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(54) **BIDDING FOR ADVERTISING IMPRESSION  
IN AN ONLINE EXCHANGE USING ONE OR  
MORE MULTIPLE QUALITY  
MEASUREMENTS**

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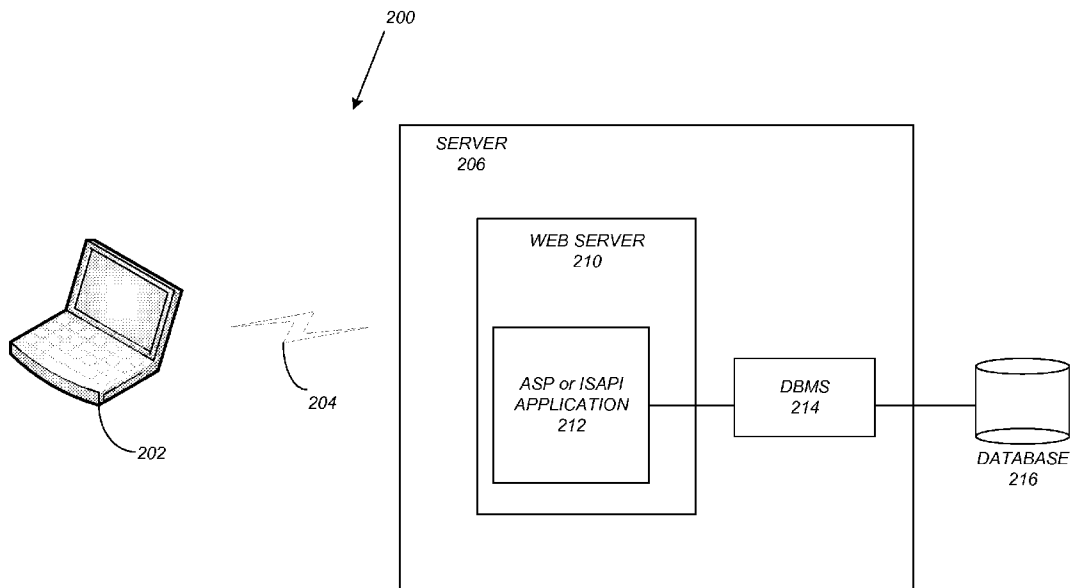
(57) **ABSTRACT**

A method, apparatus, system, and computer program product provide the ability to bid for an advertising impression. Within an advertising exchange, an advertising bidding impression campaign to bid for the advertising impression is initialized. A desired impression quality rank is selected and a bid against the desired rank is accepted. An actual impression quality rank for an actual advertising impression in an advertising impression inventory is determined. Based on the bid and the actual impression quality rank, the actual advertising impression is awarded to the bidder.

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**Related U.S. Application Data**

(60) Provisional application No. 61/873,311, filed on Sep. 3, 2013.



