

**IDENTIFYING A SAME USER OF MULTIPLE COMMUNICATION DEVICES
BASED ON WEB PAGE VISITS, APPLICATION USAGE, LOCATION, OR ROUTE**

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Pat. App. No. 13/668,300 filed on November 4, 2012 and entitled "System For Determining Interests of Users of Mobile And Non-Mobile Communication Devices Based on Data Received From a Plurality of Data Providers"; U.S. Pat. App. No. 13/667,515 filed on November 2, 2012 and entitled "Validation of Data for Targeting Users Across Multiple Communication Devices Accessed By the Same User"; U.S. Pat. App. No. 13/666,690, filed on November 1, 2012 and entitled "Identifying a Same User of Multiple Communication Devices Based on Web Page Visits."; U.S. Provisional Pat. App. No. 61/652,834 filed May 29, 2012, and entitled "Validity of Data for Targeting Advertising Across a Plurality of Mobile and Non-Mobile Communication Facilities Accessed By the Same User"; U.S. Provisional Pat. App. No. 61/576,963 filed December 16, 2011, and entitled "Targeted Advertising to Mobile Communication Facilities"; U.S. Provisional Pat. App. No. 61/569,217 filed December 9, 2011, and entitled "Targeted Advertising Across Web Activities On an MCF and Applications Operating Thereon"; and U.S. Provisional Pat. App. No. 61/558,522 filed November 11, 2011, and entitled "Targeted Advertising Across a Plurality of Mobile and Non-Mobile Communication Facilities Accessed By the Same User," the contents of which are incorporated herein by reference.

[0002] This application also incorporates herein by reference the content of each of the following applications: U.S. App. No. 13/018,952 filed on February 1, 2011, which is a non-provisional of App. No. 61/300,333 filed on February 1, 2010 and entitled "INTEGRATED ADVERTISING SYSTEM," and which is a continuation-in-part of U.S. App. No. 12/537,814 filed on August 7, 2009 and entitled "CONTEXTUAL TARGETING OF CONTENT USING A MONETIZATION PLATFORM," which is a continuation of U.S. App. No. 12/486,502 filed on June 17, 2009 and entitled "USING MOBILE COMMUNICATION FACILITY DEVICE DATA WITHIN A MONETIZATION PLATFORM," which is a continuation of U.S. App. No. 12/485,787 filed on June 16, 2009 and entitled "MANAGEMENT OF MULTIPLE ADVERTISING INVENTORIES USING A MONETIZATION PLATFORM," which is a continuation of U.S. App. No. 12/400,199 filed on March 9, 2009 and entitled "USING MOBILE APPLICATION DATA WITHIN A MONETIZATION PLATFORM," which is a continuation of U.S. App. No. 12/400,185 filed on March 9, 2009 and entitled "REVENUE MODELS ASSOCIATED WITH

SYNDICATION OF A BEHAVIORAL PROFILE USING A MONETIZATION PLATFORM,” which is a continuation of U.S. App. No. 12/400,166 filed on March 9, 2009 and entitled “SYNDICATION OF A BEHAVIORAL PROFILE USING A MONETIZATION PLATFORM,” which is a continuation of U.S. App. No. 12/400,153 filed on March 9, 2009 and entitled “SYNDICATION OF A BEHAVIORAL PROFILE ASSOCIATED WITH AN AVAILABILITY CONDITION USING A MONETIZATION PLATFORM,” which is a continuation of U.S. App. No. 12/400,138 filed on March 9, 2009 and entitled “AGGREGATION AND ENRICHMENT OF BEHAVIORAL PROFILE DATA USING A MONETIZATION PLATFORM,” which is a continuation of U.S. App. No. 12/400,096 filed on March 9, 2009 and entitled “AGGREGATION OF BEHAVIORAL PROFILE DATA USING A MONETIZATION PLATFORM,” which is a non-provisional of App. No. 61/052,024 filed on May 9, 2008 and entitled “MONETIZATION PLATFORM” and App. No. 61/037,617 filed on March 18, 2008 and entitled “PRESENTING CONTENT TO A MOBILE COMMUNICATION FACILITY BASED ON CONTEXTUAL AND BEHAVIORIAL DATA RELATING TO A PORTION OF A MOBILE CONTENT,” and which is a continuation-in-part of U.S. App. No. 11/929,328 filed on October 30, 2007 and entitled “CATEGORIZATION OF A MOBILE USER PROFILE BASED ON BROWSE BEHAVIOR,” which is a continuation-in-part of U.S. App. No. 11/929,308 filed on October 30, 2007 and entitled “MOBILE DYNAMIC ADVERTISEMENT CREATION AND PLACEMENT,” which is a continuation-in-part of U.S. App. No. U.S. App. No. 11/929,297 filed on October 30, 2007 and entitled “MOBILE COMMUNICATION FACILITY USAGE AND SOCIAL NETWORK CREATION”, which is a continuation-in-part of U.S. App. No. 11/929,272 filed on October 30, 2007 and entitled “INTEGRATING SUBSCRIPTION CONTENT INTO MOBILE SEARCH RESULTS,” which is a continuation-in-part of U.S. App. No. 11/929,253 filed on October 30, 2007 and entitled “COMBINING MOBILE AND TRANSCODED CONTENT IN A MOBILE SEARCH RESULT,” which is a continuation-in-part of U.S. App. No. 11/929,171 filed on October 30, 2007 and entitled “ASSOCIATING MOBILE AND NONMOBILE WEB CONTENT,” which is a continuation-in-part of U.S. App. No. 11/929,148 filed on October 30, 2007 and entitled “METHODS AND SYSTEMS OF MOBILE QUERY CLASSIFICATION,” which is a continuation-in-part of U.S. App. No. 11/929,129 filed on October 30, 2007 and entitled “MOBILE USER PROFILE CREATION BASED ON USER BROWSE BEHAVIORS,” which is a continuation-in-part of U.S. App. No. 11/929,105 filed on October 30, 2007 and entitled “METHODS AND SYSTEMS OF MOBILE DYNAMIC CONTENT PRESENTATION,” which is a

continuation-in-part of U.S. App. No. 11/929,096 filed on October 30, 2007 and entitled "METHODS AND SYSTEMS FOR MOBILE COUPON TRACKING," which is a continuation-in-part of U.S. App. No. 11/929,081 filed on October 30, 2007 and entitled "REALTIME SURVEYING WITHIN MOBILE SPONSORED CONTENT," which is a continuation-in-part of U.S. App. No. 11/929,059 filed on October 30, 2007 and entitled "METHODS AND SYSTEMS FOR MOBILE COUPON PLACEMENT," which is a continuation-in-part of U.S. App. No. 11/929,039 filed on October 30, 2007 and entitled "USING A MOBILE COMMUNICATION FACILITY FOR OFFLINE AD SEARCHING," which is a continuation-in-part of U.S. App. No. 11/929,016 filed on October 30, 2007 and entitled "LOCATION BASED MOBILE SHOPPING AFFINITY PROGRAM," which is a continuation-in-part of U.S. App. No. 11/928,990 filed on October 30, 2007 and entitled "INTERACTIVE MOBILE ADVERTISEMENT BANNERS," which is a continuation-in-part of U.S. App. No. 11/928,960 filed on October 30, 2007 and entitled "IDLE SCREEN ADVERTISING," which is a continuation-in-part of U.S. App. No. 11/928,937 filed on October 30, 2007 and entitled "EXCLUSIVITY BIDDING FOR MOBILE SPONSORED CONTENT," which is a continuation-in-part of U.S. App. No. 11/928,909 filed on October 30, 2007 and entitled "EMBEDDING A NONSPONSORED MOBILE CONTENT WITHIN A SPONSORED MOBILE CONTENT," which is a continuation-in-part of U.S. App. No. 11/928,877 filed on October 30, 2007 and entitled "USING WIRELESS CARRIER DATA TO INFLUENCE MOBILE SEARCH RESULTS," which is a continuation-in-part of U.S. App. No. 11/928,847 filed on October 30, 2007 and entitled "SIMILARITY BASED LOCATION MAPPING OF MOBILE COMMUNICATION FACILITY USERS," which is a continuation-in-part of U.S. App. No. 11/928,819 filed on October 30, 2007 and entitled "TARGETING MOBILE SPONSORED CONTENT WITHIN A SOCIAL NETWORK," which is a non-provisional of U.S. App. No. 60/946,132 filed on June 25, 2007 and entitled "BUSINESS STREAM: EXPLORING NEW ADVERTISING OPPORTUNITIES AND AD FORMATS," and U.S. App. No. 60/968,188 filed on August 27, 2007 and entitled "MOBILE CONTENT SEARCH" and a continuation-in-part of U.S. App. No. 11/553,746 filed on October 27, 2006 and entitled "COMBINED ALGORITHMIC AND EDITORIAL-REVIEWED MOBILE CONTENT SEARCH RESULTS," which is a continuation of U.S. App. No. 11/553,713 filed on October 27, 2006 and entitled "ON-OFF HANDSET SEARCH BOX," which is a continuation of U.S. App. No. 11/553,659 filed on October 27, 2006 and entitled "CLIENT LIBRARIES FOR MOBILE CONTENT," which is a continuation of U.S. App. No. 11/553,569 filed on October 27, 2006 and entitled "ACTION FUNCTIONALITY

FOR MOBILE CONTENT SEARCH RESULTS,” which is a continuation of U.S. App. No. 11/553,626 filed on October 27, 2006 and entitled “MOBILE WEBSITE ANALYZER,” which is a continuation of U.S. App. No. 11/553,598 filed on October 27, 2006 and entitled “MOBILE PAY PER CALL,” which is a continuation of U.S. App. No. 11/553,587 filed on October 27, 2006 and entitled “MOBILE CONTENT CROSS-INVENTORY YIELD OPTIMIZATION,” which is a continuation of U.S. App. No. 11/553,581 filed on October 27, 2006 and entitled “MOBILE PAYMENT FACILITATION,” which is a continuation of U.S. App. No. 11/553,578 filed on October 27, 2006 and entitled “BEHAVIORAL-BASED MOBILE CONTENT PLACEMENT ON A MOBILE COMMUNICATION FACILITY,” which is a continuation application of U.S. App. No. 11/553,567 filed on October 27, 2006 and entitled “CONTEXTUAL MOBILE CONTENT PLACEMENT ON A MOBILE COMMUNICATION FACILITY”, which is a continuation-in-part of U.S. App. No. 11/422,797 filed on June 7, 2006 and entitled “PREDICTIVE TEXT COMPLETION FOR A MOBILE COMMUNICATION FACILITY”, which is a continuation-in-part of U.S. App. No. 11/383,236 filed on May 15, 2006 and entitled “LOCATION BASED PRESENTATION OF MOBILE CONTENT”, which is a continuation-in-part of U.S. App. No. 11/382,696 filed on May 10, 2006 and entitled “MOBILE SEARCH SERVICES RELATED TO DIRECT IDENTIFIERS”, which is a continuation-in-part of U.S. App. No. 11/382,262 filed on May 8, 2006 and entitled “INCREASING MOBILE INTERACTIVITY”, which is a continuation of U.S. App. No. 11/382,260 filed on May 8, 2006 and entitled “AUTHORIZED MOBILE CONTENT SEARCH RESULTS”, which is a continuation of U.S. App. No. 11/382,257 filed on May 8, 2006 and entitled “MOBILE SEARCH SUGGESTIONS”, which is a continuation of U.S. App. No. 11/382,249 filed on May 8, 2006 and entitled “MOBILE PAY-PER-CALL CAMPAIGN CREATION”, which is a continuation of U.S. App. No. 11/382,246 filed on May 8, 2006 and entitled “CREATION OF A MOBILE SEARCH SUGGESTION DICTIONARY”, which is a continuation of U.S. App. No. 11/382,243 filed on May 8, 2006 and entitled “MOBILE CONTENT SPIDERING AND COMPATIBILITY DETERMINATION”, which is a continuation of U.S. App. No. 11/382,237 filed on May 8, 2006 and entitled “IMPLICIT SEARCHING FOR MOBILE CONTENT,” which is a continuation of U.S. App. No. 11/382,226 filed on May 8, 2006 and entitled “MOBILE SEARCH SUBSTRING QUERY COMPLETION”, which is a continuation-in-part of U.S. App. No. 11/414,740 filed on April 27, 2006 and entitled “EXPECTED VALUE AND PRIORITIZATION OF MOBILE CONTENT,” which is a continuation of U.S. App. No. 11/414,168 filed on April 27, 2006 and entitled “DYNAMIC BIDDING AND EXPECTED

VALUE,” which is a continuation of U.S. App. No. 11/413,273 filed on April 27, 2006 and entitled “CALCULATION AND PRESENTATION OF MOBILE CONTENT EXPECTED VALUE,” which is a non-provisional of U.S. App. No. 60/785,242 filed on March 22, 2006 and entitled “AUTOMATED SYNDICATION OF MOBILE CONTENT” and which is a continuation-in-part of U.S. App. No. 11/387,147 filed on March 21, 2006 and entitled “INTERACTION ANALYSIS AND PRIORITIZATION OF MOBILE CONTENT,” which is continuation-in-part of U.S. App. No. 11/355,915 filed on February 16, 2006 and entitled “PRESENTATION OF SPONSORED CONTENT BASED ON MOBILE TRANSACTION EVENT,” which is a continuation of U.S. App. No. 11/347,842 filed on February 3, 2006 and entitled “MULTIMODAL SEARCH QUERY,” which is a continuation of U.S. App. No. 11/347,825 filed on February 3, 2006 and entitled “SEARCH QUERY ADDRESS REDIRECTION ON A MOBILE COMMUNICATION FACILITY,” which is a continuation of U.S. App. No. 11/347,826 filed on February 3, 2006 and entitled “PREVENTING MOBILE COMMUNICATION FACILITY CLICK FRAUD,” which is a continuation of U.S. App. No. 11/337,112 filed on January 19, 2006 and entitled “USER TRANSACTION HISTORY INFLUENCED SEARCH RESULTS,” which is a continuation of U.S. App. No. 11/337,180 filed on January 19, 2006 and entitled “USER CHARACTERISTIC INFLUENCED SEARCH RESULTS,” which is a continuation of U.S. App. No. 11/336,432 filed on January 19, 2006 and entitled “USER HISTORY INFLUENCED SEARCH RESULTS,” which is a continuation of U.S. App. No. 11/337,234 filed on January 19, 2006 and entitled “MOBILE COMMUNICATION FACILITY CHARACTERISTIC INFLUENCED SEARCH RESULTS,” which is a continuation of U.S. App. No. 11/337,233 filed on January 19, 2006 and entitled “LOCATION INFLUENCED SEARCH RESULTS,” which is a continuation of U.S. App. No. 11/335,904 filed on January 19, 2006 and entitled “PRESENTING SPONSORED CONTENT ON A MOBILE COMMUNICATION FACILITY,” which is a continuation of U.S. App. No. 11/335,900 filed on January 18, 2006 and entitled “MOBILE ADVERTISEMENT SYNDICATION,” which is a continuation-in-part of U.S. App. No. 11/281,902 filed on November 16, 2005 and entitled “MANAGING SPONSORED CONTENT BASED ON USER CHARACTERISTICS,” which is a continuation of U.S. App. No. 11/282,120 filed on November 16, 2005 and entitled “MANAGING SPONSORED CONTENT BASED ON USAGE HISTORY”, which is a continuation of U.S. App. No. 11/274,884 filed on November 14, 2005 and entitled “MANAGING SPONSORED CONTENT BASED ON TRANSACTION HISTORY”, which is a continuation of U.S. App. No. 11/274,905 filed on November 14, 2005 and entitled

“MANAGING SPONSORED CONTENT BASED ON GEOGRAPHIC REGION”, which is a continuation of U.S. App. No. 11/274,933 filed on November 14, 2005 and entitled “PRESENTATION OF SPONSORED CONTENT ON MOBILE COMMUNICATION FACILITIES”, which is a continuation of U.S. App. No. 11/271,164 filed on November 11, 2005 and entitled “MANAGING SPONSORED CONTENT BASED ON DEVICE CHARACTERISTICS”, which is a continuation of U.S. App. No. 11/268,671 filed on November 5, 2005 and entitled “MANAGING PAYMENT FOR SPONSORED CONTENT PRESENTED TO MOBILE COMMUNICATION FACILITIES”, and which is a continuation of U.S. App. No. 11/267,940 filed on November 5, 2005 and entitled “MANAGING SPONSORED CONTENT FOR DELIVERY TO MOBILE COMMUNICATION FACILITIES,” which is a non-provisional of U.S. App. No. 60/731,991 filed on November 1, 2005 and entitled “MOBILE SEARCH”, U.S. App. No. 60/720,193 filed on September 23, 2005 and entitled “MANAGING WEB INTERACTIONS ON A MOBILE COMMUNICATION FACILITY”, and U.S. App. No. 60/717,151 filed on September 14, 2005 and entitled “SEARCH CAPABILITIES FOR MOBILE COMMUNICATIONS DEVICES”.

