A system for validating user identifications is configured 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.
FIG. 2

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;

receiving at the data management platform, a plurality of second user
identifications associated with a second communication device accessed
by a second user;

determining the plurality of first user identifications via a pre-determined
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.
VALIDATION OF DATA FOR TARGETING USERS ACROSS MULTIPLE COMMUNICATION DEVICES ACCESSED BY THE SAME USER

CROSS REFERENCE TO RELATED APPLICATIONS


BACKGROUND OF THE INVENTION

[0003] 1. Field of the Invention

[0004] The present invention relates to targeting advertising to mobile and non-mobile communication facilities accessed by the same user and, more particularly, to the validation of a plurality of user identifications from a plurality of such mobile and non-mobile communication facilities.

[0005] 2. Description of Related Art

[0006] 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 even 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. New 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, or how to verify that the data received all relates back to a single user. 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 and no way to ensure the data is accurate. 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

[0007] Accordingly, the present invention 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.

[0008] 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.

[0009] The first or second user identification may be received from: (a) a carrier providing service to the first and second communication devices; (b) a website 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.

[0010] 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 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 birthday; (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.

[0011] 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.

[0012] In embodiments, the communication device 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, a 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.

[0013] 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

[0014] FIG. 1 is a diagram illustrating a system for receiving a plurality of user identifications at a data platform; and

[0015] FIG. 2 is a flowchart illustrating the steps of a current embodiment in accordance with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0016] The present invention disclosed herein relates to the domain of mobile communication facilities and non-mobile communication facilities accessed by the same user and to the domain of fulfilling advertising requests with targeted content across the various devices from various advertising inventories.

[0017] FIG. 1 depicts a wireless platform 100 for determining the validity of user identifications. The wireless platform 100 includes a first device 101, a second device 102, a server 105, and a receipt database 110. Although the first device 101 and the second device 102 communicate with server 105 and receipt database 110 through the Internet in this particular embodiment, other methods of communication are desirable. Additionally, the server 105 and receipt database 110 may be centrally located or geographically dispersed, locally and/or remotely interconnected, and may be integrated into a combined system.

[0018] In embodiments, the first device 101 and second device 102 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.

[0019] In an embodiment of the present invention, server 105 communicates with the first device 101 and a second device 102 to receive user identifications. The user identifications are communicated through communication signal 103 and communication signal 104 to the server 105. The server 105 then communicates the first user identifications 107 and second user identifications 108 through communication signal 109 to receipt database 110. Upon receipt at the receipt database 110, the receipt database 110 identifies based on a predetermined number of receipts that the first user identifications 107 and second user identifications 108 are associated with the same user. In embodiments, user identifications may be a hashed email address, a log-in, a username, a data provider identification, a media provider identification, or an Internet protocol. Hashing data or applying an encryption may provide anonymity to the user and their corresponding data.

[0020] 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 200 starts with step 201 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 202 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 203 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.

[0021] 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.

[0022] 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).

[0023] 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.

[0024] Combining 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.

[0025] 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 receive 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.

[0026] 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 it is not provided by the user.

[0027] 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.

[0028] 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.

[0029] 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.

[0030] 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.

[0031] 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.

[0032] 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.

[0033] 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.

[0034] 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.

[0035] 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.

[0036] 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 rout-
ing 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 bal-
cances, 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.

[0037] 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 sub-
scriber 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 infor-
mation 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.

[0038] 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 behav-
iors such as purchasing certain kitchen equipment from a mail
order catalog.

[0039] Third party data may be provided by a cable or
set-top box provider. Television information related to a user
may be obtained from a database of mobile subscriber char-
acteristics or from the cable or set-top box provider. For
example, an information request may present results based on
whether the shopper is a brand or generic prescription shop-
per, which may then assist in selecting an appropriate adver-
sitement. 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.

[0040] 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 health-
care 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.

[0041] 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.

[0042] 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 interac-
tions, 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 tar-
getting opportunities. An example may be as follows: a user ID
reaches the minimum threshold of appearances from a partic-
ular 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.

[0043] 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 net-
work. For example, a user may receive advertisements suit-
able 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.

[0044] In embodiments, the server 105 then communicates
the first user identifications 107 and second user identifications
108 through communication signal 109 to receipt database
110. The first user identifications 107 and second user
identifications 108 include geography associated with the
same user.