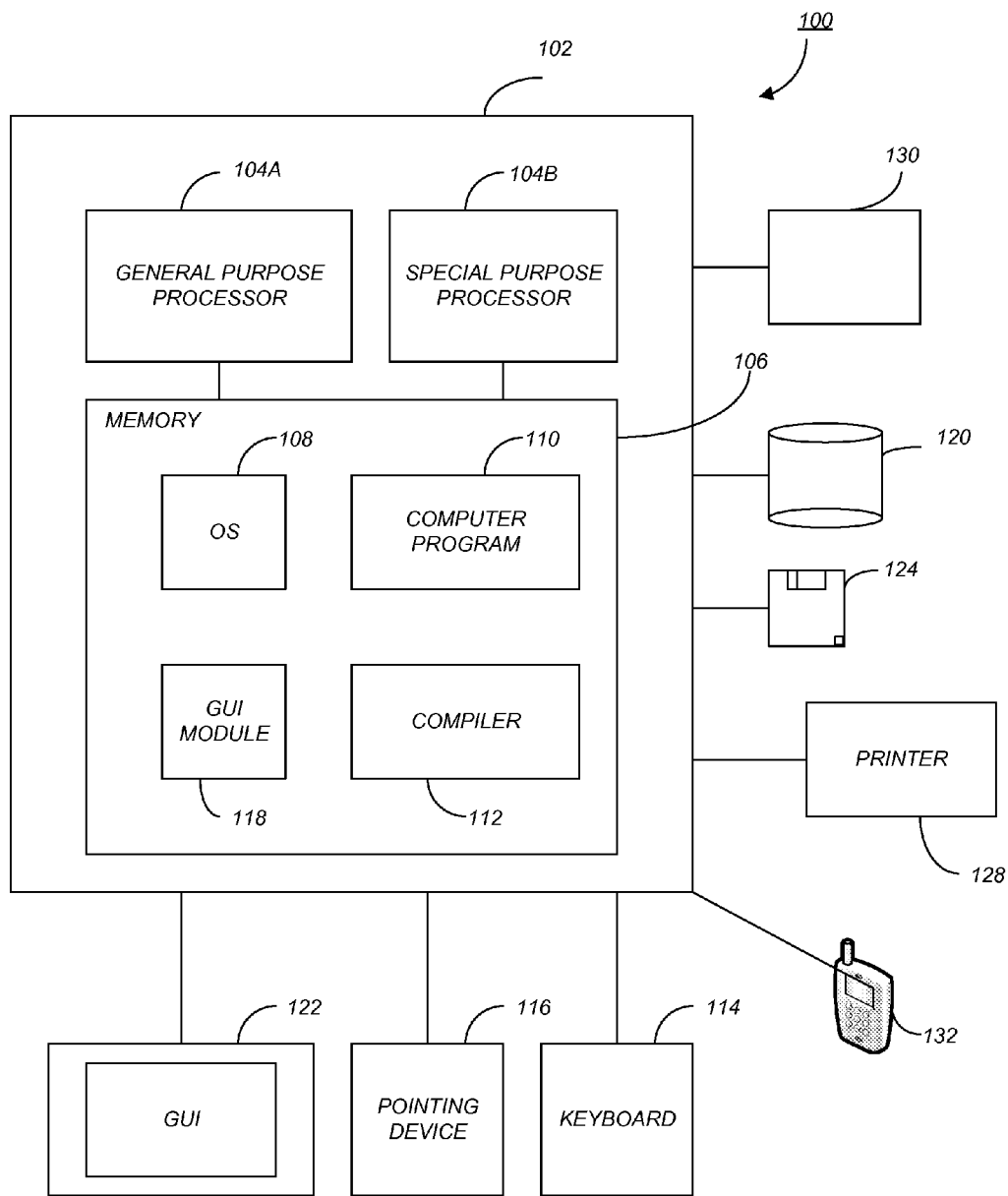


FIG. 1

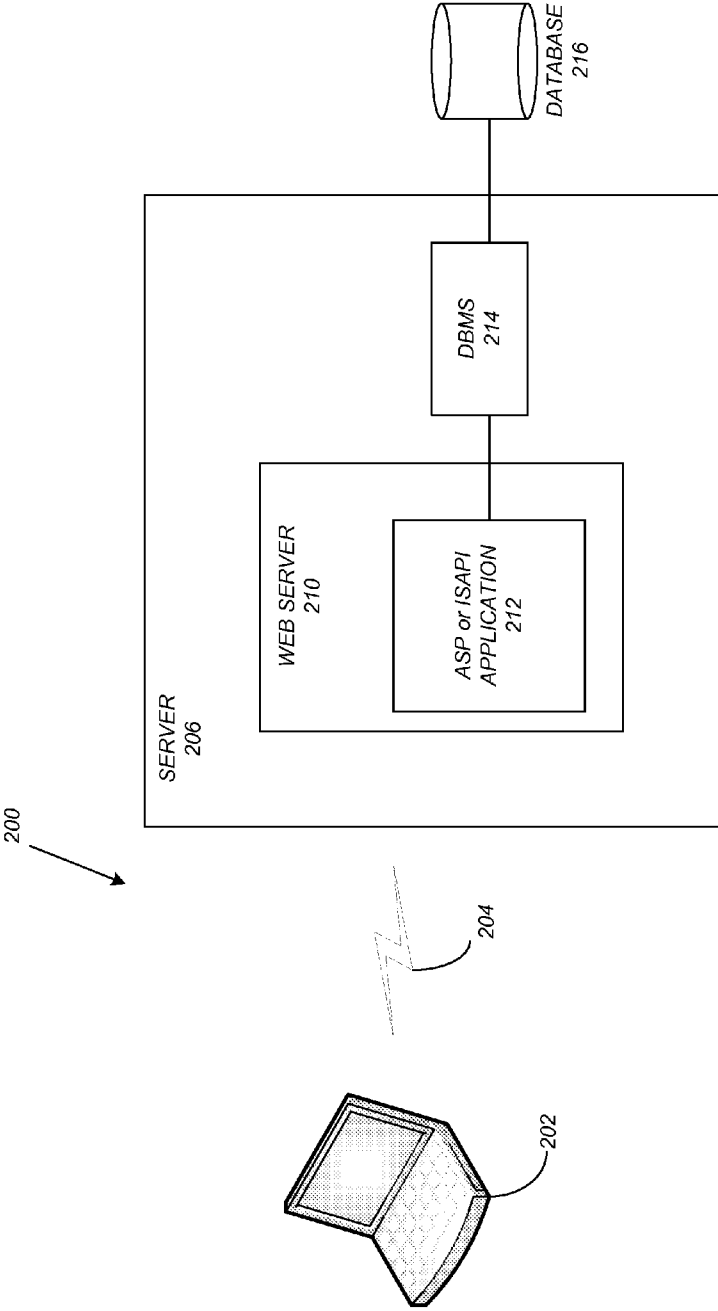


FIG. 2

Orders

Product: [Product Name] | Order: [Order Number] | Date: [Order Date] | Status: [Order Status]

Order Line	Description	Quantity	Unit Price	Discount	Net Price	Net Amount	Tax	Total
1	Open Frame	100	\$1,200	0%	\$1,200	\$120,000	\$12,000	\$132,000
1	Open Frame	100	\$1,200	0%	\$1,200	\$120,000	\$12,000	\$132,000
1	Open Frame	100	\$1,200	0%	\$1,200	\$120,000	\$12,000	\$132,000
1	Open Frame	100	\$1,200	0%	\$1,200	\$120,000	\$12,000	\$132,000
1	Open Frame	100	\$1,200	0%	\$1,200	\$120,000	\$12,000	\$132,000
1	Open Frame	100	\$1,200	0%	\$1,200	\$120,000	\$12,000	\$132,000

