine these references so that a given advertiser only pays computer equipment when revenue is generated

(i.e., a "monetization event" occurs) as a result of presenting the selected advertisement. *Id*. For example, as described above at Section XII.I, the system of Baig-Costa-Banga690-Middeljans describes providing the computer equipment with revenue for the delivery of an advertisement. Ex. 1014, ¶¶ [0028]-[0029], [0036]-[0040], [0053]-[0060]; Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058]. As modified by Koningstein, this combination teaches advertisers only providing such a payment when there is a monetization event. Ex. 1024, ¶¶ [0040]-[0048], [0068], [0079]; Ex. 1014, ¶¶ [0028]-[0029], [0036]-[0040], [0053]-[0060]; Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058]. For example, Koningstein would have improved the Baig-Costa-Banga690-Middeljans method of the computer equipment receiving revenue for the delivery act (e.g., a known technique) by providing a payment system that increases the incentive for an advertiser to purchase profile information (e.g., a similar method) and deliver ads that more effectively reach targeted users (e.g., by limiting the financial cost to advertisers by requiring payment only in situations where revenue is generated as a result of the presentation of the advertisements). *Id*.

720. It is also my opinion that other rationales also support my finding that the combination of Baig-Costa-Banga690-Middeljans and Koningstein. For example, the combination of these references merely combines known prior art

elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are 1) the payment of Baig-Costa-Banga690-Middeljans in exchange for user profile information and 2) the selective payment of Koningstein associated with revenue generated as a result of a revenue generation event. Ex. 1024, ¶¶ [0040]-[0048], [0068], [0079]; Ex. 1014, ¶¶ [0028]-[0029], [0036]-[0040], [0053]-[0060]; Ex. 1023, Abstract, ¶¶ [0001], [0008]-[0010], [0012], [0015], [0046]-[0052], [0054], [0058]. These known elements would have been combined according to known methods, such as incentivizing the purchase of user profile information. *Id.* That is, in the proposed combination, Middeljans's payment would be transmitted only in the event that revenue is generated as a result of presenting a given advertisement. *Id*.

721. Finally, the combination yields predictable results, specifically, the payment being submitted only in the event that revenue is generated as a result of presenting a given advertisement. *Id*. A POSA would have found such as result predictable because Koningstein itself describes that "the advertisementprovider 12 is only obligated to pay if the end user meets some performance parameter (e.g., clicks-through the advertisement to the web page target provided by the advertisement provider in affiliation with the particular ad, activates a coupon, becomes a registered user, purchases an item, completes a phone link (in the event

of a wireless/phone hookup), for example)." Ex. 1024, ¶ [0045]. Therefore, the payment scheme in Koningstein would continue to be used in the same manner in the proposed combination. A POSA would have had a reasonable expectation in making the proposed combination because the basic programming skills required would have been well within a POSA's skillset.

1. **Dependent Claim 30: "The method of claim 26 further comprising receiving a revenue amount as a result of the electronic delivering act, wherein the revenue amount is received in response to each instance in which revenue is generated as a result of presenting the selected television advertisement via the set-top box indicated by the set-top box IP address associated with the first online access IP address."**

722. Claim 30 of the '260 Patent depends from claim 26 and further requires "receiving a revenue amount as a result of the electronic delivering act, wherein the revenue amount is received in response to each instance in which revenue is generated as a result of presenting the selected television advertisement via the set-top box indicated by the set-top box IP address associated with the first online access IP address." Ex. 1001, claim 30. As discussed above, claim 26 is taught by Baig in view of Costa, and Banga690. See Section XII.A.3, above.

723. As I have previously explained at Section XII.A.3 above, with respect to claim 26, a POSA would have understood that Banga690's CR server teaches the claimed "computer equipment." Further, a POSA would have found it obvious that in the Baig-Costa-Banga690 combination, Banga690's CR server automatically

electronically delivers electronic user profile information to Baig's VCSP content server(s) (claimed "computer system"). See Section XII.A.3, above; Ex. 1014, ¶¶ [0023]-[0024], [0029], [0034]-[0046], [0053]-[0060], Figs. 3, 4.

724. Claim 30 also requires that the computer equipment receive "a revenue amount as a result of the electronic delivering act, wherein the revenue amount is received in response to each instance in which revenue is generated as a result of presenting the selected television advertisement via the set-top box indicated by the set-top box IP address associated with the first online access IP address." Ex. 1001, Claim 30. As I previously explained above at Section XII.I.1 with respect to claim 25, Middeljans teaches a computer system that pays a profile provider a fee (claimed "revenue amount") as a result of providing user profile information ("electronic delivering act"). Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054], [0058]. Middeljans also describes scenarios where the fee may come from advertisers (e.g., of advertising agencies) who acquire the user profile information, rather than from proprietors of the computer system. Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0058].

725. I have been asked to consider a scenario where the above disclosures do not explicitly show that "the revenue amount is received in response to each instance in which revenue is generated as a result of presenting the selected television advertisement via the set-top box indicated by the set-top box IP address

associated with the first online access IP address," as recited in claim 30. It is my opinion that in such a scenario, a POSA would have combined Koningstein with Baig-Costa-Banga690-Middeljans to teach the limitations of claim 30.

726. Koningstein describes a method of delivering targeted advertisements similar to Baig and Middeljans. Ex. 1024, Abstract, ¶¶ [0022]-[0023], [0039]-[0048]. In Koningstein's method, advertisers only provide a payment for delivery of advertisements when a user takes some kind of revenue-generating action in response to the advertisements. Ex. 1024, ¶¶ [0022]-[0023], [0039]-[0048]. Specifically, Koningstein describes a method in which advertisers are only obligated to pay for delivery of the ads when "some [] monetization event occurs," (i.e., a revenue-generating action such as, for example, purchase of an item by a user).[5] Ex. 1024, ¶¶ [0045], [0048]. Therefore, it would have been obvious to a POSA that Koningstein shows a system in which advertisers are obligated to provide a payment ("revenue amount") for presenting select television advertisements, but only when

[5] As discussed above at Section XII.A.1, Baig-Costa-Banga690 delivers targeted advertisements to one or more devices 102, such as a set-top box, for display. In the example discussed where Costa's set-top box is located in a coffee shop as part of Baig-Costa-Banga690's system, a POSA would have known that revenue-generating events such as user purchases in response to advertisements could be performed through a variety of devices 102, including Costa's set-top box. For example, it was well known that set-top boxes can allow users to make purchases (e.g., based on displayed advertisements) through the set-top box (e.g., via a user interface). Ex. 1042, 1:34-39, 3:52-5:5; Ex. 1043, 6:37-39, 6:50-57, 7:10-15, 9:2-10, 13:10-25; Ex. 1044, Abstract, ¶¶ [0018], [0125].

revenue is also generated as a result of presenting the selected advertisements ("the revenue amount is received in response to each instance in which revenue is generated as a result of presenting the selected television advertisement"). Ex. 1024, ¶¶ [0022]-[0023], [0043]-[0048].