[0045] 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 geo-
graphic regions including one or more states, or one or more
cities.

[0046] 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 environ-
ment. If user IDs make a minimum number of appearances
from a mobile device at 7:00 AM at a given geography, it is likely
the geography is a home or social environment.

[0047] In embodiments, the first user identifications 107
and second user identifications 108 are transmitted through
communication signal 109 to receipt database 110. The first
user identifications 107 and second user identifications 108
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, advertis-
ers, ad networks, ad servers, and data providers.

[0048] When user IDs have been validated, such informa-
tion 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

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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.

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.

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. 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.

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:

<table>
<thead>
<tr>
<th>Server’s host name</th>
<th>OAS page URL</th>
<th>Cache busting random number</th>
<th>Position Name</th>
<th>Campaign ID</th>
<th>Creative file name</th>
<th>User identifier</th>
<th>Creative dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server host name</td>
<td>OAS page URL</td>
<td>Cache busting random number</td>
<td>Position Name</td>
<td>Campaign ID</td>
<td>Creative file name</td>
<td>User identifier</td>
<td>Creative dimension</td>
</tr>
</tbody>
</table>

Counting occurs only after the delivery engine processes this request.

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.

In embodiments, the first user identifications 107 and second user identifications 108 are transmitted through communication signal 109 to receipt database 110. The first user identifications 107 and second user identifications 108 may be delivered to an outside entity via a bidding platform.

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 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.

A bidding platform may be associated with the receipt database 110 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.

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. For example, an advertiser may allocate more funding to a more popular ad based on current click-through rates.

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.

Opening mobile inventory to existing exchanges may bring visibility into current pricing. Combing 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.

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 homogeneous. 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.

[0060] 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.

[0061] 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.

[0062] Hyper targeting may be expanded to hyper-local targeting. Hyper local targeting and targeting 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 WiFi local targeting. The following examples and devices may be used in conjunction with hyper-local targeting and targeting: 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.

[0063] 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.

[0064] 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.

[0065] 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.

[0066] Other hyper targeted campaigns to users on multiple devices include a customized “Sunday circular.” A circular integrates targeting and data overlays, as well as demographic 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.

[0067] 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 a user looked at the ad. For example, it may indicate whether the user responded with a smile to a humorous ad.

[0068] 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.

[0069] 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.
nal 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.

[0071] 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.

[0072] 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.

[0073] 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.

[0074] 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.

[0075] 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-EPROM, 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.

[0076] 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.

[0077] 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.

[0078] 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 neither is a literal description of all embodiments of the invention nor a listing of features of the invention that must be present in all embodiments.

[0079] 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 validating user identifications, 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 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.

2. The system of claim 1, wherein the first or second user identification is 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.

3. The system of claim 1, wherein the first or second user identification is at least:
   (a) a hashed email address;
   (b) a log-in;
   (c) a username;
   (d) a data provider identification;
   (e) a matchkey;
   (f) a carrier identification; or
   (g) an Internet protocol.

4. The system of claim 1, wherein the system is 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.

5. The system of claim 4, wherein the relevancy is further based on a user characteristic datum associated with the user.

6. They 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 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.

7. The system of claim 5, wherein the user characteristic datum is selected from the list consisting of:
   (a) payment and billing history associated with the user;
   (b) the duration of online interactions by the user via one of the first and second communication devices;
   (c) the number of online interactions by the user via one of the first and second communication devices;
   (d) usage patterns of the one of the first and second communication devices dependent on location or time of day use thereof;
   (e) type of content accessed by the user via one of the first and second communication devices;
   (f) previous search queries entered by the user via one of the first and second communication devices;
   (g) shopping habits associated with the users;
   (h) videos, music, or audio listened to or downloaded by the user via one of the first and second communication devices;
   (i) previous geographies associated with the user; and
   (j) webpages visited or applications used by the user via one of the first and second communication devices.

8. The system of claim 7, wherein the shopping habits are one or more 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.

9. The system of claim 1, wherein the first and second communication devices are one of:
   (a) a cellular phone;
   (b) a tablet;
   (c) a portable media player;
   (d) a laptop or notebook computer;
   (e) television;
   (f) a cable box; and
   (g) a personal computer.