FIG. 3A

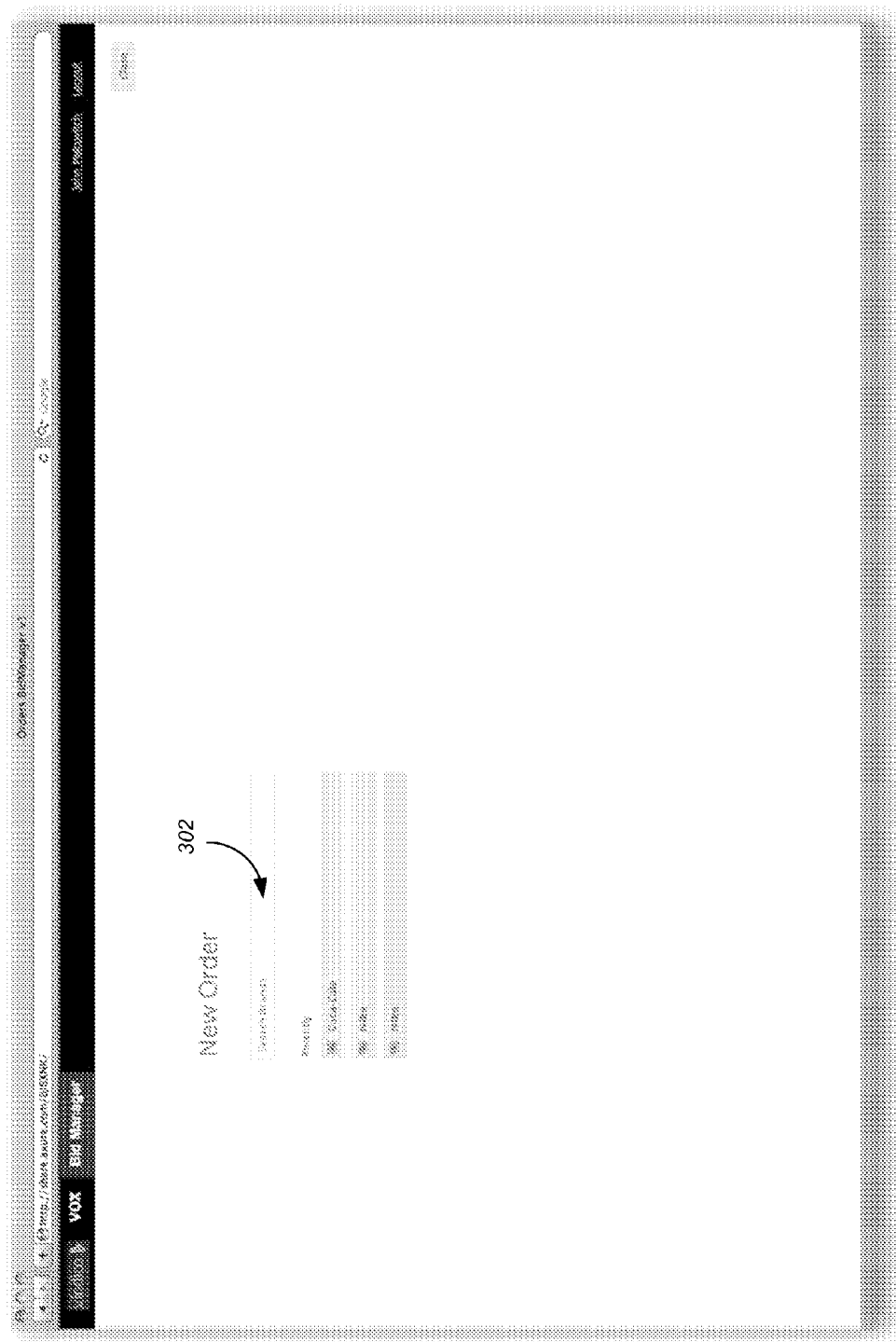


FIG. 3B

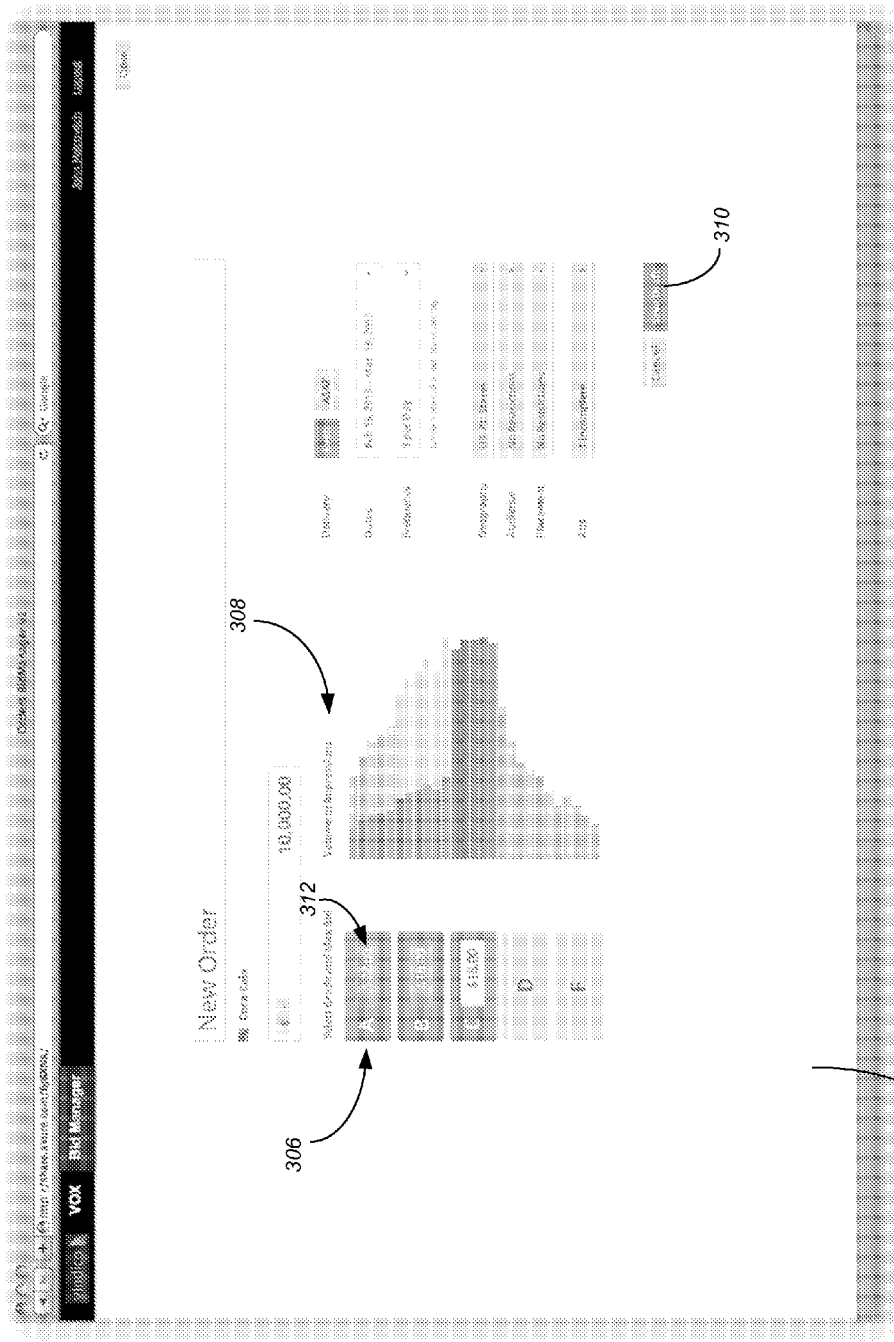


FIG. 3C

**New Order** Video  
Brand: Coca-Cola

306 Max Bid (CPM) by Inventory

A	\$22
B	\$20