727. As I described above in the introduction to Section XII.J, it would have been obvious to a POSA to combine Koningstein's method of delivering targeted advertisements with Baig in view of Costa, Banga690, and Middeljans. In such a combination, Koningstein's payment method in which advertisers are only obligated to pay in instances where revenue is generated (i.e., a "monetization event" occurs) in response to presentation of advertisements would be used to improve Baig-Costa-Banga690-Middeljans' similar method of providing computer equipment with revenue for the delivery of an advertisement. For example, as discussed in further detail above with respect to the motivations to combine Koningstein with Baig-Costa-Banga690-Middeljans, Koningstein would have improved Baig-Costa-Banga690-Middeljans method of the computer equipment receiving revenue for the delivery act by providing a payment system that increases the incentive for an advertiser to purchase profile information and deliver ads that more effectively reach targeted users (e.g., by limiting the financial cost to advertisers by requiring payment only in situations where revenue is generated as a result of the presentation of the advertisements).

728. Accordingly, as shown above, Baig-Costa-Banga690-Middeljans-Koningstein teaches the additional limitations included in dependent claim 30, and renders claim 30 obvious to a POSA.

2. Dependent Claim 43: "The method of claim 42 wherein the revenue amount is received in response to each instance in which revenue is generated as a result of displaying the selected television advertisement via the set-top box indicated by the set-top box identifier associated with the online user interface device identifier of the first user's online user interface device."

729. Claim 43 of the '260 Patent depends from claim 42 and further requires "wherein the revenue amount is received in response to each instance in which revenue is generated as a result of displaying the selected television advertisement via the set-top box indicated by the set-top box identifier associated with the online user interface device identifier of the first user's online user interface device." Ex. 1001, claim 43. As discussed above, claim 42 is taught by Baig in view of Costa and Banga690. See Section XII.A.29, above.

730. As I have previously explained at Section XII.A.3 above, with respect to claim 26, a POSA would have understood that Banga690's CR server teaches the claimed "computer equipment." Further, a POSA would have found it obvious that, in the Baig-Costa-Banga690 combination, Banga690's CR server automatically electronically delivers electronic user profile information to Baig's VCSP content server(s) (claimed "computer system"). See Section XII.A.3, above; Ex. 1014, ¶¶

[0023]-[0024], [0029], [0034]-[0046], [0053]-[0060], Figs. 3, 4. As I previously explained above at Section XII.I.1 with respect to claim 25, Middeljans teaches a computer system that pays a profile provider a fee (claimed "revenue amount") as a result of providing user profile information ("electronic delivering act"). Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0054], [0058]. Middeljans also describes scenarios where the fee may come from advertisers (e.g., of advertising agencies) who acquire the user profile information, rather than from proprietors of the computer system. Ex. 1023, ¶¶ [0008]-[0010], [0015], [0046]-[0052], [0058].

731. Claim 43 further requires that "the revenue amount is received in response to each instance in which revenue is generated as a result of displaying the selected television advertisement via the set-top box indicated by the set-top box identifier associated with the online user interface device identifier of the first user's online user interface device," which is substantially similar to claim 30's requirement that the computer equipment receive "a revenue amount as a result of the electronic delivering act, wherein the revenue amount is received in response to each instance in which revenue is generated as a result of presenting the selected television advertisement via the set-top box indicated by the set-top box IP address associated with the first online access IP address." Ex. 1001, claims 30, 43. For example, a POSA would have recognized that both claims recite receiving revenue in response to each instance in which revenue is generated as a result of presenting

or displaying the selected television advertisement. Therefore, it is my opinion that a POSA would have understood that Baig-Costa-Banga690-Middeljans-Koningstein teaches the additional limitations included in dependent claim 43 for the same reasons as dependent claim 30. See Section XII.J.1, above.

K. GROUND R: BAIG IN VIEW OF COSTA, BANGA690, AND BANGA633

732. Banga633 discloses a system of tracking user profile information. Ex. 1025, Abstract, ¶¶ [0012]-[0035]. Similar to Baig and Banga690, Banga633 uses the tracked user profile information to provide targeted advertising to users. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2; Ex. 1025, Abstract, ¶¶ [0012]-[0035], [0074], [0096]-[0098], [0119]-[0120], [0139]; Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. To track user profile information, Banga633's system tracks a user device and its online activity. Ex. 1025, Abstract, ¶¶ [0012]-[0035], [0084], [0096]-[0098], [0119]-[0120], [0139]. For example, a "profile information tag (UID) will be transmitted to every destination (website) that is accessed with this device thus enabling the customization of end-user content specific to UID (universal identifier)." Ex. 1025, ¶¶ [0013]-[0022], [0098], [0119]. Therefore, in Banga633's system, "all of the content transmitted to the user (e.g., first data, splash pages, etc.) may be formatted and/or indexed to the specific type of access device utilized by the user." Ex. 1025, ¶ [0119].

733. To the extent that it is argued that a cookie does not teach a tag, it is my opinion that a POSA would have had the skills, knowledge, and motivation to incorporate Banga633's profile information tag into the system of Baig-Costa-Banga690. The combination would have been obvious because Baig, Banga690, and Banga633 are all directed to tracking user profile information for users of particular devices. Ex. 1007, ¶¶ [0042]-[0043], [0054], [0089], [0093], [0095], [0104], [0124], Figs. 1, 2; Ex. 1025, Abstract, ¶¶ [0012]-[0035], [0074], [0096]-[0098], [0119]-[0120], [0139]; Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. As I have previously explained at Section XII.A, Banga690 teaches user specific device identifiers to track the user profile information. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. Modifying Baig-Costa-Banga690's system to include Banga633's profile information tags to enable customization of end-user content (e.g., targeted advertisements) would have been a natural extension of tracking user profile information using specific device identifiers because it would have enabled every destination (e.g., website) accessed by devices 102 via Baig's access point 106 to allow advertisers (e.g., winners of Baig's bidding process) to provide targeted advertisements for the user at each destination. Ex. 1007, ¶¶ [0011]-[0012], [0042]-[0043], [0054], [0062], [0089], [0093], [0095], [0102]-[0106], [0124], Figs. 1, 2, 21; Ex. 1025, Abstract, ¶¶ [0012]-[0035], [0074], [0096]-

[0098], [0119]-[0120], [0139]; Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059].

734. There are a number of teachings, suggestions, and motivations in the prior art that would have led a POSA to modify Baig-Banga690 and combine with Banga633 in the ways that I have described. See Section IV (referring to obviousness rationale (G)). A POSA would have been motivated to combine Baig-Costa-Banga690 and Banga633 in this way to provide the additional benefits of maximizing the potential for advertisers to provide targeted advertisements to Baig's users at hotspot access point 106 and enabling customized content for the user at each destination. For example, by utilizing a profile information tag for user profile information that is sent to every destination a user visits on the Internet through access point 106, advertisers and/or hosts of the destination websites would be able to provide customized content to the user "formatted and/or indexed to the specific type of access device utilized by the user." Ex. 1025, ¶ [0119]; see also *id.*, ¶¶ [0013]-[0022], [0098].