BACKGROUND OF THE INVENTION

Field of the Invention

[0003] This disclosure relates to the field of mobile communications and more particularly to improved methods and systems directed to targeting advertising to mobile and non-mobile communication facilities accessed by the same user.

Description of Related Art

[0004] Web-based search engines, readily available information, and entertainment mediums, have proven to be one of the most significant uses of computer networks such as the Internet. As online use increases, users seek more and more ways to access the Internet. Users have progressed from desktop and laptop computers to cellular phones and smartphones for work and personal use in an online context. Now, users are accessing the Internet not only from a single device, but from their televisions and gaming devices, and most recently, from tablet devices. Internet-based advertising techniques are currently unable to optimally target and deliver content, such as advertisements, for a mobile communication facility (e.g., smartphone, tablet device, etc.) because the prior art techniques are specifically designed for the Internet in a non-mobile device context. These prior art techniques fail to take advantage of unique data assets derived from telecommunications and fixed mobile convergence networks. As it becomes commonplace for a user to interchangeably access the

Internet via his smartphone, tablet, PC, and television, there is no efficient way to optimally target that same user across all the devices he may use. Therefore, a need exists for a system associated with telecommunications networks and fixed mobile convergence applications that is enabled to select and target advertising content readable by a plurality of mobile and non-mobile communication facilities and that is available from across a number of advertising inventories. Along with this need, it is desirable to validate user identifications received from the plurality of mobile and non-mobile communications accessed by the same user.

SUMMARY OF THE INVENTION

[0005] To overcome the deficiencies of the prior art, what is needed, and has not heretofore been developed, is a system associated with telecommunications networks and fixed mobile convergence applications that is enabled to select and target advertising content readable by a plurality of mobile and non-mobile communication facilities and that is available from across a number of advertising inventories.

[0006] In a first embodiment, a system for identifying a same user of multiple communication devices includes one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of: (a) receiving data corresponding to a first plurality of web page visits via a first device operated by a user, wherein the first device is a mobile or non-mobile communications device; (b) receiving data corresponding to a second plurality of web page visits via a second device operated by a user, wherein the second device is a mobile or non-mobile communications device; (c) determining that the user of the first device is the user of the second device based on identifying that the first plurality of web page visits is substantially the same as the second plurality of web page visits; and (d) selecting and transmitting a sponsored content to the second device for display thereon, wherein the sponsored content has a relevance to the first and second plurality of web page visits. The information relating to the plurality of web page visits includes one or more of: (a) a URL of each respective web page; (b) a time of visiting each respective web page; (c) a duration of visiting each respective web page; (d) an order in which each web page is visited; and (e) a geographic location of the first and second device at the time of visiting each respective web page. The system may be further configured to perform the steps of: (a) determining that a pre-existing universal profile has not been created to identify that the first and second devices are used by the same user; and (b) creating a universal profile for the user containing data corresponding to the first and second devices. The mobile communications device may be a cellular phone, a tablet, a portable media player, or a laptop or notebook

computer. The non-mobile communications device may be a television, a cable box, or a personal computer.

[0007] In a second embodiment, a system for identifying a same user of multiple communication devices includes one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of: (a) receiving first data corresponding to (i) a location of a first communication device operated by a user and (ii) a time of day at which the first communication device is situated at the location; (b) receiving second data corresponding to (i) a location of a second communication device operated by a user and (ii) a time of day at which the second communication device is situated at the location; (c) determining that the user of the first communication device is the user of the second communication device based on receiving the first and second data a predetermined number of times; (d) determining that a pre-existing universal profile has not been created to identify that the first and second communication devices are used by the same user; and (e) creating a universal profile for the user containing data corresponding to the first and second communication devices.

[0008] In a third embodiment, a system for identifying a same user of multiple communication devices includes one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of: (a) receiving data corresponding to a first route associated with a first communication device operated by a user, wherein the first route is derived from a plurality of geographic coordinates corresponding to respective locations at which the first communication device was situated; (b) receiving data corresponding to a second route associated with a second communication device operated by a user, wherein the second route is derived from a plurality of geographic coordinates corresponding to respective locations at which the second communication device was situated; (c) determining that the user of the first communication device is the user of the second communication device based on identifying that the first route is the substantially the same as the second route; (d) determining that a pre-existing universal profile has not been created to identify that the first and second communication devices are used by the same user; and (e) creating a universal profile for the user containing data corresponding to the first and second communication devices.

[0009] In a fourth embodiment, a system for identifying a same user of multiple communication devices includes one or more computers having computer readable mediums

having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of: (a) receiving data corresponding to a first application use-pattern from a first communication device operated by a user; (b) receiving data corresponding to a second application use-pattern from a second communication device operated by a user; (c) determining that the user of the first communication device is the user of the second communication device based on identifying that the first application use-pattern is the same as the second application use-pattern; (d) determining that a pre-existing universal profile has not been created to identify that the first and second communication devices are used by the same user; and (e) creating a universal profile for the user containing data corresponding to the first and second communication devices. The first or second application use-pattern may correspond to at least one of: (a) a set of applications used on the first and second communication devices; (b) an order of applications used on the first and second communication devices; (c) a time of day of use of one or more applications on the first and second communication devices; (d) a duration of application use on the first and second communication devices; and (e) a location of use of one or more applications on the first and second communication devices.

[0010] In a fifth embodiment, a system for identifying a same user of multiple communication devices includes one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of: (a) identifying a first profile associated with a user of a first communication device; (b) identifying a second profile associated with a user of a second communication device; (c) determining that the user of the first communication device is the same as the user of the second communication device based on identifying at least one same datum contained in the first profile and the second profile; (d) determining that a pre-existing universal profile has not been created for the first or second profile; and (e) associating the first and second profiles with a universal profile corresponding to the user. The first or second user profile may be is derived from a login by the user, wherein the login may be an application login or website login.

[0011] In a sixth embodiment, a system for identifying a same user of multiple communication devices includes one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of: (a) receiving data corresponding to a first user-managed asset from a first communication device operated by a user; (b) receiving data corresponding to a second user-managed asset from a second

communication device operated by a user; (c) determining that the user of the first communication device is the user of the second communication device based on identifying that the first user-managed asset is the same as the second user-managed asset; (d) determining that a pre-existing universal profile has not been created to identify that the first and second communication devices are used by the same user; and (e) creating a universal profile for the user containing data corresponding to the first and second communication devices. The user-managed assets may be one of (a) stored phone numbers or contacts on the first and second communication devices; (b) types of downloaded applications on the first and second communication devices; and (c) placement of downloaded applications within a graphical user interface of the first and second communication devices.

[0012] The universal profile may include at least one of: (a) a payment and billing history associated with the user; (b) a duration of online interactions by the user associated with his respective communication devices; (c) a number of online interactions by the user via his respective communication devices; (d) a usage pattern of the respective communication devices dependent on location or time of day use thereof; (e) a type of content accessed by the user via his respective communication devices; (f) previous search queries entered by the user via his respective communication devices; (g) shopping habits associated with the user; (h) videos, music, or audio listened to or downloaded by the user; (i) previous geographies associated with the user; and (j) web pages visited or applications used by the user via his respective communication devices. The shopping habits may be at least one of: (a) products viewed or purchased on one of the first and second communication devices; (b) purchase amounts of the products purchased on one of the first and second communication devices; (c) purchase dates of the products purchased on one of the first and second communication devices; and (d) elapsed time between a product viewing and a product purchase on one of the first and second communication devices.

[0013] The system may be further configured to perform the steps of: (a) selecting a sponsored content based on a relevancy thereof with the universal profile; and (b) transmitting the sponsored content to the second communication device for display thereon. Selection of the sponsored content is based at least on: (a) frequency capping; (b) cross-platform conversion tracking; (c) retargeted advertisements; (d) cross-platform retargeted advertisements; or (e) brand-impact data. The relevancy of sponsored content may further be based on a user characteristic datum associated with the user, including, but not limited to: (a) age, age-range, or birthdate; (b) gender; (c) race; (d) religion; (e) marital status; (f) area code of the phone number assigned to one of the first and second mobile or non-mobile

communication devices; (g) zip code; (h) home address; (i) work address; (j) billing address; (k) type of credit card used to pay a carrier providing service to the mobile or non-mobile communication devices; (l) birthplace; (m) employer; (n) employment position; (o) income bracket of the user; (p) model of one of the first and second mobile or non-mobile communication devices; and (q) operating system of one of the first and second mobile or non-mobile communication devices.

[0014] The present invention also includes a system for validating user identifications received from a plurality of mobile and non-mobile communications accessed by the same user, to ensure it is the same user when a new identification appears. The present invention includes a system for validating user identifications, the system including one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of: (a) receiving at a data management platform a plurality of first user identifications associated with a first communication device accessed by a first user, wherein the data management platform includes data relating to the first user; (b) receiving at the data management platform a plurality of second user identifications associated with a second communication device accessed by a second user; and (c) determining at the data management platform via a predetermined number of the plurality of receipts of the first and second user identifications that the first user accessing the first communication device is the second user accessing the second communication device.

[0015] The first or second user identification may be received from: (a) a carrier providing service to the first and second communication devices; (b) a webpage publisher; (c) an application provider; (d) a user log-in; or (e) a third party. The first or second user identification may be: (a) a hashed email address; (b) a log-in; (c) a username; (d) a data provider identification; (e) a matchkey; (f) a carrier identification; and (g) an Internet protocol.

[0016] The system may be further configured to perform the step of transmitting an advertising content to the second communication device, wherein selection of the advertising content is based at least on a relevancy thereof to the plurality of first user identifications. The relevancy may be further based on a user characteristic datum associated with the user, including, but not limited to one or more of: (a) age, age-range, or birthdate; (b) gender; (c) race; (d) religion; (e) marital status; (f) area code of the phone number assigned to one of the first and second communication devices; (g) zip code; (h) home address; (i) work address; (j) billing address; (k) type of credit card used to pay a carrier providing service to the

communication device; (l) birthplace; (m) employer; (n) employment position; (o) income bracket of the user; (p) model of one of the first and second communication devices; and (q) operating system of one of the first and second communication devices.

[0017] The user characteristic datum may be one or more of: (a) a payment and billing history associated with the user; (b) a duration of online interactions by the user associated with his respective communication devices; (c) a number of online interactions by the user via his respective communication devices; (d) a usage pattern of the respective communication devices dependent on location or time of day use thereof; (e) a type of content accessed by the user via his respective communication devices; (f) previous search queries entered by the user via his respective communication devices; (g) shopping habits associated with the user; (h) videos, music, or audio listened to or downloaded by the user; (i) previous geographies associated with the user; and (j) web pages visited or applications used by the user via his respective communication devices. The shopping habits may be at least one of: (a) products viewed or purchased on one of the first and second communication devices; (b) purchase amounts of the products purchased on one of the first and second communication devices; (c) purchase dates of the products purchased on one of the first and second communication devices; and (d) elapsed time between a product viewing and a product purchase on one of the first and second communication devices.

[0018] The present invention also includes a system for determining interests of users of mobile and non-mobile communication devices based on data received from a plurality of data providers, wherein the system is configured to perform the steps of: (a) obtaining multiple datasets, wherein each dataset comprises at least one user and at least one corresponding attribute for the at least one user; (b) creating a first cluster comprising a first user from at least one dataset and the at least one corresponding attribute for the first user; (c) creating a second cluster comprising a second user from the at least one dataset and the at least one corresponding attribute for the second user; (d) merging the first cluster with the second cluster; and (e) assigning values to previously unknown attributes based on probabilistic estimations.

[0019] In one embodiment, a system for determining interests of users of mobile and non-mobile communication devices based on data received from a plurality of data providers may include one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of: (a) receiving a first dataset from a first data provider, wherein the first dataset includes a first and second user and a respective first

plurality of attributes corresponding to the first and second users; (b) receiving a second dataset from a second data provider, wherein the second dataset includes the first and second user and a respective second plurality of attributes corresponding to the first and second users, wherein at least some of the plurality of first attributes is different from the second plurality of attributes, wherein respective attributes of the pluralities of the first and second attributes include corresponding indications of likes and dislikes thereof, and wherein respective attributes of the pluralities of first and second attributes lack a corresponding indication of the likes or dislikes thereof; (c) creating a third dataset by combining the first and second datasets, wherein the third dataset includes: (i) the first and second users; (ii) the first and second plurality of attributes; (iii) the respective attributes of the pluralities of the first and second attributes including the corresponding indications of likes and dislikes thereof; and (iv) the respective attributes of the pluralities of the first and second attributes lacking a corresponding indication of the likes or dislikes thereof; (d) for at least one attribute of the first plurality of attributes lacking a corresponding indication of the likes or dislikes thereof for the first user, determining an indication of a liking for the attribute by determining that: (i) a first set of a plurality of attributes for the first user has an indication of a liking by the first user of each attribute of the plurality of attributes; and (ii) a second set of a plurality of attributes for the second user has an indication of a liking by the second user of each attribute of the plurality of attributes, wherein the first set of the plurality of attributes is contextually similar to the second set of the plurality of attributes; (e) selecting an advertisement contextually relevant to the attribute of the first plurality of attributes that previously lacked a corresponding indication of the like or dislike thereof by the first user; and (f) transmitting the selected advertisement to a communications device of the first user for display thereon.

[0020] In embodiments, the communication devices may be mobile or non-mobile, a phone, a mobile phone, a cellular phone, a smartphone, a tablet PC, a laptop computer, a desktop (personal) computer, a television, cable box, a PDA, a portable media (music and/or video) player, or a gaming console. However, the list should not be construed as limiting the invention in any manner.

[0021] These and other features and characteristics of the present invention, as well as the methods of operation and functions of the related elements of structures and the combination of parts and economies of manufacture, will become more apparent upon consideration of the following description and the appended claims with reference to the accompanying drawings,

all of which form a part of this specification, wherein like reference numerals designate corresponding parts in the various figures.

BRIEF DESCRIPTION OF THE DRAWINGS

- [0022] FIG. 1 is a diagram illustrating a wireless platform of a first embodiment in accordance with the present invention;
- [0023] FIG. 2 is a flowchart illustrating the steps of the first embodiment of FIG. 1;
- [0024] FIG. 3 is a diagram illustrating a wireless platform of a second embodiment in accordance with the present invention;
- [0025] FIG. 4 is a flowchart illustrating the steps of the second embodiment of FIG. 3;
- [0026] FIG. 5 is a diagram illustrating a wireless platform of a third embodiment in accordance with the present invention;
- [0027] FIG. 6 is a flowchart illustrating the steps of the third embodiment of FIG. 5;
- [0028] FIG. 7 is a diagram illustrating a wireless platform of a fourth embodiment in accordance with the present invention;
- [0029] FIG. 8 is a flowchart illustrating the steps of the fourth embodiment of FIG. 7;
- [0030] FIG. 9 is a diagram illustrating a wireless platform of a fifth embodiment in accordance with the present invention;
- [0031] FIG. 10 is a flowchart illustrating the steps of the fifth embodiment of FIG. 9.
- [0032] FIG. 11 is a diagram illustrating a system for receiving a plurality of user identifications at a data platform;
- [0033] FIG. 12 is a flowchart illustrating the steps of a current embodiment in accordance with the present invention;
- [0034] FIG. 13 depicts a practical example of an embodiment of bridging;
- [0035] FIG. 14 depicts bridging in the context of advertising network identification;
- [0036] FIG. 15 depicts smart traffic;
- [0037] FIG. 16 depicts multivariate click and conversion history;
- [0038] FIG. 17 depicts collaborative filtering;
- [0039] FIG. 18 depicts probabilistic attachment of attributes; and
- [0040] FIG. 19 depicts photo metadata.