C	\$16
D	\$12
E	\$2

312 Total Volume per day

314 Budget \$10,000

316 Dates Jul 1, 2013 to Dec 1, 2013

320 Frequency 3 per day

322 Geography All US states

324 Audience No restrictions

326 Placement No restrictions

Ads 1 video

Cancel Save Order

Quality scores by Adtricity. Last update June 26, 2013

FIG. 3D

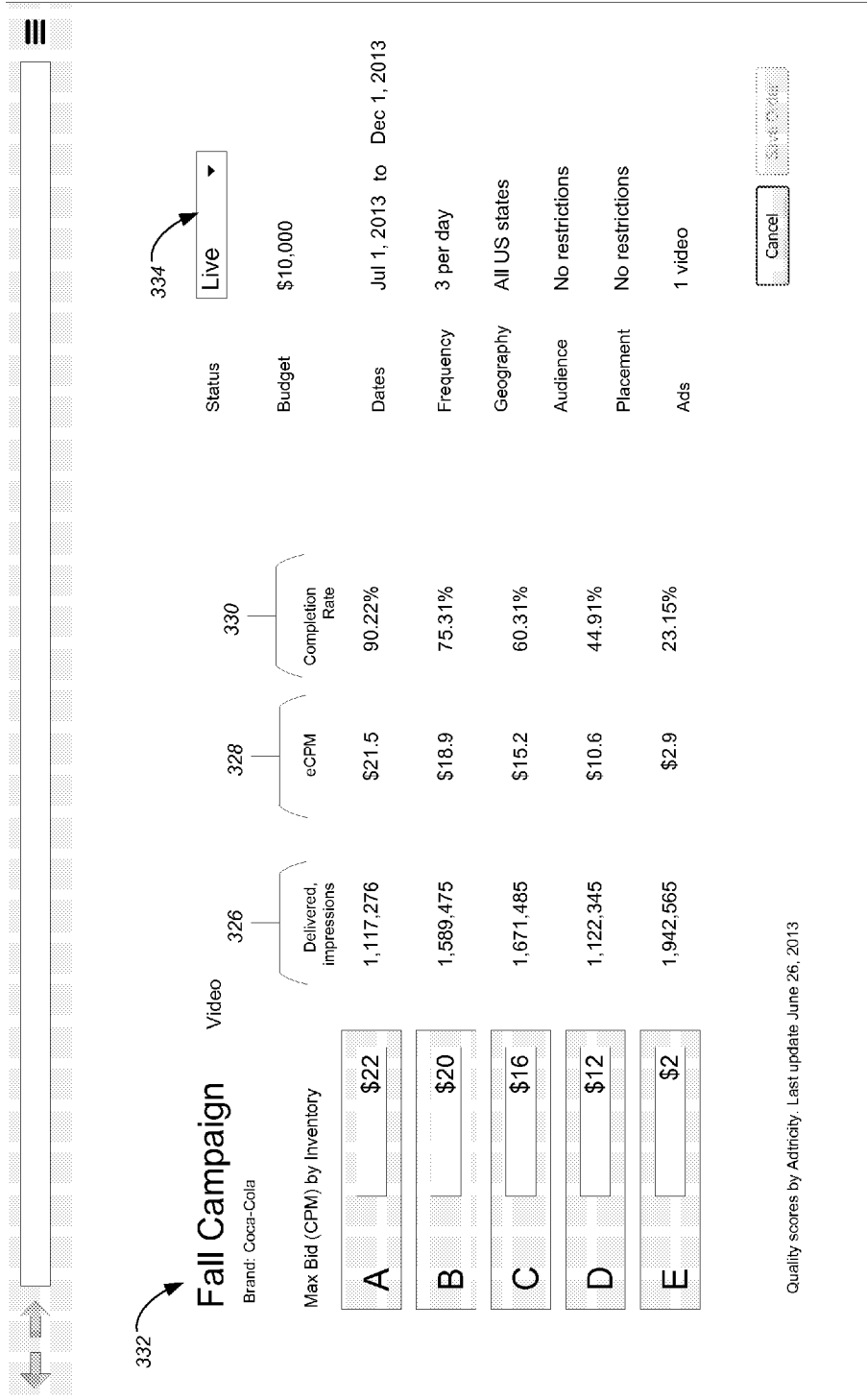
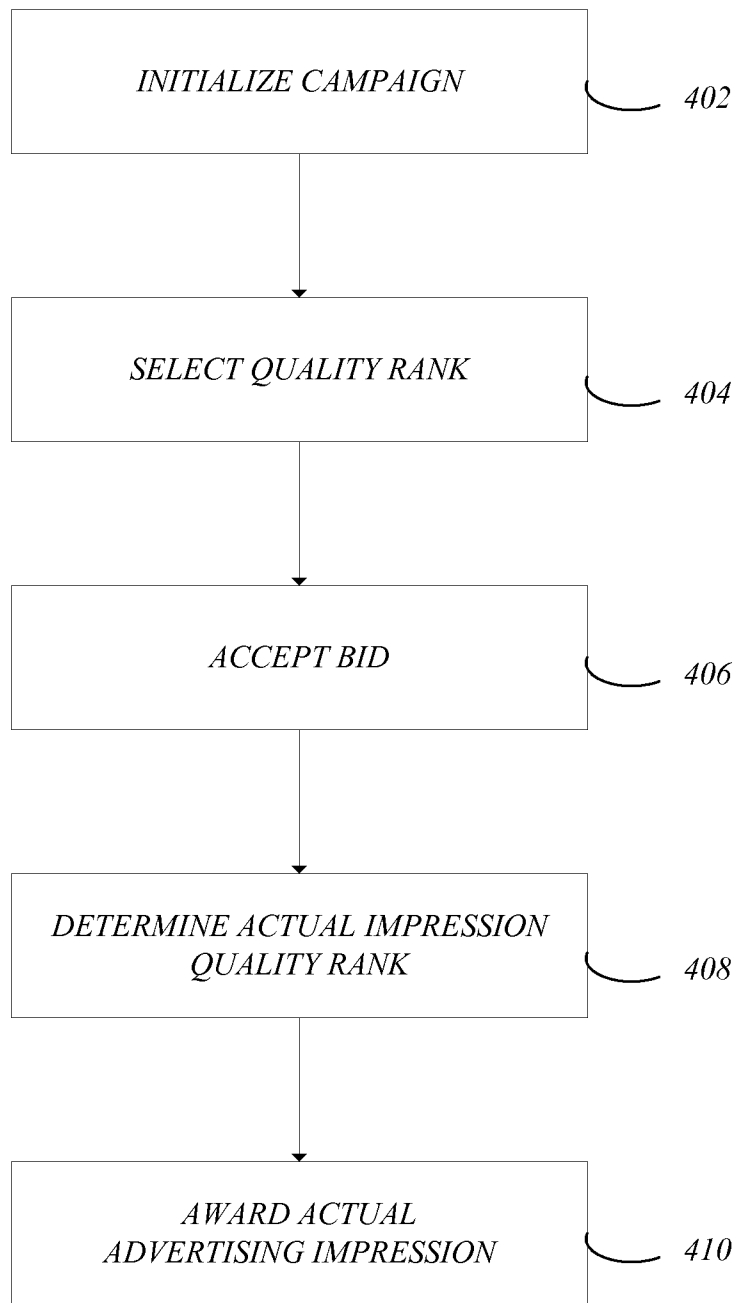