735. It is also my opinion that other rationales also support my finding that the combination of Baig-Costa-Banga690-Banga633 would have been obvious. First, the combination of these references merely combines known prior art elements according to known methods to yield predictable results. See Section IV (referring to obviousness rationale (A)). The known prior art elements are 1) Baig-Costa-

Banga690's device records including device identifiers and the user profiles that the system derives from said device records, and 2) Banga633's user profile tags (serving as an additional or alternative device identifier). Ex. 1025, Abstract, ¶¶ [0012]-[0035], [0074], [0096]-[0098], [0119]-[0120], [0139]; Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. These known elements would have been combined according to known methods, such as Banga690's previously described method of receiving device records that include different types of device-specific identifiers and generating user profile information therefrom. Ex. 1014, ¶¶ [0013], [0023]-[0029], [0041]-[0048], [0059]. That is, in the proposed combination, Banga633's user profile tags would simply be included as another device-specific identifier in Baig-Costa-Banga690-Banga633's system.

736. Additionally, Banga633 teaches a method of generating and storing a device-specific profile tag. Specifically, Banga633 teaches generating a storing a tag (such as a UID) and using that tag (in addition to or as an alternative to MAC IDs) to identify which device is being used to interact with a content provider or system and communicate that information. Ex. 1025, ¶¶ [0084]-[0085], [0090]-[0091], [0095], [0098], [0104], [0119], Fig. 2. For example, Banga633 describes a browser directed by the system to a device and targeting database server in order to acquire profile information including, for example, a UID (tag).

737. Finally, the combination yields predictable results, specifically it yields Banga633's user profile tag (such as a UID) being one of the device identifiers in Baig-Costa-Banga690-Banga633's system. A POSA would have found such a result predictable because, as discussed above, Banga633 itself describes a method of generating and storing a device-specific profile tag such as a UID. Ex. 1025, ¶¶ [0084]-[0085], [0090]-[0091], [0095], [0098], [0104], [0119], Fig. 2. Therefore, Banga633's user profile tags would continue to be used in the same manner in the proposed combination. A POSA would have had a reasonable expectation of success in making the proposed combination because the basic programming skills required would have been well within a POSA's skillset.

1. Dependent Claim 50: "The method of claim 48 wherein the online user interface device identifier includes a tag."

738. Claim 50 of the '260 Patent depends from claim 48 and further requires "wherein the online user interface device identifier includes a tag." Ex. 1001, claim 50. As discussed above, claim 48 is taught by Baig in view of Costa and Zwicky and Baig in view of Costa, and Banga690. See Section XII.A.47, above.

739. As I have previously explained above at Section XII.H.3 with respect to claim 50, it is my opinion that Baig in view of Costa, Zwicky, and Smith and Baig in view of Costa, Banga690, and Smith would render the limitations of claim 50 obvious to a POSA. However, I have been asked to consider a scenario where a cookie, such as that described above at Section XII.H.3, is not an example of a tag

as required by claim 50. In such a scenario, it is my opinion that a POSA would have been motivated to combine Baig-Costa-Banga690-Banga633 as I have described above. In such a combination, Banga633's user profile tag that identifies a specific device would be and/or be included in the claimed "online user interface device identifier," for the reasons I put forth above. As explained in the motivations to make the Banga633 combinations above, Banga633, like Baig and Banga690, is directed to tracking user profile information and providing targeted content (e.g., advertisements) to users through their devices. Ex. 1025, Abstract, ¶¶ [0012]-[0035]. Banga633 describes that a "profile information tag (UID) will be transmitted to every destination (website) that is accessed with this device thus enabling the customization of end-user content specific to UID (universal identifier)." Ex. 1025, ¶¶ [0119], [0013]-[0022] (describing tags such as a geolocation tag and a chronographic tag), [0098]. Banga633 states "all of the content transmitted to the user (e.g., first data, splash pages, etc.) may be formatted and/or indexed to the specific type of access device utilized by the user." *Id.*, ¶ [0119].

740. As I discussed in detail above in the introduction to Section XII.K, a POSA would have been motivated to make the Baig-Costa-Banga690-Banga633 combination. For example, a POSA would have been motivated to make the combination to provide the additional benefits of maximizing the potential for advertisers to provide targeted advertisements to Baig's users at hotspot access point

106 and enabling customized content for the user at each destination. Therefore, it is my opinion that to any extent Baig-Costa-Banga690-Smith does not teach the limitations of claim 50, Baig-Costa-Banga690-Banga633 does.

2. Dependent Claims 70, 112 and 136

741. I note that, other than their dependencies, claims 70, 112 and 136 are identical to claim 50. See Ex. 1001, claims 50, 70, 112, and 136. Therefore, it is my opinion that a POSA would have found claims 70, 112 and 136 obvious in view of Baig-Costa-Banga690-Banga633 for the same reasons as claim 50. See Section XII.K.1, above.

XIII. EVIDENCE OF NON-OBVIOUSNESS

742. It is my understanding that in order for evidence of non-obviousness or secondary considerations to be relevant, there must be a nexus between the claimed invention and the evidence. I am not aware of any evidence of non-obviousness or secondary considerations.

XIV. CONCLUSION

743. All of the statements made in this declaration of my own knowledge are true. All statements made based on information and belief are believed to be true. Further, these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code.

Date: 3/1/2024

David B. Lett

David B. Lett

APPENDIX A

Ex. 1001:	U.S. Pat. No. 7,861,260 ("the '260 Patent")
Ex. 1003:	Curriculum Vitae of Mr. David B. Lett
Ex. 1004:	Certified File History of U.S. Pat. No. 7,861,260
Ex. 1005:	Excerpts from Case Docket of *Meta Platforms Inc. v. AlmondNet Inc. et al.*, IPR2022-00773 (March 28, 2022)
Ex. 1006:	U.S. Pat. App. Pub. No 2007/0283384 ("Haeuser")
Ex. 1007:	Annotated Version of U.S. Pat. App. Pub. No. 2008/0113674 ("Baig")
Ex. 1008:	U.S. Prov. Pat. App. No. 60/858,204 ("Baig Provisional")
Ex. 1009:	Redline document showing differences between Baig (Ex. 1040) and Baig Provisional (Ex. 1008)
Ex. 1010:	--
Ex. 1011:	U.S. Pat. App. Pub. No. 2006/0128364 ("Costa")
Ex. 1012:	Excerpts from E. D. Zwicky et al., *Building Internet Firewalls* (2d ed. 2000) ("Zwicky")
Ex. 1013:	U.S. Pat. App. Pub. No. 2004/0076180 ("Satapati")
Ex. 1014	U.S. Pat. App. Pub. No. 2006/0271690 ("Banga690")
Ex. 1015:	Independent Claim Comparison Chart for U.S. Pat. No. 7,861,260
Ex. 1016:	U.S. Pat. App. Pub. No. 2008/0201731 ("Howcroft")
Ex. 1017:	U.S. Pat. App. Pub. No. 2007/0025306 ("Cox")
Ex. 1018:	Korean Pat. App. Pub. No. 2006-0065969 ("Han")
Ex. 1019:	Certified Translation of Korean Pat. Pub. App. No. 2006-0065969 ("Han")