DETAILED DESCRIPTION OF THE INVENTION

[0041] By definition, the blurring of the lines between traditional broadcast television and online multimedia content due to consumers owning more than one device with a screen is known as cross-screen capability. The demand for converged cross-screen services and high quality resultant experiences is growing. Consumers want a flexible viewing experience in

which personalized content, such as live sports, recorded television programs, on-demand movies, and social media experiences, goes wherever they go and can be shifted from device to device.

[0042] As demand for cross-screen service increases, telecommunications evolve into content delivery businesses, and carriers will have new opportunities to leverage their service delivery platforms and collaborate with content providers to develop converged multi-screen offerings. As carriers offer free and premium content over more and more efficient multi-screen options, there is greater opportunity for advertisers to reach their ideal audiences. Furthermore, there are increased opportunities to reach the preferred audiences more than once, thereby offering different content according to the device being used, and ultimately increasing the advertisers' conversion rates. As consumers increasingly use their mobile phones, they still continue to use PCs and TVs. These devices are growing in size and diminishing in heft. For example, in 2010, mobile video, recorded television programs, and PC Internet use grew by 51.2%, 18.1%, and 17.3%, respectively, over use in 2009. Unifying communications brings together presence, instant messaging, voice, video, voice messaging, desktop sharing, and conferencing. This consistency among devices will help users communicate and collaborate using their method and device of choice, while presenting new opportunities for advertisers to reach them.

[0043] Typically, a given user may access his smartphone, tablet, PC, and television a number of times during the course of a day. His use of these devices may reflect the time of day or his location. For example, a user may wake up in the morning and read news stories on his smartphone at home and check the weather via his television before leaving for work. While at the office, he likely works from his PC. At lunch or while commuting, he may use his tablet. At home, he likely turns on his television for live or computer programs, while checking sports scores from his smartphone.

[0044] Advertisers want to reach the user described in the above example. To optimally reach him, they need to recognize him not just when he accesses a webpage or application from his smartphone, but from all of his mobile and non-mobile communication devices. A recognition system is provided by an advertising network to identify the user to know which advertisements he has already received and responded to without sacrificing the user's privacy.

[0045] FIG. 1 depicts a wireless platform for providing advertisements to multiple communication devices accessed by a user. The wireless platform includes a first device 101, a second device 102, a server 104, and a sponsor database 108. Although the first device 101

and the second device 102 communicate with server 104 and sponsor database 108 through the Internet in this particular embodiment, other methods of communication are also available. Additionally, the server 104 and sponsor database 108 may be centrally located or geographically dispersed, locally and/or remotely interconnected, and may be integrated into a combined system.

[0046] In embodiments, the first device 101 and second device 102 may be mobile or non-mobile devices, such as mobile phones, cellular phones, smartphones, GSM phones, tablet PCs, laptop computers, computers, televisions, PDAs, personal media players, and gaming consoles. However, the list should not be construed as limiting the invention in any manner, as other mobile or non-mobile devices are contemplated and would work equally well in the context of the invention.

[0047] In the embodiment shown in FIG. 1, server 104 communicates with first device 101 to receive information relating to the user's activity on first device 101. A user's activity may be behavioral pattern, viewing habits, usage information, duration on each application, geographic location information, proximity to other locations, etc. The user activity information is communicated through communication signal 103. User activity information may be continually, or periodically, updated for the user by first device 101. Further, user activity information may be transmitted based on a request from server 104, a periodic transmission by first device 101, or a triggering event on the part of first device 101. Upon receiving the user's activity information, server 104 assigns a unique identifier, which could be alphabetical, numerical, alphanumerical, or symbols to first device 101 and stores the assigned unique identifier, user information and activity information into table 105. In embodiments, table 105 may store additional information, including device information, operator information, carrier information, etc. Server 104 further identifies the second device 102 accessed by the user through a communication signal 106. Again, server 14 may identify second device 102 through a request from server 104, a periodic transmission by the second device 102, or a triggering event on the part of first device 102. Once server 104 makes sure first device 101 and second device 102 are both used by the same user, sever 104 informs sponsor database 108 through communication signal 107 and asks sponsor database 108 to transmit an advertisement to second device 102 through communication signal 109. Additionally, server 104 may transmit table 105 through a request from sponsor database 108, periodic transmission by server 104 or a triggering event based on the activity information. The transmission of the advertisement may occur through channels other than the Internet.

[0048] As an example, suppose a user has two devices; first device 101 and second device 102, in which first device 101 is an iPhone and second device 102 is an iPad. For most of the day, user uses his first device 101 or iPhone to check basketball scores on ESPN, stock prices on Yahoo Finance and look for the nearest restaurant on Yelp. All of the user's activities with respect to his iPhone may be recorded and received by server 104 through an Internet connection. It is to be understood that gateways to the Internet may be provided by the respective service providers providing service to each of the devices. As server 104 collects the information on the user's iPhone or first device 101, it may store the information in table 105. The information stored in table 105 could be the way the user checked basketball scores on ESPN, the particular stocks the user monitored on Yahoo Finance and the search queries the user entered on Yelp. At the same time, server 104 identifies user's second device 102 or the iPad. The method of identification could be done through linking identifiers. For example, each device has its own serial number assigned either by the manufacturer or the carrier and therefore, server 104 can collect the respective identifiers and verify the respective owners. The server can also collect identifiers assigned by various third-party publishers and effectively identify the users. Once the owners/operators are identified as the same owner/operator, server 104 may further record such finding in table 105. In a further embodiment, server 104 can request the ad database to transmit an advertisement to second device 102 through the ad database 108 based on the user's usage activity on first device 101. In this example, the ad database will push advertisements potentially pertaining to NBA League Pass, investment strategies from financial services, or restaurant coupons from the restaurants the user searched. In other embodiments, server 104 can wait for a request from ad database 108 to push for an advertisement or server 104 can relay table 105 to ad database 108 periodically for ad database 108 to determine when to transmit an advertisement.

[0049] In another embodiment of FIG. 1, second device 102 can be a television. Again, as information is successfully collected from first device 101, server 104 or ad database 108 can initiate a push of advertisements to the user via the television when the television is identified as the user's device. Traditionally, televisions did not have the capability to connect to the Internet and therefore, advertisements can only be used to target viewers on a channel level rather than a user level. Ad agencies would only target advertisements to viewers based on statistics regarding the viewers of a particular channel.

[0050] In another embodiment of FIG. 1, activity information can be the IP addresses of the user's devices. By recording and associating the IP addresses to the devices, a server can at least effectively identify the household by where the devices are located. Through

analyzing the data transmitted out from the household, the composition of the household can be determined and thus a better idea of what advertisements to push can be realized. In another embodiment, ad server can add the location of the household to better serve its purpose. For example, a college student in a college town viewing news regarding college sports would most likely be interested in sports-related products.

[0051] In another embodiment of FIG. 1, activity information can be locations of the user's devices. By tracking the proximity between a user's devices over a predetermined period of time, a server can safely and appropriately conclude that the devices are owned by the same user. As people today often own and carry more than one communication device, the proximity between the more than one communication device is very short, possibly within a couple feet. Furthermore, other criteria like, but not limited to, velocity and speed, of the devices can be taken into account for evaluation. By doing so, a newly purchased device can be linked together immediately to provide a better target for advertisements.

[0052] In other embodiments, there can be more than one second device 102 the user owns, and if user does have more than one second device 102, more information about the user can be gathered and more advertisements can be pushed to the user.

[0053] FIG. 2 depicts a flowchart illustrating the steps of pushing a targeted advertisement to a user device. The process starts with step 201 by receiving information relating to an activity performed by the user via a first communication device associated with the user. Step 202 assigns a unique identifier to the user and associating a profile with the user based on the activity. Step 203 identifies the user upon use of a second communication device by the user. Lastly, Step 204 transmits a sponsored content to the second device for display thereon, wherein the sponsored content has a relevance to the profile of the user or activity performed by the user of the first communication device.

[0054] An advertising network aggregates data from webpages and applications that are inside or outside its own network. This creates multiple vantage points on the users the advertising network encounters. If a log-in is available, the advertising network will seek to gain access to match keys and make additional links between PC-online (or other non-mobile medium) and mobile. The data the advertising network amasses will be made available to advertisers under the advertising network's brand.

[0055] A single user may have multiple profiles, across multiple categories of profiles, based at least in part on multiple web browser activities. When the user accesses the web from multiple devices, collapsing all profiles and activities into a single profile simplifies the unique identifying process.

[0056] FIG. 3 depicts a second embodiment of linking two different devices owned by the same owner. Similar to FIG. 1, FIG. 3 includes first device 101, second device 102, server 104, table 105 and sponsor database 108. FIG. 3 further includes a 1st user profile 301 associated with first device 101 and a 2nd user profile 302 associated with second device 102. Additionally, the server 104 and sponsor database 108 may be centrally located or geographically dispersed, locally and/or remotely interconnected, and may be integrated into a combined system.

[0057] In this embodiment, instead of receiving activity information on respective devices by server 104, server 104 receives 1st user profile 301 and 2nd user profile 302. Examples of the profiles include, but not limited to, mobile login information, application login information. Again, server 104 may receive 1st user profile 301 and 2nd user profile 302 based on a request from server 104, a periodic transmission by first device 101 and second device 102, or a triggering event on the part of first device 101 and second device 102. As server 104 receives 1st user profile 301 and 2nd user profile 302 through communication signals 103 and 106, server 104 stores the two profiles into table 105. Server 104 stores and further links 1st user profile 301 and 2nd user profile 302 together under a universal profile to conveniently identify the user in the future. Server 104 then transmits table 105 to sponsor database 108 through communication signal 107 for sponsor database 108 to push advertisements to second device 102 or first device 101. The determination to push advertisements may be based on a relevancy score between the universal profile and advertisements, such that the advertisements are sent only when the relevancy score is above a predetermined value or threshold. Additionally, server 104 may transmit table 105 through a request from sponsor database 108, periodic transmission by server 104, a triggering event based on examining the universal profile or a triggering event based on linking 1st user profile 301 and 2nd user profile 302.

[0058] An example of FIG. 3 is when a user uses the Facebook application on his iPhone or first device 101 and uses Yelp application on his iPad or second device 102 with a different login information. The login information can be differed through the use of usernames, for instance. After server 104 receives both login information or profiles and linking them, server 104 will communicate with sponsor database 108 to determine, based on a relevancy score, whether it is appropriate to send advertisements to one or both of the two devices owned by the user.

[0059] FIG. 4 depicts a flowchart illustrating the steps of creating a universal profile and further pushing a targeted advertisement to a user device. The process starts with step 401 by

identifying a first profile associated with a user of a first communication device. Step 402 identifies a second profile associated with the user of a second communication device. Step 403 determines whether a pre-existing universal profile already exists or not. When the answer to Step 403 is N or No, then the process moves to Step 404. Step 404 then proceeds to create a universal profile and links the all profiles together in Step 405. When the answer to Step 403 is a Y or Yes, then the process moves to Step 405 and links the newly identified profiles together. Once the all profiles are linked together, Step 406 will determine whether advertisements should be pushed or not. If the determination based on the relevancy score is below a certain threshold, then it will loop back and wait for another pairing of advertisements and profile. If the determination based on the relevancy score is above a certain threshold, then the process moves to Step 407 and pushes the advertisements to one or both of the devices.

[0060] FIG. 5 depicts a third embodiment of linking two different devices owned by the same owner. Similar to FIG. 3, FIG. 5 includes a first device 101, second device 102 and server 104. FIG. 5 further includes a 1st user managed assets 501 associated with first device 101 and a 2nd user managed assets 502 associated with second device 102. The communications between server 104, first device 101 and second device 102 are via Internet, however, the use of the Internet is merely exemplary and shall not be construed as limiting the invention in any manner. In this embodiment, instead of receiving user profiles on respective devices by server 104, server 104 receives 1st user managed assets 501 and 2nd user managed assets 502. Examples of the user managed assets include, but not limited to, phone numbers stored, placement of the applications, and type of applications downloaded. Again, server 104 may receive 1st user managed assets 501 and 2nd user managed assets 502 based on a request from server 104, a periodic transmission by first device 101 and second device 102, or a triggering event on the part of first device 101 and second device 102. Server 104 then makes a determination of whether the received user managed assets indicate a same user of first device 101 and second device 102. When a same user indeed owns (or operates) both first device 101 and second device 102, server 104 then determines whether there is a universal profile for the user and creates or stores a universal profile for the user.

[0061] An example of FIG. 5 is that a user may keep the same contact list in his iPhone and his secondary phone or that the user may have the same applications on his iPhone and his secondary phone. The user may have downloaded NBA JAM and ESPN ScoreCenter and placed them on the top left corner on the first page of his iPhone and iPad for easy access. The same download and same placement may effectively allow servers to identify people on

an individual level. However, the phone numbers or applications need not be identical on both devices, but they need to have a high correlation in order for server 104 to determine the two devices are owned by the same user.

[0062] FIG. 6 depicts a flowchart illustrating the steps of linking multiple devices together based on highly similar user managed assets from the multiple devices. The process starts with step 601 by receiving from a first communication device data corresponding to a first plurality of user managed assets existing on a first communication device. Step 602 receives from a second communication device data corresponding to a second plurality of user managed assets existing on a second communication device. Step 603 compares the first plurality of user managed assets to the second plurality of user managed assets and determines whether the communication devices are used by the same user. If Step 603 determines that the users are not the same, then the process will stop at Step 604. If Step 603 determines that the users are the same, then the process will go to Step 605. Step 605 then creates and saves the user in a universal profile that includes both first device 101 and second device 102.

[0063] FIG. 7 depicts a fourth embodiment of linking two different devices owned by the same owner. Similar to FIG. 5, FIG. 7 includes first device 101, second device 102, server 104 and table 105. FIG. 7 further includes a 1st use pattern 701 associated with first device 101 and a 2nd use pattern 702 associated with second device 102. The communications between server 104, first device 101 and second device 102 are via Internet, however, the use of the Internet is merely exemplary and shall not be construed as limiting the invention in any manner.

[0064] In this embodiment, instead of receiving user profiles on respective devices by server 104, server 104 receives 1st use pattern 701 and 2nd use pattern 702. Examples of the use pattern include, but not limited to, ways of using applications, order of using applications, duration of using applications. Again, server 104 may receive 1st use pattern 701 and 2nd use pattern 702 based on a request from server 104, a periodic transmission by first device 101 and second device 102, or a triggering event on the part of first device 101 and second device 102. Server 104 then makes a determination of whether the received use patterns indicate a same user of first device 101 and second device 102. When a same user indeed owns both first device 101 and second device 102, server 104 then determines whether there is a universal profile for the user and creates or stores a universal profile for the user.

[0065] An example of FIG. 7 is that a user may have a habit of going through a series of applications. Specifically, a user may first be playing NBA JAM on his iPhone when he is

waiting for bus and as soon as he is done playing, he goes to ESPN ScoreCenter, again on his iPhone, to check the live score of his favorite teams. At another instant, he may be watching an NBA game on television and playing NBA JAM on his iPad, then as soon as he finishes playing NBA JAM on his iPad, he checks ESPN ScoreCenter on the very same device. Such unique pattern of use could effectively be used to identify people on an individual level. The recording of use pattern need not be so specific to the application level. It could be on a level of the type of application. Using the same example, instead of identifying the user playing NBA JAM on his iPhone, he could be identified as playing a sports game, or even to a higher level, playing a game. Therefore, rather than connecting NBA JAM to ESPN ScoreCenter as the user's use pattern, his device could just connect sports game to ESPN ScoreCenter, sports game to broadcasting application, game to ESPN ScoreCenter or game to broadcasting application.