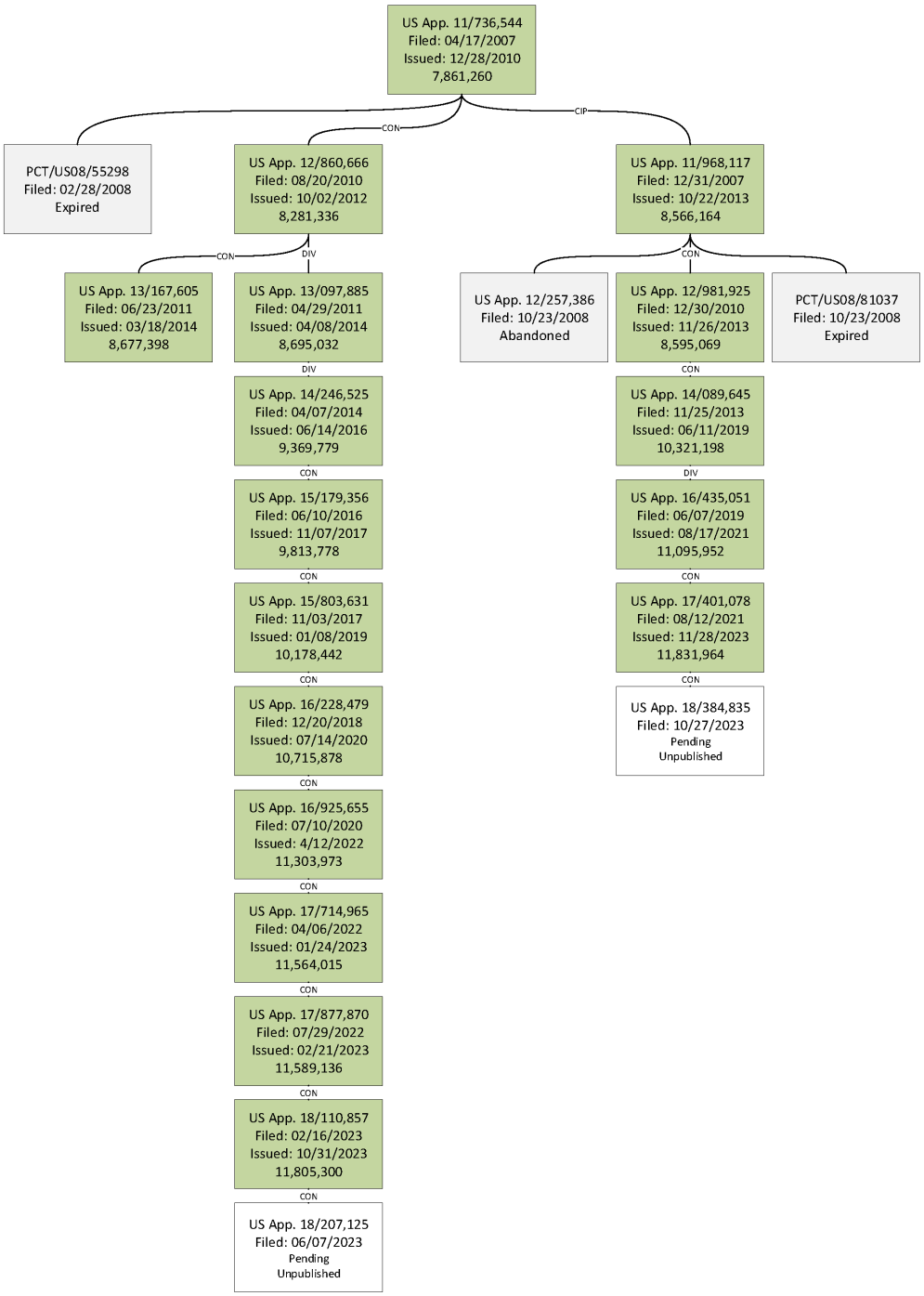
Ex. 1020:	U.S. Pat. App. Pub. No. 2007/0180147 ("Leigh")
Ex. 1021:	U.S. Pat. App. Pub. No. 2003/0083938 ("Smith")
Ex. 1022:	U.S. Pat. App. Pub. No. 2006/0274741 ("Wing")
Ex. 1023:	U.S. Pat. App. Pub. No. 2002/0124050 ("Middeljans")
Ex. 1024:	U.S. Pat. App. Pub. No. 2005/0096980 ("Koningstein")
Ex. 1025:	U.S. Pat. App. Pub. No. 2008/0263633 ("Banga633")
Ex. 1026:	U.S. Pat. No. 6,415,322 ("Jaye")
Ex. 1027:	U.S. Pat. App. Pub. No. 2003/0066085 ("Boyer")
Ex. 1028:	U.S. Pat. App. Pub. No. 2006/0230427 ("Kunkel")
Ex. 1029:	U.S. Pat. App. Pub. No. 2007/0217436 ("Markley")
Ex. 1030:	U.S. Pat. App. Pub. No. 2002/0145621 ("Nguyen")
Ex. 1031:	U.S. Pat. No. 6,543,052 ("Ogasawara")
Ex. 1032:	U.S. Pat. No. 6,282,548 ("Burner")
Ex. 1033:	U.S. Pat. No. 6,036,601 ("Heckel")
Ex. 1034:	U.S. Pat. App. Pub. No. 2005/0096978 ("Black")
Ex. 1035:	Request for Comments: 1631, "The IP Network Address Translator (NAT)" (1994) ("RFC 1631")
Ex. 1036:	Hagel *et al.*, *Net Worth: Shaping Markets When Customers Make the Rules* (1999)
Ex. 1037:	Zeff *et al.*, *Advertising on the Internet* (2nd ed. 1999) ("Zeff")
Ex. 1038:	U.S. Pat. No. 8,280,758 ("the '758 Patent")
Ex. 1039:	Request for Comments: 793, "Transmission Control Protocol" (1981) ("RFC 793")
Ex. 1040:	U.S. Pat. App. Pub. No. 2008/0113674 ("Baig")

Ex. 1041:	Excerpts from *AlmondNet, Inc. v. Freewheel Media, Inc.*, No. 1:23-cv-00220-MN (D. Del.) ("Corresponding District Court Litigation")
Ex. 1042:	U.S. Pat. No. 9,036,981 ("Barton")
Ex. 1043:	U.S. Pat. No. 7,634,789 ("Gerba")
Ex. 1044:	U.S. Pat. App. Pub. No. 2002/0174444 ("Gatto")
Ex. 1045:	U.S. Pat. App. Pub. No. 2002/0083445 ("Flickinger")
Ex. 1046:	U.S. Pat. App. Pub. No. 2008/0040742 ("Howcroft742")
Ex. 1047:	Jakob Nielsen, *Request Marketing* (Oct. 2000), https://www.nngroup.com/articles/request-marketing/
Ex. 1048:	Bettina Fabos, *The Commercial Search Engine Industry and Alternatives to the Oligopoly* (Mar. 2006) EastBound Journal
Ex. 1049:	Susan Young, *Getting the Message: How the Internet is Changing Advertising* (May 16, 2000), https://hbswk.hbs.edu/item/getting-the-message-how-the-internet-is-changing-advertising
Ex. 1050:	U.S. Pat. App. Pub. No. 2002/0099842 ("Jennings")
Ex. 1051:	U.S. Pat. App. Pub. No. 2002/0123928 ("Eldering928")
Ex. 1052:	--
Ex. 1053:	--
Ex. 1054:	Excerpts from Harley Hahn, *The Internet Complete Reference* (2d ed. 1996) ("Hahn")
Ex. 1055:	--
Ex. 1056:	--
Ex. 1057:	Excerpts from Downing *et al.*, *Dictionary of Computer and Internet Terms* (8th ed. 2003)

Ex. 1058:	Excerpts from Newton, *Newton's Telecom Dictionary* (21st ed. 2005)
Ex. 1059:	--
Ex. 1060:	--
Ex. 1061:	U.S. Pat. No. 6,427,170 ("Sitaraman")

APPENDIX B

Family Tree



APPENDIX C

Claims Listing Appendix
US Pat. No. 7,861,260

Designation	Claim Language
Claim 1	
[1pre]	1. A method implemented using a programmed hardware computer system, the method comprising:
[1A]	(a) for each of a multitude of users, with the computer system, electronically associating an online access IP address of the user and a set-top box IP address of that user based on a common IP address, wherein network traffic is routed via the common IP address to both an online user interface device and a set-top box of that user; and
[1B]	(b) using user profile information derived from online activity from a first online user interface device via a first one of the online access IP addresses of the multitude of users, with the computer system automatically causing a first television advertisement to be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box IP address associated with the first online access IP address.
Claim 2	
2	2. The method of claim 1 wherein neither the user profile information in part (b) nor the association between the first online access IP address and its associated set-top box IP address includes personally identifiable information.
Claim 3	
[3A]	3. The method of claim 1: (i) further comprising, using user profile information derived from online activity from a second online user interface device via a second one of the online access IP addresses of the multitude of users, with the computer system automatically causing a second television advertisement to be directed to a second set top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address associated with the second online access IP address,

Designation	Claim Language
[3B]	(ii) wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively.
Claim 4	
4	4. The method of claim 3 wherein neither the user profile information in part (i) nor the association between the second online access IP address and its associated set-top box IP address includes personally identifiable information.
Claim 5	
5	5. The method of claim 1 further comprising storing in the computer system electronic associations between the online access IP addresses and the set-top box IP addresses.
Claim 6	
6	6. The method of claim 1 wherein the online activity comprises requesting a search.
Claim 7	
7	7. The method of claim 1 wherein the first television advertisement is caused to be directed to the set-top box upon first being contacted by the set-top box after the user profile information is derived.
Claim 8	
8	8. The method of claim 1 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address.
Claim 9	
9	9. The method of claim 8 wherein the first television advertisement is selected based at least partly on demographic or behavioral attributes included in the user profile information.
Claim 10	
10	10. The method of claim 1 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the television content viewed at the time the first television advertisement is to be presented by the set-top box.

Designation	Claim Language
Claim 11	
11	11. The method of claim 1 wherein the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and connected to the user's set-top box.
Claim 12	
[12A]	12. The method of claim 1 further comprising: (i) receiving at the computer system an identifier corresponding to the set-top box of the user; and
[12B]	(ii) with the computer system causing the television advertisement to be transmitted only if directed to the set-top box corresponding to the identifier.
Claim 13	
13	13. The method of claim 1 wherein part (a) comprises the act of storing the common IP address, and further comprising updating the common IP address of the user.
Claim 14	
14	14. The method of claim 1 wherein part (a) comprises the act of storing the common IP address, and further comprising periodically updating the common IP address of the user.
Claim 15	
[15A]	15. The method of claim 1 wherein: (i) the user profile information in part (b) includes a list of online access IP addresses corresponding to specific online activities and times and dates corresponding to each of the online activities; and
[15B]	(ii) the computer system causes the television advertisement to be directed to the set-top box of one of the users only if any of the listed online access IP addresses corresponding to the specific online activities and the corresponding dates and times of the online activities match the common IP address assigned to that user and the date and time corresponding thereto.
Claim 16	
16	16. The method of claim 15 wherein part (a) comprises the act of storing the common IP address and dates and times corresponding thereto in the computer system, and further comprising, with the computer system, periodically updating

Designation	Claim Language
	(i) the common IP address and times and dates corresponding thereto or (ii) the list of online access IP addresses corresponding to specific online activities and time and dates corresponding to each of the online activities.
Claim 17	
17	17. The method of claim 1 wherein the computer system is a central ad server and the first television advertisement is received at the central ad server and directed to the set-top box.
Claim 18	
18	18. The method of claim 1 wherein part (b) comprises, with the computer system, directing instructions to a profile provider, to an online site, or to an independent ad server to direct the first television advertisement to the set-top box.
Claim 19	
19	19. The method of claim 1 wherein part (b) comprises, with the computer system, directing instructions to the set-top box to retrieve the first television advertisement from a profile provider, from an online site, or from an independent ad server.
Claim 20	
20	20. The method of claim 1 wherein the computer system causes the first television advertisement to be directed only in response to a request for advertisements originating from the user's set-top box.
Claim 21	
21	21. The method of claim 1 wherein the computer system causes the first television advertisement to be directed without a request for advertisements originating from the user's set-top box.
Claim 22	
22	22. The method of claim 1 wherein the online access IP address of each user is an IP address associated with a modem or router used by that user for online access.
Claim 23	
23	23. The method of claim 1 wherein only advertisements satisfying criteria selected by each user are directed to the set-top box of that user.

Designation	Claim Language
Claim 24	
24	24. The method of claim 1 further comprising receiving a revenue amount as a result of directing the advertisement.
Claim 25	
25	25. The method of claim 1 further comprising paying a revenue amount to a profile provider as a result of using the user profile information in part (b).
Claim 26	
[26pre]	26. A method implemented using computer equipment, the method comprising:
[26A]	(a) with the computer equipment, automatically electronically delivering electronic user profile information to a computer system that includes a server that electronically associates, for each of a multitude of users, an online access IP address of the user and a set-top box IP address of that user based on a common IP address,
[26B]	(b) wherein network traffic is routed via the common IP address for both an online user interface device and a set-top box of that user,
[26C]	(c) wherein delivered user profile information of a first user of the multitude of users (i) is derived from online activity of the first user from a first online user interface device via a first online access IP address and (ii) includes identification of the first online access IP address and the time and date of the online activity, and
[26D]	(d) as a result of which delivery, a first television advertisement can be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box IP address that the server associates with the first online access IP address.
Claim 27	
27	27. The method of claim 26 wherein neither the user profile information delivered in part (a) nor the association between the first online access IP address and its associated set-top box IP address includes personally identifiable information.
Claim 28	
[28A]	28. The method of claim 26:

Designation	Claim Language
	(e) wherein delivered user profile information of a second user of the multitude of users (i) is derived from online activity of the second user from a second online user interface device via a second online access IP address and (ii) includes identification of the second online access IP address and the time and date of the online activity,
[28B]	(f) as a result of which delivery, a second television advertisement, different from the first television advertisement, is directed to a second set-top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box IP address that the server associates with the second online access IP address, for selective presentation via that set-top box, and
[28C]	(g) wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively.
Claim 29	
29	29. The method of claim 26 further comprising receiving a revenue amount from a proprietor of the computer system as a result of the electronic delivering act.
Claim 30	
30	30. The method of claim 26 further comprising receiving a revenue amount as a result of the electronic delivering act, wherein the revenue amount is received in response to each instance in which revenue is generated as a result of presenting the selected television advertisement via the set-top box indicated by the set-top box IP address associated with the first online access IP address.
Claim 31	
31	31. The method of claim 26 further comprising, with the computer equipment, automatically selecting the first television advertisement based on the user profile information.
Claim 32	
32	32. The method of claim 31 wherein the first television advertisement is selected based at least partly on demographic

Designation	Claim Language
	or behavioral attributes included in the derived user profile information.
Claim 33	
33	33. The method of claim 26 further comprising receiving a revenue amount from a provider of the television advertisement as a result of electronically delivering the user profile information.
Claim 34	
34	34. The method of claim 26 further comprising automatically receiving a revenue amount as a result of direction of the first television advertisement.
Claim 35	
35	35. The method of claim 26 further comprising, with the computer equipment, electronically delivering the first television advertisement to the computer system for subsequent direction to the set-top box.
Claim 36	
36	36. The method of claim 26 further comprising, with the computer equipment, directing the television advertisement to the set-top box in response to instructions received from the computer system.
Claim 37	
37	37. The method of claim 26 wherein the step of delivering user profile information comprises delivering the first user online access IP address.
Claim 38	
[38pre]	38. A method implemented using computer equipment, the method comprising:
[38A]	(a) with the computer equipment, automatically electronically delivering electronic user profile information to a computer system that includes a server that electronically associates, for each of a multitude of users, an online user interface device identifier, which indicates an online user interface device of the user, and a set top box identifier, which indicates a set-top box of that user, which electronic association is based on a common IP address,

Designation	Claim Language
[38B]	(b) wherein network traffic is routed via the common IP address for both the online user interface device and the set-top box of that user,
[38C]	(c) wherein delivered user profile information of a first user of the multitude of users (i) is derived from online activity of the first user from the first user's online user interface device via a first online access IP address and (ii) includes identification of the first online IP address and the time and date of the online activity, and
[38D]	(d) as a result of which delivery, a first television advertisement can be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box identifier that the server associates with the online user interface device identifier of a first user's online user interface device.
Claim 39	
39	39. The method of claim 38 further comprising, with the computer equipment, automatically selecting the first television advertisement based on the user profile information.
Claim 40	
40	40. The method of claim 39 wherein (i) the step of delivering electronic user profile information derived from the online activity comprises, with the computer equipment, delivering the first user online access IP address; and (ii) the selection of a television advertisement is based on user profile information that is not delivered to the computer system.
Claim 41	
41	41. The method of claim 38 wherein the step of delivering electronic user profile information derived from the online activity comprises, with the computer equipment, redirecting the first user's online user interface device during the first user's accessing of an online site via the first online access IP address.
Claim 42	
42	42. The method of claim 38 further comprising automatically receiving a revenue amount as a result of direction of the first television advertisement.

Designation	Claim Language
Claim 43	
43	43. The method of claim 42 wherein the revenue amount is received in response to each instance in which revenue is generated as a result of displaying the selected television advertisement via the set-top box indicated by the set-top box identifier associated with the online user interface device identifier of the first user's online user interface device.
Claim 44	
44	44. The method of claim 1 wherein the first online access IP address and the common IP address are the same.
Claim 45	
45	45. The method of claim 1 wherein the first online access IP address and the common IP address differ.
Claim 46	
46	46. The method of claim 45 wherein the first online access IP address and the set-top box IP address are associated based on online access by the first user's online user interface device via a second online access IP address.
Claim 47	
47	47. The method of claim 46 wherein the second online access IP address and the common IP address are the same.
Claim 48	
48	48. The method of claim 45 wherein the first online access IP address and the set-top box IP address are associated based on a correlation between the common IP address and an online user interface device identifier that indicates the user's online user interface device.
Claim 49	
49	49. The method of claim 48 wherein the online user interface device identifier includes a cookie.
Claim 50	
50	50. The method of claim 48 wherein the online user interface device identifier includes a tag.
Claim 51	
51	51. The method of claim 1 wherein the set-top box is further indicated by a set-top box identifier that includes a device serial number or a portion thereof.
Claim 52	

Designation	Claim Language
52	52. The method of claim 1 wherein the set-top box is further indicated by a set-top box identifier that includes a device MAC address or a portion thereof.
Claim 53	
53	53. The method of claim 1 wherein the set-top box is further indicated by a set-top box identifier that includes a username, a pseudonym, or a confirmation number.
Claim 54	
54	54. The method of claim 1 wherein the common IP address is determined by the computer system by matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs.
Claim 55	
55	55. The method of claim 1 wherein the first online access IP address and the set-top box IP address are associated before the online activity occurs.
Claim 56	
56	56. The method of claim 1 wherein the first online access IP address and the set-top box IP address are not associated until after the online activity occurs.
Claim 57	
57	57. The method of claim 1 further comprising, with the computer system, automatically deriving the user profile information from the online activity performed from the first online access IP address.
Claim 58	
58	58. The method of claim 1 further comprising, with the computer system, automatically selecting the first television advertisement based on the user profile information.
Claim 59	
[59A]	59. The method of claim 1 wherein: (i) the computer system is under control of an entity that operates independently of a provider of television service to each of the multitude of users through the corresponding set-top box; and
[59B]	(ii) the computer system causes the first television advertisement to be directed in part (b) without transmitting

Designation	Claim Language
	user online behavioral profile information to the provider of television service.
Claim 60	
60	60. The method of claim 59 wherein the online access and set-top box IP addresses are associated in part (a), and the first television advertisement is caused to be directed in part (b), without receiving personally identifiable information from the provider of television service.
Claim 61	
[61pre]	61. A method implemented using a programmed hardware computer system, the method comprising:
[61A]	(a) for each of a multitude of users, with the computer system, electronically associating an online user interface device identifier, which indicates an online user interface device of the user, and a set-top box identifier, which indicates a set-top box of that user, which electronic association is based on a common IP address, wherein network traffic is routed via the common IP address to both the online user interface device and the set-top box of that user; and
[61B]	(b) using user profile information derived from online activity from the online user interface device of a first user of the multitude of users via a first online access IP address, with the computer system automatically causing a first television advertisement to be directed to a set-top box for presentation via that set-top box, selectively, wherein the set-top box is indicated by the set-top box identifier associated with the online user interface device identifier of the first user's online user interface device.
Claim 62	
62	62. The method of claim 61 wherein the first online access IP address and the common IP address are the same.
Claim 63	
63	63. The method of claim 61 wherein the first online access IP address and the common IP address differ.
Claim 64	
64	64. The method of claim 63 wherein the online user interface device identifier and the set-top box identifier are associated