[0066] FIG. 8 depicts a flowchart illustrating the steps of linking multiple devices together based on highly similar use patterns from the multiple devices. The process starts with step 801 by receiving from a first communication device data corresponding to a first use pattern from interaction by a user of a first communication device with the first communication device. Step 802 receives from a second communication device data corresponding to a second use pattern from interaction by a user of a second communication device with the second communication device. Step 803 compares the first use pattern to the second use pattern and determines whether the communication devices are used by the same user. If Step 803 determines that the users are not the same, then the process will stop at Step 804. If Step 803 determines that the users are the same, then the process will go to Step 805. Step 805 then creates and saves the user in a universal profile that includes both first device 101 and second device 102.

[0067] FIG. 9 depicts a fifth embodiment of linking two different devices owned by the same owner. Similar to FIG. 7, FIG. 9 includes first device 101, second device 102, server 104 and table 105. FIG. 9 further includes a sponsor database 108 and behavioral data 901 associated with first device 101 and location info 902 associated with second device 102. The communications between server 104, first device 101 and second device 102 are via the Internet, however, the use of the Internet is merely exemplary and shall not be construed as limiting the invention in any manner. Additionally, the server 104 and sponsor database 108 may be centrally located or geographically dispersed, locally and/or remotely interconnected, and may be integrated into a combined system. In this embodiment, instead of receiving use patterns on respective devices by server 104, server 104 receives behavioral data 901 and

location info 902 from first device 101 and second device 102, respectively. Examples of the behavioral data include, but not limited to, location information, duration at each location, potential commercial activity in the location and actual commercial activity in the location. Again, server 104 may receive behavioral data 901 and location info 902 based on a request from server 104, a periodic transmission by first device 101 and second device 102, or a triggering event on the part of first device 101 and second device 102. Server 104 then makes a determination of whether the received behavioral data from first device 101 correlates with the location info from second device 102 and decides if a same user is using both first device 101 and second device 102. When a same user indeed owns both first device 101 and second device 102, server 104 then works with sponsor database 108 to push a sponsored content to second device 102.

[0068] An example of FIG. 9 is that a user owns first device 101 or an iPhone and walks around using the iPhone as his personal assistant to find restaurants and other places to go. He finds a coffee shop in the area and continues to visit the coffee shop at least 3 times a week on weekdays. He purchases the same or similar items with his iPhone at the coffee shop. Such behavioral information is recorded by server 104 in table 105 and a universal profile is created for the user if it has not already been created. On a particular weekend, he decides to bring his iPad or second device 102, with or without his iPhone, to the coffee shop. Because his location information, derived from his iPad, revealed that he is visiting the coffee shop, server 104 can identify this seemingly new customer to be the same customer who uses the iPhone and visits on a regular basis. As server 104 recognizes such a match between his recorded behavior and his current location information, server 104 can easily identify the user. Furthermore, to effectively identify the user, server 104 may record the routes the user takes prior and after the user's visit to the coffee shop to provide a higher correlation. For example, knowing that the user almost always goes to the gym before heading to the coffee shop can more accurately identify the user when the user is not carrying the same device. Further, server 104 need not wait until the user enters the coffee shop to make a correlation; instead, server 104 could make such correlation as soon as the user is within 200 feet of the coffee shop or heading in the direction of the coffee shop.

[0069] FIG. 10 depicts a flowchart illustrating the steps of linking multiple devices together based on highly similar behavioral data from the multiple devices. The process starts with step 1001 by receiving data corresponding to a first communication device accessed by the user, receiving user behavior data corresponding to behavior of the user as derived from use of the first communication device by the user and creating a universal

profile for both received information, if necessary. Step 1002 receives location information relating to the user's current location from a second communication device accessed by the user. Step 1003 compares the location information to the user behavior data in the universal profile and determines whether or not the two are relevant. If Step 1003 determines that the information is not relevant, then the process will stop at Step 1004. If Step 1003 determines that the information is relevant, then the process will go to Step 1005. Step 1005 then saves the second device in the universal profile and coordinates with the sponsored database to push for advertisements.

[0070] It is to be understood that a universal profile, after its creation, may have dynamic properties attached thereto, as the universal profile may be updated to add or delete further correlations between data, devices, etc. Additionally, the universal profile, or data therein, may be temporal and given set expirations at which time the universal profile/data would no longer be considered valid (e.g., if the system becomes aware that a user discards devices on a frequent basis). Likewise, it is contemplated that the system can check for and account for invalid and/or inconsistent data within the universal profile.

[0071] In another embodiment of the present invention, a key activity for an advertising network is to identify match keys for the same user across wired web, mobile web, and mobile application traffic. This enables an advertising network to collapse a profile for a user and create a universal profile. PC-online and offline data suppliers link users to cookies online via anonymous Personally Identifiable Information (PII), known as match keys or "join points." The process entails linking elements such as a name, address, email address or phone number to an identifying "number" on both sides of the transaction, linking a log-in on a mobile website or application with the data suppliers' profile data for that user.

[0072] An advertising network may build an audience database of match keys that links users in PC-online and mobile. Match key suppliers enable an advertising network to set its mobile ID (based on hardware ID, header ID, or cookie) and connect that ID with the match key supplier's anonymous PII ID in PC-online. Once the advertising network has the PC-online PII ID, it can look up that user's user profile data from a data source or company.

[0073] An advertising network ID is set when a user logs into a publisher or application (a "matchkey provider" (MKP)). The user is recognized when the application sends the advertising network the hardware ID. The advertising network may see an ID in the header, or a publisher attaches a pixel associated with the advertising network that enables a cookie to be served. The matchkey is provided by the MKP passing either obfuscated or encrypted PII (oPII), typically name, address, email, and zip code; or a consistent cross-channel user

identifier, typically a login ID or internal user ID; or an MKP ID, which is user ID that is pre-processed to match with the data sources. Use of cookie reflection or 302/303 redirects, as is known in the art, may be used to effectuate communication of a device with the advertising network.

[0074] To acquire data, the advertising network connects with the data suppliers with the oPII or matches MKP ID with online MKP ID to receive the matching segments. For example these segments may be “student,” “male,” “25 years old,” and “luxury shopper.”

[0075] Used in combination with cookies and match keys, a pixel tag is usually a transparent graphic image, usually no larger than one pixel by one pixel, placed on a webpage or in an email. It is used to monitor the behavior of the user visiting the webpage or sending the e-mail. When the HTML code for the pixel tag points to a site to retrieve the image, it can simultaneously pass along information, such as the IP address of the computer that retrieved the image, the type of browser that retrieved the image, and previously set cookie values. Pixel tags are typically used by a third-party to monitor the activity of a site. A pixel tag can be detected by viewing the source code of a webpage and looking for any that load from a different server than the rest of the site. Turning off the browser’s cookies will prevent pixel tags from tracking the user’s activity. The pixel tag will still account for an anonymous visit, but the user’s unique information will not be recorded.

[0076] An advertising network may uniquely identify a user by creating a hashed (e.g., anonymized) email address upon noticing the user the first time. The advertising network matches the user to his email address and then hashes the email address.

[0077] Once a user is tagged via a unique ID, advertisers can know what the user is interested in, whether the advertiser has targeted the user before, and which specific ads the user has already viewed. An advertiser is provided with a list of user IDs. The advertiser’s attributes and sharing restrictions are applied to the data. This enables the advertiser to both positively and negatively target users when they are encountered in a network or on an exchange.

[0078] Should the user access a webpage or application from a device he has never previously used, he may be identified via a match key. For example, a user has accessed movie times from his smartphone and is uniquely identified by one of the aforementioned methods. The user then uses his brand new tablet to purchase tickets. Because he is using a device that has never before been used, an advertising network will not be able to recognize him by his previously assigned unique ID. However, when he logs into a webpage or application using his email and password to purchase tickets, the webpage or application can

recognize the user by the match key associated with his log in, and assimilate the match key with the user's unique ID. Now the user may be identified on the new device by the same ID associated with him via his smartphone.

[0079] Should the user in the above example not log into a webpage or application on a brand new device, he may be identified instead by user behavior and location.

[0080] When a user is uniquely identified via the use of one device, the user can be identified via the unique ID upon the user's use of a second device. For example, a user accesses an application from his smartphone to check movie times and is uniquely identified. When the user later uses his tablet to check the news, his previously assigned unique ID triggers advertisements for recently released movies. When he turns on his television and accesses an application to check the weather, the advertisements associated with the weather information will be for local movie theatres or links to purchase tickets.

[0081] The cross-screen platform described herein may federate a single identity or profile across all screens. If the same ID is passed to the cross-screen platform across all screens, all profile information may be federated.

[0082] An advertising network may operate a data facility containing mobile subscriber characteristics pertaining to individual users of a mobile communication facility. This data may include, but is not limited to, data collected by the wireless provider when an individual opens a wireless account, such as age, sex, race, religion, area code, home address, work address, billing address, credit card information, passwords, family information (e.g., mother's maiden name), birthplace, driver's license number, employer, position, annual income, income bracket, items purchased, friends and family information (including any of the foregoing types of information) and the like. The mobile subscriber characteristics facility may continually, or periodically, update data for individual users, for example, bill amount(s), average bill total, payment history, on-time payment history, on-line usage amount, duration of on-line interactions, number of on-line interactions, family status and family information, number of children, shopping habits (e.g., views of or purchases of goods and services), click stream information, device type and device version, device characteristics, usage patterns (including those based on location, time of day, or other variables), device and/or subscriber unique identifiers, content viewing history, content presented for viewed by/not viewed by user, content and programs downloaded, videos, music, and audio listened to and/or downloaded, television watched, timing and duration of viewing/downloading, transaction history, and any other user or user-defined characteristics. The purchase of physical goods may be facilitated by a wireless provider by having the

wireless provider collect the user's credit card information as part of the billing cycle and adding goods transactions automatically to the wireless provider's bill to the user.

[0083] The mobile subscriber characteristics database may also track data related to phone usage and location. For example, data collected could include a history of phone calls made, phone calls received, the mobile subscriber characteristics of the persons calling or called by the user, the duration of calls, a history of communications made via phone, Internet, email, instant messaging, or chat (and the entities communicated with by these technologies), history of phone calls made linked with geographic/location information at the time of each call, log of phone numbers, and a history of clicks and clickthroughs (or other keystroke or user interface equivalents thereof, including voice-initiated actions) made using the mobile communication facility.

[0084] The device characteristics associated with a mobile communication facility as described herein, may be recorded and stored within a separate database. The device characteristics database may be further associated with other elements of the wireless platform including, but not limited to a wireless provider, contextual information database, mobile subscriber characteristics database, user transaction database, usage history database, location database, sponsor data, advertiser data, carrier business rules database, content walled garden database, a locator facility, the Internet, third party server and an associated database, or some other wireless communication facility.

[0085] User transactions associated with a mobile communication facility may be recorded and stored within a separate database. The user transaction database may include, but is not limited to, an online purchase, an offline purchase, an advertisement conversion, a coupon redemption, content interaction, a transfer of funds from a bank account, a transfer of funds from a PayPal, BillPay, or similar online banking account, an item placement in an online shopping cart, a stage at which an incomplete item purchase was terminated, a ratio of item views to item purchases associated with the mobile communication facility, or some other data related to a transaction.

[0086] A transaction may be an economic transaction or a non-economic transaction. A non-economic transaction may include, but is not limited to, completing an enrollment, completing a survey, joining a group, subscribing to a free RSS feed, or some other type of non-economic transaction. The user transactions may also be associated with other elements of the wireless platform including, but not limited to a wireless provider, contextual information database, mobile subscriber characteristics database, device characteristics database, usage history database, location database, sponsor data, advertiser data, carrier

business rules database, content walled garden database, a locator facility, the Internet, third party server, and an associated database or some other wireless communication facility.

[0087] Usage history associated with a mobile communication facility may also be recorded and stored within a separate database. Usage history may include, but is not limited to, a browse history, URL's visited on the mobile communication facility, an advertisement conversation, a text message sent, a text message received, an email sent, and email received, an outgoing call, an incoming call, a call's duration, a conference call's participants, accessing a folder on the mobile communication facility, downloading a content, uploading a content, or some other usage action, event, or history. The usage history may be associated with other elements of the wireless platform as detailed above.

[0088] Usage history associated with a mobile communication facility may be recorded and stored within a separate database. In addition to other examples provided, the location may be a previous location; a current location; coordinates of a mobile communication facility; location determined by GPS, triangulation, Wi-Fi triangulation, and the like; location determined by a user entering a region, a state, a city, or the like; location determined according to a distance from a specified location, a location associated with a mobile content; and the like. The location database may be further associated with other elements of the wireless platform as detailed above.

[0089] Contextual information associated with website and other content accessed using a mobile communication facility may also be recorded and stored within a separate database. Contextual information may be a link structure, an inbound link, an outbound link, a text, a keyword, keyword combination, metadata, anchor text, or some other type of contextual information. The contextual information may be provided by a server associated with a wireless carrier. The server may be a WAP server, a mobile application gateway, a WAP gateway, a proxy, a webserver, or some other type of server. The contextual information may be further associated with other elements of the wireless platform as described above.

[0090] Behavioral retargeting, also known as behavioral remarketing, or simply, retargeting, is a form of online targeted advertising by which online advertising is delivered to consumers based on previous Internet actions, often but not always actions that did not result in a conversion. A conversion is the action intended by the site owner, typically a user making a purchase.

[0091] Some companies specialize in retargeting. Other companies have added retargeting to their list of methods of purchasing advertising. Retargeting helps companies advertise to website visitors who leave without a conversion, which is approximately 98% of all web

traffic. Displaying ads to prospective consumers as they surf webpages and applications via various advertising networks that the agency buys media from on behalf of their business customers results in conversions. Retargeting is the delivery of advertisements to users who have shown at least some amount of engagement in a given brand. This makes retargeting a smarter spend than most other display advertisement campaigns, as it focuses on a specific brand's engaged user base. Most likely, a company has spent marketing dollars to get a customer to its site in the first place. Therefore, the term "retargeting" derives from the concept of marketing again, but in a different manner. Search retargeting, a form of behavioral retargeting, can also be leveraged to drive new customers that have not been to the site before because they are being retargeted based on actions taken on a third-party website.

[0092] Studies suggest that a company needs to have an average of seven different contacts with a customer before they make a purchase. Retargeting allows companies to continue the marketing conversation with a customer after they leave a website. This form of behavioral targeting is a growing trend in the online marketing arena.

[0093] Advertisers contribute data segments, find their users again in a network, and enable an advertising delivery company to acquire those users on exchanges. The advertising delivery company allows advertisers to achieve better results via audience that they can build directly (e.g., users who visit Ford's mobile site). In some cases, an advertising delivery company allows advertisers to buy another advertiser's audience. Advertisers can participate in retargeting via (i) exclusive access: only the advertiser targets against their own audience; (ii) shared non-competitive access: contributors allow their data to be used by non-competitive advertisers in exchange for access to the segment data pool. For example, Fidelity can access "high net worth users" as indicated by users visiting Lexus automotive pages; and (iii) shared and open access: All contributors can access all segments.

[0094] Personalized retargeting, a related practice, differs from behavioral retargeting as it allows an advertiser to display a banner created on-the-fly for a particular consumer based on their specific browsing behavior. For example, if a consumer visits an advertiser's website and browses products A, B, and C, they will then be retargeted with a display banner featuring the exact products A, B, and C that they previously viewed. Retargeting may span all devices or screens operated by the same user, and may be referred to as cross-screen or cross-platform retargeting.