Designation	Claim Language
	based on online access by the first user's online user interface device via a second online access IP address.
Claim 65	
65	65. The method of claim 64 wherein the second online access IP address and the common IP address are the same.
Claim 66	
66	66. The method of claim 61 wherein the online user interface device identifier includes a cookie.
Claim 67	
67	67. The method of claim 61 wherein the set-top box identifier includes a device serial number or a portion thereof.
Claim 68	
68	68. The method of claim 61 wherein the set-top box identifier includes a device MAC address or a portion thereof.
Claim 69	
69	69. The method of claim 61 wherein the set-top box identifier includes a username, a pseudonym, or a confirmation number.
Claim 70	
70	70. The method of claim 61 wherein the online user interface device identifier includes a tag.
Claim 71	
71	71. The method of claim 61 wherein the online user interface device identifier includes the first online access IP address.
Claim 72	
72	72. The method of claim 61 wherein the set-top box identifier includes the common IP address.
Claim 73	
73	73. The method of claim 61 wherein the set-top box identifier includes at least a portion of the common IP address.
Claim 74	
74	74. The method of claim 61 wherein the set-top box identifier includes a set-top box IP address.
Claim 75	
75	75. The method of claim 61 wherein the common IP address is determined by matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs.

Designation	Claim Language
Claim 76	
76	76. The method of claim 61 wherein the online user interface device identifier and the set-top box identifier are associated before the online activity occurs.
Claim 77	
77	77. The method of claim 61 wherein the online user interface device identifier and the set-top box identifier are not associated until after the online activity occurs.
Claim 78	
78	78. The method of claim 61 further comprising, with the computer system, automatically deriving the user profile information from the online activity performed from the first online access IP address.
Claim 79	
79	79. The method of claim 61 further comprising automatically selecting the first television advertisement based on the user profile information.
Claim 80	
80	80. The method of claim 61 wherein neither the user profile information in part (b) nor the association between the online user interface device identifier and the set-top box identifier includes personally identifiable information.
Claim 81	
[81A]	81. The method of claim 61 wherein: (i) the computer system is controlled by an entity that operates independently of a provider of television service to each of the multitude of users through the corresponding set-top box; and
[81B]	(ii) the computer system causes the first television advertisement to be directed in part (b) without transmitting user online behavioral profile information to the provider of television service.
Claim 82	
82	82. The method of claim 81 wherein the online user interface device identifier and the set-top box identifier are associated in part (a), and the first television advertisement is caused to be directed in part (b), without receiving personally

Designation	Claim Language
	identifiable information from the provider of television service.
Claim 83	
[83A]	83. The method of claim 61: (i) further comprising, using user profile information derived from online activity from the online user interface device of a second user of the multitude of users via a second online access IP address, with the computer system, automatically causing a second television advertisement to be directed to a second set-top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box identifier associated with the online user interface device identifier of the second user's online user interface device, and
[83B]	(ii) wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the online user interface devices of the first and second users, respectively.
Claim 84	
84	84. The method of claim 83 wherein neither the user profile information in part (i) nor the association between the second online user interface device identifier and its associated set-top box identifier includes personally identifiable information.
Claim 85	
85	85. The method of claim 61 wherein the online activity comprises requesting a search.
Claim 86	
86	86. The method of claim 61 wherein the first television advertisement is caused to be directed to the set-top box upon first being contacted by the set-top box after the user profile information is derived.
Claim 87	
87	87. The method of claim 61 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the user profile information derived from the online activity from the first online access IP address.

Designation	Claim Language
Claim 88	
88	88. The method of claim 87 wherein the first television advertisement is selected based at least partly on demographic or behavioral attributes included in the user profile information.
Claim 89	
89	89. The method of claim 61 wherein the first television advertisement is selected from among a plurality of possible television advertisements based at least in part on the television content viewed at the time the first television advertisement is to be presented by the set-top box.
Claim 90	
90	90. The method of claim 61 wherein the common IP address is an IP address dynamically assigned to a modem or router used by the user for online access and connected to the user's set-top box.
Claim 91	
[91A]	91. The method of claim 61 further comprising the computer system: (i) receiving an identifier corresponding to the set-top box of the user; and
[91B]	(ii) causing the television advertisement to be transmitted only if directed to the set-top box corresponding to the identifier.
Claim 92	
92	92. The method of claim 61 wherein part (a) comprises the act of storing the common IP address, and further comprising updating the common IP address of the user.
Claim 93	
93	93. The method of claim 92 wherein part (a) comprises the act of storing the common IP address in the computer system, and further comprising periodically updating the common IP address of the user.
Claim 94	
[94A]	94. The method of claim 61 wherein: (i) the user profile information in part (b) includes a list of online access IP addresses corresponding to specific online

Designation	Claim Language
	activities and times and dates corresponding to each of the online activities; and
[94B]	(ii) the computer system causes the television advertisement to be directed to the set-top box of one of the users only if any of the listed online access IP addresses corresponding to the specific online activities and the corresponding dates and times of the online activities match the common IP address assigned to that user and the date and time corresponding thereto.
Claim 95	
95	95. The method of claim 94 wherein part (a) comprises the act of storing in the computer system the common IP address and dates and times corresponding thereto, and further comprising periodically updating (i) the common IP address and times and dates corresponding thereto or (ii) the list of online access IP addresses corresponding to specific online activities and time and dates corresponding to each of the online activities.
Claim 96	
96	96. The method of claim 61 wherein the computer system is a central ad server and the first television advertisement is received at the central ad server and directed to the set-top box.
Claim 97	
97	97. The method of claim 61 wherein part (b) comprises, with the computer system, directing instructions to a profile provider, to an online site, or to an independent ad server to direct the first television advertisement to the set-top box.
Claim 98	
98	98. The method of claim 61 wherein part (b) comprises, with the computer system, directing instructions to the set-top box to retrieve the first television advertisement from a profile provider, from an online site, or from an independent ad server.
Claim 99	
99	99. The method of claim 61 wherein the computer system causes the first television advertisement to be directed only in

Designation	Claim Language
	response to a request for advertisements originating from the user's set-top box.
Claim 100	
100	100. The method of claim 61 wherein the computer system causes the first television advertisement to be directed without a request for advertisements originating from the user's set-top box.
Claim 101	
101	101. The method of claim 61 wherein the online access IP address of each user is an IP address associated with a modem or router used by that user for online access.
Claim 102	
102	102. The method of claim 61 wherein only advertisements satisfying criteria selected by each user are directed to the set-top box of that user.
Claim 103	
103	103. The method of claim 61 further comprising receiving a revenue amount as a result of directing the advertisement.
Claim 104	
104	104. The method of claim 61 further comprising paying a revenue amount to a profile provider as a result of using the user profile information in part (b).
Claim 105	
105	105. The method of claim 26 wherein automatically electronically delivering comprises, with the computer equipment, redirecting the user's online user interface device to a server of the computer system.
Claim 106	
106	106. The method of claim 26 wherein the first online access IP address and the common IP address are the same.
Claim 107	
107	107. The method of claim 26 wherein the first online access IP address and the common IP address differ.
Claim 108	
108	108. The method of claim 107 wherein the first online access IP address and the set-top box IP address are associated based on online access by the user's online user interface device via a second online access IP address.

Designation	Claim Language
Claim 109	
109	109. The method of claim 108 wherein the second online access IP address and the common IP address are the same.
Claim 110	
110	110. The method of claim 107 wherein the first online access IP address and the set-top box IP address are associated based on a correlation between the common IP address and an online user interface device identifier that indicates the user's online user interface device.
Claim 111	
111	111. The method of claim 110 wherein the online user interface device identifier includes a cookie.
Claim 112	
112	112. The method of claim 110 wherein the online user interface device identifier includes a tag.
Claim 113	
113	113. The method of claim 110 wherein the set-top box is further indicated by a set-top box identifier that includes a device serial number or a portion thereof.
Claim 114	
114	114. The method of claim 110 wherein the set-top box is further indicated by a set-top box identifier that includes a device MAC address or a portion thereof.
Claim 115	
115	115. The method of claim 110 wherein the set-top box is further indicated by a set-top box identifier that includes a username, a pseudonym, or a confirmation number.
Claim 116	
116	116. The method of claim 26 wherein the common IP address is determined by matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs.
Claim 117	
117	117. The method of claim 26 wherein the first online access IP address and the set-top box IP address are associated before the online activity occurs.
Claim 118	

Designation	Claim Language
118	118. The method of claim 26 wherein the first online access IP address and the set-top box IP address are not associated until after the online activity occurs.
Claim 119	
119	119. The method of claim 26 further comprising, with the computer equipment, automatically deriving the user profile information from the online activity from the first online access IP address.
Claim 120	
120	120. The method of claim 31 wherein the first television advertisement is selected based at least partly on a specific search request, which request has originated from the first online user interface device.
Claim 121	
121	121. The method of claim 34 wherein the revenue amount is received from an advertiser that has contracted to display a TV ad to persons who have characteristics contained in the user profile information.
Claim 122	
122	122. The method of claim 121 further comprising, with the computer equipment, automatically selecting the first television advertisement based on the user profile information.
Claim 123	
[123A]	123. The method of claim 26 wherein: (i) the computer equipment is controlled by an entity that operates independently of a provider of television service to each of the multitude of users through the corresponding set-top box; and
[123B]	(ii) the computer equipment causes the first television advertisement to be directed in part (d) without transmitting or causing to be transmitted user online behavioral profile information to the provider of television service.
Claim 124	
124	124. The method of claim 123 wherein the online access and set-top box IP addresses are associated in part (a), and the first television advertisement is caused to be directed in part

Designation	Claim Language
	(d), without receiving personally identifiable information from the provider of television service.
Claim 125	
125	125. The method of claim 28 wherein neither the user profile information delivered in part (a) nor the association between the second online access IP address and its associated set-top box IP address includes personally identifiable information.
Claim 126	
126	126. The method of claim 39 wherein the user profile information derived from the online activity comprises an indication of a search request originating from the online user interface device of the first user.
Claim 127	
127	127. The method of claim 38 wherein automatically electronically delivering comprises, with the computer equipment, redirecting the user's online user interface device to the computer system.
Claim 128	
128	128. The method of claim 38 wherein the first online access IP address and the common IP address are the same.
Claim 129	
129	129. The method of claim 38 wherein the first online access IP address and the common IP address differ.
Claim 130	
130	130. The method of claim 129 wherein the online user interface device identifier and the set-top box identifier are associated based on online access by the user's online user interface device via a second online access IP address.
Claim 131	
131	131. The method of claim 130 wherein the second online access IP address and the common IP address are the same.
Claim 132	
132	132. The method of claim 38 wherein the online user interface device identifier includes a cookie.
Claim 133	
133	133. The method of claim 38 wherein the set-top box identifier includes a device serial number or a portion thereof.
Claim 134	

Designation	Claim Language
134	134. The method of claim 38 wherein the set-top box identifier includes a device MAC address or a portion thereof.
Claim 135	
135	135. The method of claim 38 wherein the set-top box identifier includes a username, a pseudonym, or a confirmation number.
Claim 136	
136	136. The method of claim 38 wherein the online user interface device identifier includes a tag.
Claim 137	
137	137. The method of claim 38 wherein the online user interface device identifier includes the first online access IP address.
Claim 138	
138	138. The method of claim 38 wherein the set-top box identifier includes the common IP address.
Claim 139	
139	139. The method of claim 38 wherein the set-top box identifier includes at least a portion of the common IP address.
Claim 140	
140	140. The method of claim 38 wherein the set-top box identifier includes a set-top box IP address.
Claim 141	
141	141. The method of claim 38 wherein the common IP address is determined by matching the first online access IP address with a set-top box IP address used by a uniquely identified set-top box both before and after the online activity occurs.
Claim 142	
142	142. The method of claim 38 wherein the online user interface device identifier and the set-top box identifier are associated before the online activity occurs.
Claim 143	
143	143. The method of claim 38 wherein the online user interface device identifier and the set-top box identifier are not associated until after the online activity occurs.
Claim 144	

Designation	Claim Language
144	144. The method of claim 38 further comprising, with the computer equipment, automatically deriving the user profile information from the online activity performed from the first online access IP address.
Claim 145	
145	145. The method of claim 39 wherein the user profile information derived from the online activity comprises demographic attributes collected through an Internet site accessed with the online user interface device of the first user.
Claim 146	
146	146. The method of claim 42 wherein the revenue amount is received from an advertiser that has contracted to display a TV ad to an audience of an Internet site.
Claim 147	
147	147. The method of claim 42 further comprising, with the computer equipment, automatically selecting the first television advertisement based on the user profile information.
Claim 148	
148	148. The method of claim 38 wherein neither the user profile information delivered in part (a) nor the association between the online user interface device identifier and the set-top box identifier includes personally identifiable information.
Claim 149	
[149A]	149. The method of claim 38 wherein: (i) the computer equipment is controlled by an entity that operates independently of a provider of television service to each of the multitude of users through the corresponding set-top box; and
[149B]	(ii) the first television advertisement is directed in part (d) without transmitting user online behavioral profile information to the provider of television service.
Claim 150	
150	150. The method of claim 149 wherein the online user interface device identifier and the set-top box identifier are associated in part (a), and the first television advertisement can be directed in part (d), without receiving personally

Designation	Claim Language
	identifiable information from the provider of television service.
Claim 151	
[151A]	151. The method of claim 38: (e) wherein delivered user profile information of a second user of the multitude of users (i) is derived from online activity of the second user from the second user's online user interface device via a second online access IP address and (ii) includes identification of the second online access IP address and the time and date of the online activity,
[151B]	(f) as a result of which delivery, a second television advertisement, different from the first television advertisement, is directed to a second set-top box for presentation via that set-top box, selectively, wherein the second set-top box is indicated by the set-top box identifier that the server associates with the second online user interface device identifier of the second user's online user interface device, for selective presentation via that set-top box, and
[151C]	(g) wherein which television advertisement is directed to or presented via which set-top box depends on differences between the online activities from the first and second online user interface devices, respectively.
Claim 152	
152	152. The method of claim 151 wherein neither the user profile information delivered in part (a) nor the association between the second online user interface device identifier and its associated set-top box identifier includes personally identifiable information.