[0095] Location-based retargeting allows for an advertising network to target a user based on a previously-assigned unique ID and the current location from which the unique ID is accessing information. For example, this unit would take into account location and possibly

time of the day or location history. If it was around lunch time, it would try to serve up matches to possible lunch places. For instance, as one moves around, an on-screen compass of the advertisement would indicate how close one was to the virtual ad billboard. If the user clicks on the ad billboard, a bar code or quick response code would pop up that the user could use at the restaurant when they walked in. The ad unit would refresh itself every so often with a new location.

[0096] An advertiser may want to positively target a particular user on a plurality of screens. A sports game application developer provides the advertising network with IDs for users who have downloaded their sports games in the past. When the advertising network presents an advertisement to those users, a new sports game from the developer is advertised as those users are more likely to purchase another sports game.

[0097] An advertiser may want to negatively target a particular user on a plurality of screens. A search engine application provides the advertising network with a list of IDs for users who have downloaded their application previously so that the advertising network does not show those same users an ad for an application that they have already downloaded. Determining which users have already completed the download on at least one device is also known as conversion tracking, or cross-platform conversion tracking

[0098] An advertiser may want to sequentially target a particular user on a plurality of screens. A dating application provides a list of IDs for users who have downloaded an application, but have not yet upgraded to the paid subscription. When the advertising network encounters those users, a message to upgrade to the paid services may be presented.

[0099] An advertiser may want to stop targeting a particular user once the user ID or the user's universal profile has appeared a number of times. An advertiser may determine how many times to target the user before ceasing the delivery of its advertisements. This is known as frequency capping. The advertiser may also limit the number of times to show an advertisement to the same user based on the device the user is operating. For example, an advertiser may want to show an ad to a user no more than five times. The advertiser may pre-determine that the ad should appear to the user twice on a tablet and three times on a mobile phone, or the advertiser may simply indicate that the ad should appear five times regardless of which device the user is operating.

[00100] Retargeting may expand to brand recognition. An advertising network may track, via clicks or conversions, how users respond to a category or brand on a particular platform. An advertising network may then indicate to its advertisers that, for example, users respond

to automotive ads more often on a tablet than on a mobile phone. The same conversions may be tracked for a particular brand.

[00101] Metadata to customize advertisements will also add to the cross-screen experience. For example, a webpage may ordinarily include metadata specifying what language it is written in, what tools were used to create it, and where to go for more on the subject, allowing browsers to automatically improve the experience of users. Combining metadata with the cross-screen experience will work like a traditional advertising content but involves customization. The goal is to capture the user's attention when he is focused on another device. Using the accelerometer in a smartphone, a smartphone detects motion and causes the background of an advertisement to ripple (e.g., ocean background, grass blowing in breeze) and the text to move against it slightly while the user is at a PC. Simultaneously, the smartphone features an advertisement that includes a photo from the user's online album or an icon associated with the user. The use-case in mind is to reach a user who might not have noticed the advertisement while on the PC but caught the animation and customization before putting the phone away.

[00102] Technographics indicate how to best target consumers in a given area. Many companies approach social media as a list of technologies to be deployed as needed to achieve a marketing goal. But a more coherent approach is to start with the target audience and determine what kind of relationship a business wants to build with them, based on what they are ready for. Technographics is the categorization of social computing behaviors into a ladder with six levels of participation. It describes a population according to its participation in these levels. Brands, webpages, and any other companies pursuing social technologies may analyze their customers' social technographics first and then create a social strategy based on this profile. For example, if a particular region of Maine has a high tablet use and southern Florida has marginal tablet traffic, advertisers who want to target the tablet users may want to show advertisements for cold-weather related living as opposed to beach living.

[00103] As advertisements appear across a plurality of devices, there is a growing need for improved methods of paying for these advertisements. A smart pricing strategy for advertisers encompasses a smart pricing system that presents a platform for bidding in real time, wherein the platform offers competitive bidding for advertising space on a multitude of devices. The devices include, but are not limited to, smartphones, mobile phones, tablet devices, PCs, gaming devices, and televisions.

[00104] Bids offered by a publisher without a background of information with the advertising network may be placed automatically. Since no prior information exists, an

advertising network cannot determine the correct value of the impression. However, a network may use several methods to understand the bid landscape and generate enough bids until a distribution can be created. For example, when there is a new site that the advertising network has no information about, it may place bids using information from a similar publisher, site, or user information. The advertising network may consider reducing the margin so that the advertising network has a better probability of winning bids. If no win results, the advertising network doubles the bid until a win occurs. The reason to double the bid here is to understand if a particular site has a higher reserved price. The advertising network will need to analyze this situation so that it can find the right advertisers for the site. If it appears that there is a relatively high reserve price, compared to what the current candidate advertisers are willing to pay, the advertising network may then adjust the pricing. Since this is a new data point, other advertising networks or exchanges will not have information or incentive to jam the bid at the upper bound of the bid price. However, if the advertising network is winning every time with less than 10% difference between the winning bid and the second price, it should consider reducing the bid by 10% to make sure that there is no gaming of bid price.

[00105] The advertising network may generate floating floors for a reserve price. A reserve price prevents advertisers from bidding under a set financial consideration for certain inventory. The financial consideration may be a flat fee, a fixed amount, variable amount, impression-based (e.g., cost per thousand impression, or CPM), cost-per-click (CPC), cost-per-action (CPA), cost-per-engagement (CPE), time-based, based on a shared revenue of user transactions, shared with a wireless operator whose data is being accessed, shared with a publisher, shared with an ad network, or otherwise arranged.

[00106] An advertising network may prevent high quality advertisers from bidding on low quality inventory that require low financial considerations. The advertising network could improve the algorithm as it learns more about the data over time. In cost-per-impression campaigns, a bid could be equivalent to what an advertiser is willing to pay, minus the margin.

[00107] Other strategies for an advertising network for advertising pricing include autonomic, or adaptive bidding. Bidding the true valuation of the impression is the dominant strategy. At a high level, the methodology is to assign the highest bid to the impression. However, market dynamics will have to be countered to explore the bid landscape.

[00108] Autonomic bidding may use historical information and explore bid landscape. Conversely, autonomic bidding may exploit current bids as is, keep historical win bids to

learn the bid landscape, and explore reducing bids. It may also ensure that either competitors or the advertising exchanges are not increasing the bids themselves.

[00109] Autonomic bidding may explore a bid landscape. It may vary bids to understand if there is any interaction with other advertising networks or if advertising networks can dominate an arbitrage opportunity. A randomly assigned reserve price selected from a distribution of reserve prices helps prevent other advertising networks from exploiting a rival's reserve prices. Autonomic bidding may decide when to maintain the bid and when to increase or decrease.

[00110] Another aspect of autonomic bidding is inventory selection. This bidding strategy may select the right inventory in order not to provide the advertising exchange the ability to manipulate impression calls to the advertising network.

[00111] Advertising exchanges send a selective call for bids when an impression arrives. Advertising networks compute the value of the impression and return a bid. Sophisticating advertising exchanges allow comparison of similar inventory sent to advertising networks and comparison of the bid price in real time bidding. Two scenarios exist here. First, when an advertising network always wins in real time bidding with a bid price, it wins and pays the second highest bid. In real time bidding, the advertising network only pays the second price, which would be less than the price paid if sold in its own bidding system. The advertising exchange can increase revenue by diverting more traffic to its own system instead of real time bidding for the same inventory.

[00112] When the advertising network loses in real time bidding, the winner pays at least as much as the advertising network was willing to pay, or more if the advertising network is not the second highest bid. In its own system, the advertising network shares all the revenue, which is less than what the exchange can earn in the real time auction. The advertising exchange can increase revenue by diverting more traffic to real time bidding instead of its own system for the same inventory.

[00113] The real time bidding strategies also exist for advertisers. Advertisers may strike a balance between network bidding and real time bidding.

[00114] In bidding, advertising networks may plan for an inventory hold out. Although there is a randomization step that occurs in the yield optimization algorithm, if there is a consistent winner for every auction, up to 80% of the time, this winner will be chosen. This method will result in exhausting the budget of this winner and, later in the day if there are impressions that require higher bids, the advertising network may not have any parties to bid.

[00115] FIG. 11 depicts a wireless platform for determining the validity of user identifications. The wireless platform includes a first device 1101, a second device 1102, a server 1105, and a receipt database 1110. Although the first device 1101 and the second device 1102 communicate with server 1105 and receipt database 1110 through the Internet in this particular embodiment, other methods of communication are available. Additionally, the server 1105 and receipt database 1110 may be centrally located or geographically dispersed, locally and/or remotely interconnected, and may be integrated into a combined system.

[00116] In embodiments, the first device 1101 and second device 1102 may be mobile or non-mobile, mobile phones, cellular phones, smartphones, GSM phones, tablet PCs, laptop computers, computers, televisions, PDAs, cable boxes, portable media players, and gaming consoles.

[00117] In an embodiment of the present invention, server 1105 communicates with the first device 101 and a second device 1102 to receive user identifications. The user identifications are communicated through communication signal 1103 and communication signal 1104 to the server 1105. The server 1105 then communicates the first user identifications 1107 and second user identifications 1108 through communication signal 1109 to receipt database 1110. Upon receipt at the receipt database 1110, the receipt database 1110 identifies based on a predetermined number of receipts that the first user identifications 1107 and second user identifications 1108 are associated with the same user. In embodiments, user identifications may be a hashed email address, a log-in, a username, data provider identification, a matchkey, a carrier identification, or an Internet protocol. Hashing data or applying an encryption may provide anonymity to the user and their corresponding data.

[00118] FIG. 2 depicts a flowchart illustrating the steps identifying a user through user identifications based on receipt of those user identifications a predetermined number of times. The processing step starts with step 1201 by receiving at a data management platform a plurality of first user identifications associated with a first communication device accessed by a first user, wherein the data management platform includes data relating to the first user. Step 1202 involves receiving at the data management platform a plurality of second user identifications associated with a second communication device accessed by a second user. Step 1203 involves determining at the data management platform via a predetermined number of the plurality of receipts of the first and second user identifications that the first user accessing the first communication device is the second user accessing the second communication device.

[00119] By definition, the blurring of the lines between traditional broadcast television and online multimedia content due to consumers owning more than one device with a screen is known as cross-screen capability. The demand for converged cross-screen services and high quality resultant experiences is growing. Consumers want a flexible viewing experience in which personalized content, such as live sports, recorded television programs, on-demand movies, and social media experiences, goes wherever they go and can be shifted from device to device.

[00120] As users turn to multiple devices in a cross-screen setting, they increase their viewing histories and geographic location. In turn, these lead to increased data about users and increased ways to target advertisements to them. With a single user accessing so many devices and traveling to various locations with those devices, data received about the user may appear inaccurate at the onset. It is necessary to qualify and quantify the data received so that a relevant ad may be targeted to the user (e.g., that the intended user is being reached).

[00121] Qualifying and quantifying the data may be accomplished through a data management platform. The platform can answer who the user is and what else is known about the user. Such data may be provided to or from a publisher or first party data provider, or the platform may correlate third party data to a publisher or an advertiser. For example, carrier information may be combined with information from a third party provider to determine more about a user.

[00122] Combing user identifications (hereinafter, “user IDs”) also calculates the quality of data. Multiple validations may be required when the frequency of a user ID appears. For example, when a given user ID from a hashed email appears together with another user ID from a new device, there is a minimum threshold of appearances the two user IDs must make in order to indicate the user is the same user each time. For example, the threshold may be three appearances together. The higher the number of appearances, the more likely it is that the user is the same.

[00123] In embodiments, the minimum threshold of appearance the user IDs must make are communicated through communication signal 103 and communication signal 104 to the server 105. The server 105 then communicates the user IDs through communication signal 109 to receipt database 110. Upon receipt at the receipt database 110, the receipt database 110 records each user ID appearance. When the user IDs have been recorded and reached the minimum number of receipts, the receipt database 110 determines that the user IDs are associated with the same user.

[00124] Often the predetermined number of receipts, or minimum threshold, is seeing the two user IDs three times. The minimum threshold may vary depending on whether the user IDs are a hashed email address, a log-in, a username, data provider identification, a matchkey, a carrier identification, or an Internet protocol. For example, a log-in provided by a user may have to appear three times, whereas another ID may have to appear at least five times since if it is not provided by the user.

[00125] Such user IDs and receipt databases are the basis for Per-ID type detection logic. The user IDs must be seen with other valid user IDs, and a group of IDs indicating the same user becomes known as a family of user IDs. For example, if identification ABC is seen with identification DEF, the family may become ABCDEF.

[00126] User IDs and families of user IDs are assigned expiration dates. The user IDs assigned and the number of appearances are only valid for a set amount of time. Upon expiration, the user ID may be assigned to a new user. For example, if User A is assigned ABC, and the expiration is ten days, User B may be assigned ABC on the eleventh day.

[00127] The receipt database may adhere to compliance regulations (disclosure of collected data, use, opt-out, etc.). It may store a hashed version of the user ID so no user is stored with a user profile. In addition, opt-out preferences are stored with the user profile.

[00128] Multiple user IDs may be received from a single device. For example, User A may use the device, and then loan the device to User B. User A is assigned IDs based on his user browsing and history. User B is assigned different IDs based on his user browsing and history. The receipt database may identify which user is currently accessing the device based on the appearances of User A and User B in the database.

[00129] Because multiple IDs can exist on a single device, the platform may also exhibit a system to know when to validate and when to invalidate IDs. For example, if User A loans his device to User B and user B only accesses one webpage, his assigned user ID will only make one appearance. Without other appearances, the receipt database will invalidate User B's user ID from User A's device.

[00130] Multiple IDs from multiple sources may be validated as correctly relating to a single, unique user based at least in part on the use of a matchkey, co-registration, user demographic data, device hardware identifiers (e.g., a hardware ID of a mobile communication facility), intra-application key matches (e.g., a video game), intra-platform key matches (e.g., Facebook), unique phone number, geographic location ("geolocation"), customer identifier, language, device characteristic, transaction data, credit card number, or based on some other identifier. The term matchkey refers to a functionality that may

comprise verification of data provided by a consumer such as name, address, phone number, credit card number to be matched with a set of data available in a database. In one aspect, a system may be provided that allows a consumer to enter a data string that the system may match with data available in a database, such as data derived from a prior interaction with the customer. In another aspect, a vendor may maintain a database that includes matchkeys defining characteristics of customers to whom the vendor has previously provided and/or sold services. The system may provide a matching engine that compares characteristics of a consumer with the matchkeys in the vendor database. In case a matchkey already exists in the vendor database, an assigned step may occur. For example, a customer with user data matching an existing matchkey in a database may result in any new user data collected on this user being aggregated with prior user data collected. In another embodiment, a customer with user data matching an existing matchkey in a database may result in a discount being offered to the customer, or some other activity initiated. In embodiments, a co-registration process may be used to create a pseudo matchkey. For example, user profile attributes may be collected when consumer requests information regarding a product, completes a survey and/or some other type of form, such as may be found on a website (or application) or within a product catalog. From the data collected during the co-registration process, unique identifiers/characteristics may be used to create a matchkey that may be used to aggregate user profile data, from multiple data sources, relating to the user. This aggregated user profile data may then be used for targeting of sponsored content to the user, or other uses.

[00131] Multiple IDs may also arise from third party data providers. Third party data providers may include public databases, subscription databases, freeware databases, purchased databases, etc. Public databases may include census data, voter registration, real estate assessment data, public registry, vehicle registry, court records, and the like. There are many sources of public and private information that may be relevant to targeted data use. Subscription and/or purchased, private databases may include a wide variety of internet access analytics and clickstream analytics data including normalized, aggregated, regional, and the like. In an example of third party data use in association with behavioral data, the server may receive a request for behavioral data of users in the Boston area who have recently used their mobile communication facility to search for information about mortgage financing or refinancing. A monetization platform may access third party data related to home sales and/or refinance activity, such as from local registry of deeds databases. By combining the third party information with the behavioral information, users who have recently refinanced or recently purchased a home may be identified within the behavioral

data. The monetization platform may deliver behavioral data that may include integrated third party data in order to provide a more comprehensive set of behavioral data.

[00132] As described above, a financial consideration may be based on an availability of relevant third party data. In this example, due to the relevant third party data, the monetization platform may offer a version of the behavioral data without the third party data for one financial consideration and offer an integrated version for another (potentially greater) financial consideration.

[00133] Third party data that may be obtained from one or more third parties may be associated with the retrieved user's behavioral profile. The third party data may be sourced from one or more data sources including census data, environmental data, voter registration data, education data, salary survey data, home value data, town tax records, and the like.

[00134] Third party data may be provided by a credit card provider. A credit card information request may be an implicit query, an active query, a disambiguation action, a retrieval function, a filtering function, a presentation function, a routing function, or another function or action relating to the initiation, processing, or completion of a search. The credit card information may be obtained from a database of mobile subscriber characteristics or from a credit card provider. The information may include information relating to current balances, credit limits, or the like. For example, an implicit query may present results based on the available credit balance for a user, such as presenting searches or results for expensive goods for a user who has a low balance and high credit limit, while presenting searches or results for financial counselors for users who have high balances and low credit limits.

[00135] Third party data may be provided by a supermarket or pharmacy. Supermarket or pharmacy information related to a user may be obtained from a database of mobile subscriber characteristics or from a supermarket or pharmacy loyalty program or reward card program. Supermarket and pharmacy shoppers, as well as other retail shoppers, may be provided incentives to participate and provide personal information that may be used by the system, including but not limited to cash back incentives, discounts, coupons, loyalty programs, or some other type of incentive. For example, the use of reward card may indicate the frequency of a shopper's visits to a particular retailer. The third party data may include information relating to brand loyalty, coupon use, or what type of shopper the user is (e.g., "bargain" or "sale" shopper). For example, an information request may present results based on whether the shopper is brand or generic prescription shopper, which may then assist in selecting an appropriate advertisement.

[00136] Third party data may be provided by a mail order catalog retailer. Mail order catalog information related to a user may be obtained from a database of mobile subscriber characteristics or from the mail order catalog retailer itself. For example, a chef may be categorized as an “amateur” or “professional chef,” and the like on the basis of prior behaviors such as purchasing certain kitchen equipment from a mail order catalog.

[00137] Third party data may be provided by a cable or settop box provider. Television information related to a user may be obtained from a database of mobile subscriber characteristics or from the cable or settop box provider. For example, an information request may present results based on whether the shopper is a brand or generic prescription shopper, which may then assist in selecting an appropriate advertisement. For example, the chef described above may be categorized as an “Italian chef,” in addition to “amateur” or “professional chef,” on the basis of prior behaviors such as watching Italian cooking television programming.

[00138] Third party data may be provided by consumer healthcare databases. Although a data platform or server may actively exclude content from ‘sensitive’ categories, such as raw data relating to medical or health information, a healthcare database may operate at a zip code level. For example, an information request may present results on the number of bike-related injuries reported within a zip code.

[00139] Third party data may be provided by referring URLs. A referring URL may collect browse activity of a user. For example, it has the ability to analyze browse traffic to understand the content and nature of pages being visited.

[00140] User ID combining may include accepting user IDs into the receipt database in both real-time and batch. The receipt database may be able to integrate user IDs from any source. The sources may include search streams, ad interactions, browse activity, wireless carriers, and other third party data. Such user IDs may provide insight into general user interest over time and illuminate immediate and evolving user needs. The combining of user IDs may identify longer term and real time interests which may provide time-sensitive targeting opportunities. An example may be as follows: a user ID reaches the minimum threshold of appearances from a particular location. If the location is identified as a restaurant, the targeting opportunities for other local restaurants relevant to the user associated with the user ID is limited to the window of real-time associated with the meal. If received in batches, the window of time associated with the user ID may be longer.

[00141] Validating data may also include bridging from other ad networks to understand what type of environment the device is in (such as work, home, or outdoors). The platform

may correlate environment with the user back to an ad network. For example, a user may receive advertisements suitable for one of those environments (such as receiving work-related information while at work and consumer information while at home). If the user is far from home and work, then the user may receive advertisements that are pertinent to travel in the location where the user is located, such as hotel, car rental, and restaurant information.

[00142] In embodiments, the server 1105 then communicates the first user identifications 1107 and second user identifications 1108 through communication signal 1109 to receipt database 1110. The first user identifications 1107 and second user identifications 1108 include geography associated with the same user.

[00143] Determining what environment the device is in is primarily based on geography. The geographic coordinates may be determined through GPS, triangulation, and or WiFi triangulation. The geography may also be determined by a user-entered location or a plurality of locations, such as geographic regions including one or more states, or one or more cities.

[00144] Determining what environment the device is in may also be determined by time of day. A geography may be associated with the time of day at which the geography was obtained. For example, if user IDs make a minimum number of appearances from a non-mobile device at 11:00 AM at a given geography, it is likely the geography is a work environment. If user IDs make a minimum number of appearances from a mobile device at 7:00 at a given geography, it is likely the geography is a home or social environment.

[00145] In embodiments, the first user identifications 1107 and second user identifications 1108 are transmitted through communication signal 1109 to receipt database 1110. The first user identifications 1107 and second user identifications 1108 may be delivered to an outside entity. Outside entities which may purchase or bid for such user identifications include a carriers, webpage publishers, application providers, advertisers, ad networks, ad servers, and data providers.

[00146] When user IDs have been validated, such information may be valuable to advertisers. In embodiments, an ad interaction as a source may include collecting data about a given user's interaction with advertising. The ad interaction data may allow the system to expand the knowledge of a user to include consideration for the type of advertising they are most likely to respond to. The information may be analyzed and provided as an element within the summarized user profile. An example may be as follows: a user ID is received with an advertisement source, context of the ad, and ad type. Examples of an advertisement source may be a primary ad server. A context may be where the ad was displayed, and

examples of context may be a sports portal, a third party site and the like. An ad type may be details of the ad. Examples of ad details may be text, static graphic, interactive, and the like.

[00147] The user ID may also include a trigger and ad success with the interaction data. The trigger is what the ad was served in response to. Examples of a trigger may be search, context, behavior, demographics and the like. An ad interaction may describe the ad success. Examples of an ad success may be click, conversion and the like.

[00148] When user IDs have been validated, such information may be valuable to advertisers. Specifically, a server may indicate that an ad was delivered to a particular user associated with the user IDs. Count-on download techniques validate whether an ad was delivered. Count-on download functionality helps in reducing the discrepancies and providing clients with more accurate numbers for inventory, forecasting, and delivery. It facilitates the ability to count the ad impressions when the advertisement gets fully executed or downloaded to a user's device. For example, when a user is selected to receive an ad, count-on download indicates when the ad has been received. Count-on download is relevant for third-party ad servers. The discrepancies that surface after comparing reports from third-party ad servers are reduced based on the ad-tags that count-on download attaches to an ad. It may be important that all relevant information regarding an ad campaign and the ads themselves is collected to ensure accurate reports and inventory. The need of matching and comparing requested creative delivery to actual verified delivery is taken care of by this functionality. Count-on download functionality also facilitates frequency capping and delivery goals to be set on the verified delivery. This means that when entering the frequency settings, the definition of impressions for the advertisements set for verification are actually only those verified and not those requested.

[00149] If the selected advertisement is an image, the delivery engine returns an ad-tag as the response to the initial ad request, where the ad-tag includes the following:

%%SERVER%%	Server's host name
%%PAGE%%	OAS pageURL
%%RAND%%	Cache busting random number
%%POS%%	Position Name
%%CAMP%%	CampaignID
%%IMAGE%%	Creative file name
%%USER%%	User identifier
%%DIM%%	Creative dimension

Counting occurs only after the delivery engine processes this request.

[00150] Other methods of determining if an ad was successfully delivered to the right user are pixel tagging and bandwidth determination. For example, in bandwidth, if a user is in a slow connection or fast connection, an ad network may change what data is served. An example of pixel tagging determination would be if a data exchange has an Android user who is male, but the pixel comes back as an iPhone from a female.

[00151] In embodiments, the first user identifications 1107 and second user identifications 1108 are transmitted through communication signal 1109 to receipt database 1110. The first user identifications 1107 and second user identifications 1108 may be delivered to an outside entity via a bidding platform.

[00152] A network or platform may rank user IDs to determine validity. Ranking may be based on data points as opposed to ranking based on the data provider and can validate the quality of third party data. The rankings of user IDs may be combined in a variety of ways, or weighted based on the data provider. For example, a third party retail data provider may be ranked higher than a consumer health database provider, based on the sensitivity of the data. Such ranking may be used for bidding purposes, but also may be used from a supply side platform. Supply side platforms include receipt databases.

[00153] A bidding platform may be associated with the receipt database 1110 and/or a monetization platform. The bidding platform may be included within the monetization platform. The receipt database may propose as financial consideration a portion of revenue from bidding to be provided to the monetization platform. The ad server may provide a request for verified user IDs to the monetization platform and in response to the request, the monetization platform may identify minimum bids for the user IDs. The minimum bids may be associated with various aspects of the user IDs. For example, minimum bids may be established for user IDs associated with a tablet device. Based on the results of bidding for the requested user IDs, the monetization platform may provide one or more deliveries of the user IDs to the ad server.

[00154] Automated media planning techniques may fulfill ads efficiently to valid user IDs. An automated media planning system is a reservation system based on supply and demand. Automated media planning allows advertisers to determine the sites that will generate the best return on investment for their ad campaigns. Rather than running their ad campaigns on the generic run-of-network content channels that are provided by many ad networks, the use of automated media planning permits advertisers to create customized advertising channels based on their contextual, geographic, demographic and performance preferences. It allows

advertisers to automatically allocate their advertising budget across all the sites in their media plan. Each budget allocation is calculated based on several performance factors that include reach, click-through rates, price, relevancy and ratings. Advertisers can manually edit individual allocations if they choose. For example, an advertiser may allocate more funding to a more popular ad based on current click-through rates.

[00155] The difference between a real-time bid and an automated media plan is there is no negotiating. It is matching supply and demand based on a campaign, not an impression. It may be equated to a financial market reserving a block of inventory in a commodities market.

[00156] Opening mobile inventory to existing exchanges may bring visibility into current pricing. Combining the opening of mobile inventory with an automated media plan may be based on a future event or holiday, for example. It may function well in a market where there is scarcity. It may permit cross-screen inventory to operate at a premium, which is also known as high frequency trading.

[00157] Internet Protocol (hereinafter, "IP") targeting is for device agnostic targeting. It requires a private setting, not commercial wireless access; axis frequency, which refers to the number of requests; and the number of devices to user agents. These requirements may determine if the data is homogenous. An ad network may attach data to IP targeting, wherein individual data is reflected back to the IP target. Out-of-network users are unidentifiable at this user level.

[00158] An ad network may decide what data to reflect back to the IP tag. Lifestyle and life stage data is very portable back to an IP tag. To manage this reflection, such data may have to reach a relevancy score to be considered valid with the IP tag.

[00159] To further target users constantly changing devices and locations, hyper targeting may be utilized. Hyper targeting refers to the ability to deliver advertising content to specific interest-based segments in a network. Hyper targeting is also the ability on social network sites to target ads based on very specific criteria. Advertisers are offered the option to direct their ads to subcategories self-identified by users in their profiles including music, sports, and movies. For example, rather than simply targeting movie lovers, advertisers could send ads based on the preferred genres like horror, romance, or comedy. The general field of hyper targeting draws information from three sources: registration, basic data gathered when users register for site access (e.g., age, gender); profile, detailed content completed by active users (e.g. favorite movies, activities, brands); and behavioral history, data gathered from online activities like sites visited, purchases made, groups joined, etc.

[00160] Hyper targeting may be expanded to hyper-local targeting. Hyper local targeting and retargeting may pull ad inventory together, create a saleable audience, and may reconcile with behavioral retargeting. This is a contextual analysis of a geographic location, in which a network may infer qualities about a new user who is at those particular locations. For example, WiFi coordinates assist in hyper-local targeting. The following examples and devices may be used in conjunction with hyper-local targeting and retargeting: tiles for geographic locations as opposed to zip-based targeting, wherein latitude and longitude degrees indicate spaces (tiles) within a geographic location; near field communication; quick response (QR) codes; audible signals emanated by a television; goggles and device cameras, wherein the goggles allow user to search by taking pictures; check-in points via social media applications; and WiFi within a building or location determined by triangulation.

[00161] Fingerprinting applications may also be used in conjunction with hyper-local targeting. For example, a user has a device in use before a movie begins in a movie theatre. During the pre-show viewing, the device may fingerprint the user's location based on the audio from the pre-show advertisements and trailers.

[00162] Games and social media may also provide new targeting parameters. Such applications may determine demographics about a user based on friends or other users within an application. For example, the words played in Words with Friends may provide new contextual targeting to any of the participants in the game.

[00163] Adaptive advertising may create hyper targeted campaigns. It may localize media by geography, serve the right ad at the right time on the right day, deliver the right ad to each audience, and provide detailed reporting and real time engagement analysis. Adaptive advertising may incorporate rich media.

[00164] Other hyper targeted campaigns to users on multiple devices include a customized "Sunday circular." A circular integrates targeting and data overlays, as well as demographics and geographic locations. The circulars may contain related products and has the ability to show an unlimited number of products. For example, the primary grocery shopper in a household will receive a different circular than other members of the same household.

[00165] Another way of hyper targeting is through a beacon. A beacon is feedback provided directly by the user. It indicates how a user responds to an ad, and correspondingly sends data based on cursor position within the ad. It may also use eye tracking to see where the user's eyes are on the page or ad, and use facial recognition to tell the user's emotional reaction to the page or ad, such as happy, sad, or scared. A beacon may also access the

accelerometer in a device to tell whether or not the user looked at the ad. For example, it may indicate whether a user responded with a smile to a humorous ad.

[00166] A facial recognition algorithm scans the image and detects curves, points, wrinkles and contours and infers the 3D shape of a face. This way, any pose angle in future photos can be accommodated as the 3D model can simply be rotated to the same angle as the original photo for comparison purposes.

[00167] A first system developed to overcome the deficiency in the prior art is bridging. A bridge is a system of linking two different Internet platforms so that both platforms may coexist harmoniously on a single device or from device to device. A bridge brings an audience to advertising agencies and networks via mobile, PC-online and off-line data.

[00168] A bridge leads platform convergence, which includes mobile, PC, and television, with mobile at the epicenter. The invention's strategy is to bridge technology for these three platforms to create an unparalleled interactive experience for mobile users. To accomplish this, an advertising network may offer complete campaign management including: concept, creation, delivery, billing, technology, performance analysis, and customer service to publishers and application and game developers.

[00169] A bridge may be established by a hybrid smartphone application. A hybrid application is a mobile website embedded into a downloadable application. It is a combination of web page and application that uses HTML5 and native functions of the smartphone to allow the application and web page to exist side by side, using the best features of a web page and application together. This may permit media brands to have a greater interaction with their customers while delivering an engaging user experience.

[00170] The web page exists within the application through a web widget. The widget renders web pages within the application. The web page with application does not share the same cookie pool as its web page outside the application.

[00171] A major component of bridging is online game play. Game developers are seeking a transition between web pages and social media sites that offer games to smartphones, as well as a transition of the game experience between different makes of smartphones. A bridge transitions a game in JavaScript to HTML5-based applications for various mobile and social media platforms.

[00172] A second major component of bridging is shopping and commerce. To reach consumers from their televisions or print media to their mobile devices, shoppers may scan a bar code presented on a television or print advertisement, which then redirects them to a web page or application download. Consumers may also "clip" coupons with a text message

when they see a short code (a truncated phone number) in television, print, on-package, online and mobile advertisements. Then, texting the code instantly loads the coupons onto consumers' loyalty cards from participating merchants. The coupons are automatically redeemed when shoppers swipe their loyalty cards at checkout.

[00173] Bridging may also transition between location data, social media, and shopping incentives. For example, FIG. 13 shows a first user checking into a location on a social media site and the user says, "I'm at Starbucks Coolidge Corner (277 Harvard Street/Beacon Street, Brookline, MA)." A second user sees the first user's location, and when this information appears, a companion text appears.

[00174] Companion advertisements have many possibilities. The check-ins themselves provide geocode information, so that if there is no current advertisement for a specific location, the advertising network may find a nearby one. For example, if the check-in was at an independently run restaurant that has no current coupon, the advertising network might offer a coupon for the closest Starbucks.

[00175] Bridging is valuable to an advertising network because it allows the network to reach audiences more effectively. An advertising network may aggregate mobile "endemic data." For example, an advertising network receives interest data from publishers in its network. The advertising network may also aggregate data from web pages and applications that are outside its network as another vantage point on the users it encounters. Wherever possible, these relationships may span PC-online and mobile. If a log-in is available, the advertising network will seek to gain access to match keys and make additional links between PC-online and mobile. The data that the advertising network amasses will be made available to its advertisers so that the advertisements may better reach the target audience.

[00176] FIG. 14 is an example of a present embodiment. Bridges 1, 2, and 3 are created when the advertising network identifies a user on mobile web and in a mobile application with the same carrier ID. Example: Carrier ID: O:J O:H H:J.

[00177] Another system developed to overcome the deficiency in the prior art is smart traffic. An advertising network may direct their advertising via "smart traffic." Smart traffic is the determination of which advertiser to give the impression based on available budgets and available space. This is a targeted form of inventory optimization, in which an advertising network maximizes the value of a perishable good.

[00178] FIG. 15 is an illustration of this particular embodiment. Process shows how advertisements are pushed to mobile devices. Advertisers provide their budgets 1501 to advertising network 1503. Publishers provide available space 1502 for advertisements on

their applications to advertising network 1503. Based on an inventive algorithm, advertising network 1503 will then accommodate the best pairings of budget 1501 and space 1502 and optimally present the advertisements on a display of mobile device 1504.

[00179] An advertising network may use multivariate click and conversion history to optimize its yield optimization. This process is to improve the current yield optimization algorithm. To determine an accurate calculation of click through or conversion rates, an advertising network must first be able to categorize impressions. This is so that it can improve the targeting of the impression to improve the probability that an advertisement is clicked and an action is taken. Second, it needs a practical way to match impressions with ads. Since each impression is a combination of multiple features describing the category of the impression, all relevant combinations will need to be matched with corresponding advertisements. As the number of impression features increases, so does the number of matches to calculate click through rate. An advertising network may develop a hybrid of static offline metrics with real time online information. The algorithm may use a maximum of 4 GB of memory for real time calculations.

[00180] FIG. 16 is an illustration of this particular embodiment. The process shows a distinguished method of how advertisements are pushed to mobile devices. Information or parameters including, but not limited to, users' purchase history 1601, real time information 1602 and/or offline information 1603 can be submitted to advertising network 1604 for it to determine whether an advertisement should be pushed to mobile device 1605 or not. Purchase history 1601 includes, but not limited to, online purchases and physical purchases in the past or for a particular period of time. Real time information 1602 includes, but not limited to, real time usage pattern, real time usage behavior, etc. Offline information 1603 includes, but not limited to, offline usage pattern, offline usage pattern, etc.

[00181] Another system developed to overcome the deficiency in the prior art is collaborative filtering. An advertising network may use collaborative filtering. Collaborative filtering is the process of filtering for information or patterns using techniques involving collaboration among multiple agents, viewpoints, and data sources. Applications of collaborative filtering typically involve very large data sets. Collaborative filtering is a method of making automatic predictions, the filtering, about the interests of a user by collecting preferences or taste information from many users, the collaborating. The assumption of the collaborative filtering approach is that those who agreed in the past tend to agree again in the future. For example, a collaborative filtering for television tastes could make predictions about which television show a user should like given a partial list of that

user's likes or dislikes. These predictions are specific to the user, but use information gleaned from many users. This differs from a simpler approach of giving an average score for each item of interest, such as based on a number of votes.

[00182] FIG. 17 is an illustration of this particular embodiment. The process shows another distinguished method of how advertisements are pushed to mobile devices. Advertising network 1704 gathers users' interests from devices 1701, 1702 and 1703 and use these gathered interests to make a prediction on what mobile device 1705 might like when mobile device 1705 displays a similar user interest as that of user 1, user 2 and user 3.

[00183] Another system developed to overcome the deficiency in the prior art is advertisement affinity. An advertising network may identify users who interact with one advertisement to determine who will interact with another type of advertisement. Affinity targeting is simply a way of targeting advertisements. It is a method of maximizing clicks, and profits of online advertisement affinity focuses on the attitude of website visitors toward online advertising. It further suggests that if a user likes a certain web page more than others, he will not only devote more time on that site but also be more receptive to its advertisements. A network may measure the connection between user attitude towards websites and their online advertisements. High-affinity visitors are expected to exhibit the following characteristics: users spend more time at the page; users are more positive toward the page and its content; and users are more positive toward advertisements on the site.

[00184] What makes a user take a liking to a certain website depends on many things, but if users become loyal to an affiliate site, the conversion rate most definitely will increase. Visitors will not click on banners and ad-links just because they like the web page, but when people normally are restricted and skeptic toward an advertisement, a web page's loyal visitors will more receptive to the advertisement and its message.

[00185] A publisher of a web page may use similar data in conjunction with an advertising network. If a user has already shown interest in what a publisher has to offer, should an advertising network show the user a way back to the publisher's page, the user is more likely to follow through. This results in increased click through rates. The system may flow like this example: 1) Publisher, "P" has an active publisher account with Advertising Network, "A." 2) P has created an advertiser account with A and has set up a campaign with the intention of pulling users into its web page (or application), via advertisements such as "Visit (name of page)!" or "Play (name of application)!" 3) User "U" is browsing or playing P's web page or application, and is served advertisements from A. A notes that an interaction has taken place between U and P. 4) U jumps to another publisher's website or application,

which also has an active account with A. A identifies that U has switched publishers, recalls the U/P interaction, and then serves advertisements per P's campaign to U.

[00186] No special integration is required on behalf of the publisher with the advertising network. The existing account is sufficient. The advertising network may either explicitly permit the publisher to turn on this feature per campaign, allowing the advertising network to charge an additional fee. The advertising network may alternatively turn on this feature per campaign implicitly to increase click through rates to gain revenue.

[00187] Another system developed to overcome the deficiency in the prior art is probabilistic attachment of attributes. Probabilistic attachment of attributes involves clustering users based on attributes gathered from various data providers and assigning values to unidentified attributes based on probability. Users are identified through selected attributes and grouped into clusters for better advertisement targeting. The attributes can be selected from, but not limited to, first party data such as handset, location, browsing behavior, etc. and/or third party data such as demographics, purchase behavior, and/or interests such as outdoor activities or electronics, etc. Once the users are in a cluster, additional attributes can be gathered or selected from first or third party data to further identify the users' habits and behaviors through probability. Specifically, a user may have unknown values for a particular attribute, the system will then provide a value for the user on the particular attribute based on highly correlated and similar users.

[00188] More specifically, this invention is broken down into two phases. The first phase is clustering and the second phase is dataset merging. In clustering, all users in each dataset are used to generate clusters using a multi-attribute method. High level analysis of quality of the clusters is performed by calculating inter-cluster distances for all pairwise combinations of clusters, and intra-cluster distances & densities for each cluster by sampling. Clusters may be merged based on pairwise comparison of inter-cluster distances and pairwise comparison of user level correlations. All users in unmerged clusters are considered to look alike with higher probability of match than users in merged clusters. The attributes for the users in each cluster may be recommended to other users in the same cluster. In dataset merging, when merging datasets with some users being common between datasets, clusters are developed independently for each cluster. Users that are common users between datasets are identified. All clusters with common users are identified. Common users get the combined set - union of attributes from the corresponding datasets. The union of attributes is propagated to all users in the corresponding clusters in the merged datasets. The probability of match for the propagated data is lower than the union of attributes for common users. Users in clusters that

do not have any users that are common between datasets are merged with the most closely correlated cluster. The propagation of attributes for these users has the least amount of confidence. Correlation of the same cluster with just the common users and all users is used to generate the probability value for the propagated users.

[00189] FIG. 18 is an illustration of this particular embodiment. Data providers 1801 and 1803 store information relating to users in tables 1802 and 1804, respectively. Data providers 1801 and 1803 may be, but not limited to, carriers (e.g., providing service to a user's device), operators, publishers, advertisers, or any entity that stores any relevant information regarding any user. The information data providers 1801 and 1803 store includes, but not limited to, interests, habits, patterns, dislikes, etc. In this case tables 1802 and 1804 have identified the possible interests as basketball, football, fishing, cosmetics and travel. "O" indicates that the person has such interest and "X" indicates that the person has no such interest. A blank space indicates that the data provider has yet to collect the particular information. Server 1805 collects tables 1802 and 1804 from data providers 1801 and 1803, respectively and compiles them into table 1806. Table 1806 automatically expands its rows and columns to accommodate any newly identified interest even if no "O" or "X" has been assigned to the user. Here, server 1805 includes the football column from table 1802 and cosmetic column from table 1804 in table 1806 even though Kevin's interests in football and cosmetics are unknown. Server 1805 further makes a probabilistic estimate on John's interest in travel and Kevin's interests in cosmetics. Based on the probabilistic estimate, server 1805 makes a determination on whether John will like travel and whether Kevin will like cosmetics and marks the interests with an "O_LA" or "X_LA" according to the estimation. "O_LA" represents a possibility of interest in a certain category and "X_LA" represents a possibility of no interest in a certain category. LA stands for "look alike" in this particular context. "O_LA" and "X_LA" are used rather than "O" and "X" because the probabilistic estimates are just estimates rather than concrete identification of interests. This is important because server 1805 needs to know which interests are added based on probabilistic estimates and which are collected from data providers for future corrections through live campaigns.

[00190] When server 1805 collects table 1802 and table 1804, it will use one of table 1802 and table 1804 as a base table to construct table 1806. In this example, server 1805 chooses to use table 1802 as the base table, however, server 1805 could have used table 1804 as the base table. The choice is arbitrary. Since server 1805 uses table 1802 as the base table, the information in table 1806 that came from table 1802 would not be altered. However, table 1806 has populated the originally blank spaces in table 1804 with estimates. Additionally,

although the users here are identified through their first names in tables 1802, 1804 and 1806, they can be identified through other methods including, but not limited to, profile ID, carrier ID, hardware ID, manufacturer ID, hashed code ID, hashed email ID, etc. The IDs can also be encrypted so that the no personal information will be revealed.

[00191] With respect to Kevin, Kevin's interest in cosmetics has been populated with an "O_LA" because server 1805 has identified that the most similar user, Sam, has an "O" in cosmetic. Sam is identified as the most similar user because by examining the interests in both table 1802 and table 1804, Sam is almost identical in all interests except for football. Even if John had an "X" in fishing, Kevin's interest in cosmetics would still be "O_LA" because Sam is still the most similar user. However, if John had an "X" in fishing and "O" in travel, then Kevin's interest in cosmetics would remain blank. The fact that cosmetics is a different genre of interest from sports like, basketball, football, fishing and baseball is not a consideration for server 1805 in making the probabilistic estimates. This is because server 1805 will conduct live campaigns in the future to verify whether such probabilistic estimates are in fact correct.

[00192] With respect to John, John's interest in travel has been populated with an "O_LA" because server 1805 has also identified that the most similar user, Sam, has an "O" in travel. Although John and Sam's interests are not similar to a degree like that of Kevin and Sam's, as long as the degree of similarity is within an acceptable threshold, server 1805 will assign "O_LA" or "X_LA" to the particular interest. Alternatively, if the degree of similarity is below the acceptable threshold, server 1805 would simply leave the interest blank.

[00193] Targeted advertising may then be implemented by selecting advertisements relating to the newly identified interests and transmitting the advertisement(s) to any of the one or more communication devices associated with the user. The advertisement(s) may be displayed in the context of web pages, applications, and other mediums, as is known in the art. It is to be understood that the various attributes obtained from data provides may include other items instead of or in addition to just interests (e.g., hobbies). For example, attributes that may be correlated may be demographics, including online behaviors (e.g., viewing habits, browsing habits, transaction/shopping habits, etc.) and other personally identifiable data, as listed in the prior-filed applications listed above and incorporated herein by reference. Furthermore, similarities between the attributes may be contextual, contemporaneous, logically, numerically, etc. based.

[00194] Since the newly identified interests are calculated based on probability, verification may be needed to ensure the newly attached interests are in fact true. One way of

doing so is through A/B testing in live campaigns. Live campaigns determine whether the user is receptive of the advertisements pushed based on newly assigned interests. This live campaign can be conducted throughout a predetermined period of time or any dynamic testing environment. In FIG. 18, Kevin has been identified as potentially having an interest in cosmetics and so server 1805 will constantly push cosmetic-related advertisements to Kevin for the next week or month. The advertisements may be regarding, but not limited to, discounts for makeup, promotional sales, exclusive events and any celebrity-related merchandise. If, throughout the next week or month, Kevin does not exceed a predetermined threshold (for example, 5 times or 0.5% of the impressions shown, etc.) through conversion (for example, click on the advertisements, purchase the merchandise advertised, etc.) over the next week or month, multiple results could occur: 1) an "X" would replace the estimated "O" in table 1806 or 2) the estimated "O" would be eliminated from in the cosmetic column and leaving the space blank.

[00195] Another system developed to overcome the deficiency in the prior art is bumping. An advertising network may use bumping devices to reach users. Tapping two smartphones together may transfer information, music, and even money. Smartphones may recognize tapping motions and map them. When a bump is recognized, a signal is sent to cloud servers that match it with another bump that occurred at the exact same place and time. It decides those two bumps are a match, and exchanges information between them.

[00196] Users may need to log into secure account settings to use a bump feature. Upon a successful bump, an advertising network may access additional data about a user to add to the user's hashed identification.

[00197] Another system developed to overcome the deficiency in the prior art is user prediction. An advertising network may predict a user's web page or application destinations. By identifying a user's repetitive behavior, a network may prepare in advance to send targeted or customized advertisements to a user.

[00198] Another system developed to overcome the deficiency in the prior art is photo metadata. An advertising network may use photo metadata to develop profiles and customize advertisements. Photos, taken from a user's photos available online, may be added to an advertisement for a specific user. Regardless of the format, these files can store not only image data but also information about the images. Metadata is, literally, data about data. When included in image files, this information is photo metadata.

[00199] Metadata is actually part of the image file, effectively a bundle of image data and information about that image. Digital photo files can include descriptive, technical, and

administrative classes of metadata of several types. These can list an image's creator, copyright holder, source and description. They may also explain rights released and available to an image; how and when an image was created; and its size, color characteristics and more. Embedding and preserving photo metadata can prevent and solve many issues confronting photographers and others who work with digital images.

[00200] FIG. 19 is an illustration of this particular embodiment. The process shows another distinguished method of how advertisements are pushed to mobile devices. When a user takes a photo, the photo can be parsed into multiple photo metadata and the metadata can be analyzed accordingly. As advertising network 1904 gathers photo metadata 1902 to 1904, advertising network 1904 will use it to make a prediction on what mobile device 1905 might like and push the appropriate advertisements.

[00201] Thus, an appropriately configured system may perform the steps of (a) receiving at least one photo taken by a user via a mobile communication facility; (b) extrapolating at least one photo metadata from the at least one photo; (c) determining that a pre-existing universal profile has not been created for the user; (d) creating a user profile for the user; (e) storing the at least one extrapolated photo metadata in the user profile; and (f) providing advertisements to the user based on the at least one extrapolated photo metadata.

[00202] Another system developed to overcome the deficiency in the prior art is real time streaming. An advertising network may use real time stream processing to produce profiles. A profile is updated in real time in accordance with the action the user just took, whether it was surfing web pages, completing a purchase, or uploading a picture. The profile is refreshed in real time to include the new information to better target advertisements upon the user's next action.

[00203] Another system developed to overcome the deficiency in the prior art is advertisements caching. An advertising network may cache advertisements. It may preload advertisements, then fire the data at a later time, often based on a user's predicted destination. The delivery of an advertisement to a browser from local cache or a proxy server's cache. When a user requests a page that contains a cached advertisement, the advertisement is obtained from the cache and displayed.

[00204] Another system developed to overcome the deficiency in the prior art is sequential targeting. An advertiser may want to sequentially target a particular user on a plurality of screens. For example, an advertiser may have five advertisements that relate to the same product or service that should be viewed in a particular order. The advertising network may fire advertisements 1, 2, and 3 to a user while on his mobile device, then fire advertisements 4

and 5 when the user is on his PC. This method ensures the user will see all five advertisements without repetition.

[00205] As advertisements appear across a plurality of devices, there is a growing need for improved methods of paying for these advertisements. A smart pricing strategy for advertisers encompasses a smart pricing system that presents a platform for bidding in real time, wherein the platform offers competitive bidding for advertising space on a multitude of devices. The devices include, but are not limited to, smartphones, mobile phones, tablet devices, PCs, gaming devices, and televisions.

[00206] To achieve the smartest pricing, an advertiser gives a maximum it is willing to spend, and the advertising network makes sure to spend the maximum while simultaneously garnering the greatest click-through rate possible. As mentioned above, this spending is typically performed on a bidding platform. To manually override the platform is known as dumb pricing.

[00207] Similarly, smart pricing may optimize an advertiser's spending across multiple devices depending on the advertiser's audience. The smart pricing strategy may target 5% of the advertisements to mobile phones, while 95% to tablet devices.

[00208] The goal of any advertising or smart pricing is to achieve a conversion. A conversion is the action intended by the site owner, typically a user making a purchase. Should a Retargeting is a form of online targeted advertising by which online advertising is delivered to consumers based on previous Internet actions that did not previously result in a conversion. However, when a conversion does result, an advertising network may use alternative or post sale actions to create additional conversions. A third party may take the conversion data to create new events or incentives around a completed purchase.

[00209] Similarly, incentives may be used to opt into advertising or targeting through bridges. For example, a user opts in on his phone in exchange for a free reward. When the user access a web page from a PC, his opt in status will travel with him from mobile web to PC web.

[00210] In various embodiments, information from third party may be provided by a loyalty program or reward card. Supermarket and pharmacy shoppers, as well as other retail shoppers, may be provided incentives to participate and provide personal information that may be used by the system, including but not limited to cash back incentives, discounts, coupons, loyalty programs, or some other type of incentive. For example, the use of reward card may indicate the frequency of a shopper's visits to a particular retailer. Furthermore, the

reward card number or bar code may be presented directly from a mobile communication facility.

[00211] If a reward card is presented via a mobile communication facility, it may be part of a mobile wallet. A mobile wallet's capabilities include a tap-to-pay feature; the ability to link credit and debit cards; storage of all loyalty or rewards cards and identification numbers; integration with third party applications; and secure elements on the SIM card rather than the phone itself. A user also has a PIN code option to protect all purchases on the mobile communication facility.

[00212] A mobile wallet may also support coupon storage. Coupons may be deposited with or without action by the user of the mobile communication facility. A coupon may also be added via a URL. An advertisement may insert a coupon, either by linking directly to it and allowing the or by using a special link that assures the web browser opens to present the URL.

[00213] A user may create a mobile wallet within an application. For example, applications such as Key Ring allow a user to scan and store existing loyalty cards, enroll in new loyalty programs, and access exclusive coupons and discounts. The user's shopping habits as recorded through use of the mobile wallet may be used to target advertisements.

[00214] The methods and systems described herein may be deployed in part or in whole through a machine that executes computer software program codes, and/or instructions on one or more processors. The one or more processors may be part of a server, client, network infrastructure, mobile computing platform, stationary computing platform, cloud computing, or other computing platform. The processor(s) may be communicatively connected to the Internet or any other distributed communications network via a wired or wireless interface. The processor(s) may be any kind of computational or processing device capable of executing program instructions, codes, binary instructions and the like. The processor(s) may be or include a signal processor, digital processor, embedded processor, microprocessor or any variant such as a co-processor (math co-processor, graphic co-processor, communication co-processor and the like) and the like that may directly or indirectly facilitate execution of program code or program instructions stored thereon. In addition, the processor(s) may enable execution of multiple programs, threads, and codes. The threads may be executed simultaneously to enhance the performance of the processor(s) and to facilitate simultaneous operations of the application. The processor(s) may include memory that stores methods, codes, instructions and programs as described herein and elsewhere. The processor(s) may access a storage medium through an interface that may store methods, codes, and instructions

as described herein and elsewhere. The storage medium associated with the processor(s) for storing methods, programs, codes, program instructions or other type of instructions capable of being executed by the computing or processing device may include but may not be limited to one or more of a CD-ROM, DVD, memory, hard disk, flash drive, RAM, ROM, cache and the like.

[00215] The methods and/or processes described above, and steps thereof, may be realized in hardware, software or any combination of hardware and software suitable for a particular application. The hardware may include a general purpose computer and/or dedicated computing device or specific computing device or particular aspect or component of a specific computing device. The processes may be realized in one or more microprocessors, microcontrollers, embedded microcontrollers, programmable digital signal processors or other programmable device, along with internal and/or external memory. The processes may also, or instead, be embodied in an application specific integrated circuit, a programmable gate array, programmable array logic, or any other device or combination of devices that may be configured to process electronic signals. It will further be appreciated that one or more of the processes may be realized as a computer executable code capable of being executed on a machine readable medium.

[00216] The computer executable code may be created using a structured programming language such as C, an object-oriented programming language such as C++, or any other high-level or low-level programming language (including assembly languages, hardware description languages, and database programming languages and technologies) that may be stored, compiled or interpreted to run on one of the above devices, as well as heterogeneous combinations of processors, processor architectures, or combinations of different hardware and software, or any other machine capable of executing program instructions.

[00217] Thus, in one aspect, each method described above and combinations thereof may be embodied in computer executable code that, when executing on one or more computing devices, performs the steps thereof. In another aspect, the methods may be embodied in systems that perform the steps thereof, and may be distributed across devices in a number of ways, or all of the functionality may be integrated into a dedicated, standalone device or other hardware. In another aspect, the means for performing the steps associated with the processes described above may include any of the hardware and/or software described above. All such permutations and combinations are intended to fall within the scope of the present disclosure.

[00218] Further, although process steps, method steps, algorithms or the like may be described in a sequential order, such processes, methods and algorithms may be configured to work in alternate orders. In other words, any sequence or order of steps that may be described in this patent application does not, in and of itself, indicate a requirement that the steps be performed in that order. The steps of processes described herein may be performed in any order practical. Further, some steps may be performed simultaneously despite being described or implied as occurring non-simultaneously (e.g., because one step is described after the other step). Moreover, the illustration of a process by its depiction in a drawing does not imply that the illustrated process is exclusive of other variations and modifications thereto, does not imply that the illustrated process or any of its steps are necessary to the invention, and does not imply that the illustrated process is preferred.

[00219] It will be readily apparent that the various methods and algorithms described herein may be implemented by, e.g., appropriately programmed general purpose computers and computing devices. Typically a processor (e.g., a microprocessor) will receive instructions from a memory or like device, and execute those instructions, thereby performing a process defined by those instructions. Further, programs that implement such methods and algorithms may be stored and transmitted using a variety of known media. When a single device or article is described herein, it will be readily apparent that more than one device/article (whether or not they cooperate) may be used in place of a single device/article. Similarly, where more than one device or article is described herein (whether or not they cooperate), it will be readily apparent that a single device/article may be used in place of the more than one device or article. The functionality and/or the features of a device may be alternatively embodied by one or more other devices which are not explicitly described as having such functionality/features. Thus, other embodiments of the present invention need not include the device itself.

[00220] The term “computer-readable medium” as used herein refers to any medium that participates in providing data (e.g., instructions) that may be read by a computer, a processor or a like device. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media include, for example, optical or magnetic disks and other persistent memory. Volatile media include dynamic random access memory (DRAM), which typically constitutes the main memory. Transmission media include coaxial cables, copper wire and fiber optics, including the wires that comprise a system bus coupled to the processor. Transmission media may include or convey acoustic waves, light waves and electromagnetic emissions, such as those generated

during radio frequency (RF) and infrared (IR) data communications. Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, any other magnetic medium, a CD-ROM, DVD, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, an EPROM, a FLASH-EEPROM, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read. Various forms of computer readable media may be involved in carrying sequences of instructions to a processor. For example, sequences of instruction (i) may be delivered from RAM to a processor, (ii) may be carried over a wireless transmission medium, and/or (iii) may be formatted according to numerous formats, standards or protocols, such as Bluetooth, TDMA, CDMA, 3G, LTE, WiMax. A non-transitory computer-readable medium includes all computer-readable medium as is currently known or will be known in the art, including register memory, processor cache, and RAM (and all iterations and variants thereof), with the sole exception being a transitory, propagating signal.

[00221] Where databases are described, it will be understood by one of ordinary skill in the art that (i) alternative database structures to those described may be readily employed, and (ii) other memory structures besides databases may be readily employed. Any schematic illustrations and accompanying descriptions of any sample databases presented herein are illustrative arrangements for stored representations of information. Any number of other arrangements may be employed besides those suggested by the tables shown. Similarly, any illustrated entries of the databases represent exemplary information only; those skilled in the art will understand that the number and content of the entries can be different from those illustrated herein. Further, despite any depiction of the databases as tables, other formats (including relational databases, object-based models and/or distributed databases) could be used to store and manipulate the data types described herein. Likewise, object methods or behaviors of a database can be used to implement the processes of the present invention. In addition, the described databases may, in a known manner, be stored locally or remotely from a device that accesses data in such a database.

[00222] Numerous embodiments are described in this patent application, and are presented for illustrative purposes only. The described embodiments are not intended to be limiting in any sense. The invention is widely applicable to numerous embodiments, as is readily apparent from the disclosure herein. Those skilled in the art will recognize that the present invention may be practiced with various modifications and alterations. Although particular features of the present invention may be described with reference to one or more particular

embodiments or figures, it should be understood that such features are not limited to usage in the one or more particular embodiments or figures with reference to which they are described.

[00223] In the foregoing description, reference is made to the accompanying drawings that form a part of the present disclosure, and in which are shown, by way of illustration, specific embodiments of the invention. These embodiments are described in sufficient detail to enable those skilled in the art to practice the invention, and it is to be understood that other embodiments may be utilized and that structural, logical, software, electrical and other changes may be made without departing from the scope of the present invention. The present disclosure is, therefore, not to be taken in a limiting sense. The present disclosure is neither a literal description of all embodiments of the invention nor a listing of features of the invention that must be present in all embodiments.

[00224] Although the invention has been described in detail for the purpose of illustration based on what is currently considered to be the most practical and preferred embodiments, it is to be understood that such detail is solely for that purpose and that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover modifications and equivalent arrangements that are within the spirit and scope of the appended claims. For example, it is to be understood that the present invention contemplates that, to the extent possible, one or more features of any embodiment can be combined with one or more features of any other embodiment.

WHAT IS CLAIMED:

1. A system for identifying a same user of multiple communication devices, the system comprising one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of:

(a) receiving data corresponding to a first plurality of web page visits via a first device operated by a user, wherein the first device is a mobile or non-mobile communications device;

(b) receiving data corresponding to a second plurality of web page visits via a second device operated by a user, wherein the second device is a mobile or non-mobile communications device;

(c) determining that the user of the first device is the user of the second device based on identifying that the first plurality of web page visits is substantially the same as the second plurality of web page visits; and

(d) selecting and transmitting a sponsored content to the second device for display thereon, wherein the sponsored content has a relevance to the first and second plurality of web page visits.

2. The system of claim 1, wherein the information relating to the plurality of web page visits includes one or more of:

(a) a URL of each respective web page;

(b) a time of visiting each respective web page;

(c) a duration of visiting each respective web page;

(d) an order in which each web page is visited; and

(e) a geographic location of the first and second device at the time of visiting each respective web page.

3. The system of claim 2, wherein the system is further configured to perform the steps of:

(a) determining that a pre-existing universal profile has not been created to identify that the first and second devices are used by the same user; and

(b) creating a universal profile for the user containing data corresponding to the first and second devices.

4. The system of claim 2, wherein the selection of the sponsored content is based at least on:

- (a) frequency capping;
- (b) cross-platform conversion tracking;
- (c) retargeted advertisements;
- (d) cross-platform retargeted advertisements; or
- (e) brand-impact data.

5. The system of claim 1, wherein the relevancy is further based on a user characteristic datum associated with the user.

6. The system of claim 5, wherein the user characteristic datum is selected from the list consisting of:

- (a) age, age-range, or birthdate;
- (b) gender;
- (c) race;
- (d) religion;
- (e) marital status;
- (f) area code of the phone number assigned to one of the first and second mobile or non-mobile communication devices;
- (g) zip code;
- (h) home address;
- (i) work address;
- (j) billing address;
- (k) type of credit card used to pay a carrier providing service to the mobile or non-mobile communication devices;
- (l) birthplace;
- (m) employer;
- (n) employment position;
- (o) income bracket of the user;
- (p) model of one of the first and second mobile or non-mobile communication devices; and
- (q) operating system of one of the first and second mobile or non-mobile communication devices.

7. The system of claim 1, wherein the mobile communications device is one of:

- (a) a cellular phone;
- (b) a tablet;
- (c) a portable media player; and
- (d) a laptop or notebook computer.

8. The system of claim 1, wherein the non-mobile communications device is one of:

- (a) television;
- (b) a cable box; and
- (c) a personal computer.

9. A system for identifying a same user of multiple communication devices, the system comprising one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of:

- (a) receiving data corresponding to a first application use-pattern from a first communication device operated by a user;
- (b) receiving data corresponding to a second application use-pattern from a second communication device operated by a user;
- (c) determining that the user of the first communication device is the user of the second communication device based on identifying that the first application use-pattern is the same as the second application use-pattern;
- (d) determining that a pre-existing universal profile has not been created to identify that the first and second communication devices are used by the same user; and
- (e) creating a universal profile for the user containing data corresponding to the first and second communication devices.

10. The system of claim 9, wherein the first or second application use-pattern corresponds to at least one of:

- (a) a set of applications used on the first and second communication devices;

- (b) an order of applications used on the first and second communication devices;
- (c) a time of day of use of one or more applications on the first and second communication devices;
- (d) a duration of application use on the first and second communication devices; and
- (e) a location of use of one or more applications on the first and second communication devices.

11. A system for identifying a same user of multiple communication devices, the system comprising one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of:

- (a) receiving first data corresponding to (i) a location of a first communication device operated by a user and (ii) a time of day at which the first communication device is situated at the location;
- (b) receiving second data corresponding to (i) a location of a second communication device operated by a user and (ii) a time of day at which the second communication device is situated at the location;
- (c) determining that the user of the first communication device is the user of the second communication device based on receiving the first and second data a predetermined number of times;
- (d) determining that a pre-existing universal profile has not been created to identify that the first and second communication devices are used by the same user; and
- (e) creating a universal profile for the user containing data corresponding to the first and second communication devices.

12. A system for identifying a same user of multiple communication devices, the system comprising one or more computers having computer readable mediums having stored thereon instructions which, when executed by one or more processors of the one or more computers, causes the system to perform the steps of:

- (a) receiving data corresponding to a first route associated with a first communication device operated by a user, wherein the first route is derived from a plurality

of geographic coordinates corresponding to respective locations at which the first communication device was situated;

(b) receiving data corresponding to a second route associated with a second communication device operated by a user, wherein the second route is derived from a plurality of geographic coordinates corresponding to respective locations at which the second communication device was situated;

(c) determining that the user of the first communication device is the user of the second communication device based on identifying that the first route is the substantially the same as the second route;

(d) determining that a pre-existing universal profile has not been created to identify that the first and second communication devices are used by the same user; and

(e) creating a universal profile for the user containing data corresponding to the first and second communication devices.