FIG. 3E





**FIG. 4**

**BIDDING FOR ADVERTISING IMPRESSION IN AN ONLINE EXCHANGE USING ONE OR MORE MULTIPLE QUALITY MEASUREMENTS**

**CROSS-REFERENCE TO RELATED APPLICATIONS**

**[0001]** This application claims the benefit under 35 U.S.C. Section 119(e) of the following co-pending and commonly-assigned U.S. provisional patent application(s), which is/are incorporated by reference herein:

**[0002]** Provisional Application Ser. No. 61/873,311, filed on Sep. 3, 2013, by Jason J. A. Knapp, Varoujan Bedirian, and Sergey Kuznetsov, entitled “BIDDING FOR ADVERTISING IMPRESSION IN AN ONLINE EXCHANGE USING ONE OR MORE MULTIPLE QUALITY MEASUREMENTS,” attorneys’ docket number 257.78-US-P1.

**[0003]** This application is related to the following co-pending and commonly-assigned patent applications, which applications are incorporated by reference herein:

**[0004]** U.S. patent application Ser. No. 14/177,500, filed on Feb. 11, 2014 by Christophe L. Clapp and Brian C. DeFrancesco, entitled “COMPREHENSIVE MEASUREMENT OF THE OPPORTUNITY TO SEE ONLINE ADVERTISEMENTS”, which application claims priority to U.S. Provisional Patent Application Ser. No. 61/763,226, filed on Feb. 11, 2013, by Christophe L. Clapp and Brian C. DeFrancesco, entitled “System and Methodology for Comprehensive Measurement of the Opportunity to See Online Advertisements (“Viewability”),” attorneys’ docket number 257.72-US-P1;

**[0005]** U.S. patent application Ser. No. 14/177,507, filed on Feb. 11, 2014 by Christophe L. Clapp and Brian C. DeFrancesco, entitled “SYSTEM AND METHOD TO ANALYZE AND RATE ONLINE ADVERTISEMENT PLACEMENT QUALITY AND POTENTIAL VALUE”, which application claims priority to U.S. Provisional Patent Application Ser. No. 61/763,236, filed on Feb. 11, 2013, by Christophe L. Clapp and Brian C. DeFrancesco, entitled “System and Methodology to Analyze and Rate Online Advertisement Placement Quality and Potential Value,” attorneys’ docket number 257.74-US-P1; and

**[0006]** U.S. patent application Ser. No. \_\_\_\_\_, filed on the same date herewith, by Jason J. A. Knapp and Timothy Charles Vanderhook, entitled “UPFRONT ADVERTISEMENT PURCHASING EXCHANGE,” attorneys’ docket number 257.79-US-U1, which applications claims priority to Provisional Application Ser. No. 61/873,319, filed on Sep. 3, 2013, by Jason J. A. Knapp and Timothy Charles Vanderhook, entitled “UPFRONT ADVERTISEMENT PURCHASING EXCHANGE,” attorneys’ docket number 257.79-US-P1.

**BACKGROUND OF THE INVENTION**

**[0007]** 1. Field of the Invention

**[0008]** The present invention relates generally to electronic/online advertisements, and in particular, to a method, apparatus, system, computer program product, and article of manufacture for bidding for advertising in an online exchange based on a quality rank/measurement.

**[0009]** 2. Description of the Related Art

**[0010]** Advertisers try to reach consumers using a variety of delivery mechanisms including via web-based advertising on the Internet and commercial broadcast advertising. Adver-

tisements may be presented to potential consumers on a variety of presentation devices including televisions and/or portable devices [e.g., cellular devices, personal digital assistants, tablet computers, etc.]. In this regard and as used herein, an advertising impression is an individual instance when an advertisement (ad) is shown to a particular user. For example, when a user selects a web page to view, that instance of the web page may provide one or more opportunities for an ad impression (also referred to as an “impression”). If the user selects to view another web page, the other web page may provide one or more additional opportunities for an ad impression, i.e., another instance when an ad can be presented to the user.

**[0011]** Prior art mechanisms for advertisers to purchase an impression often utilize an online exchange where advertisers submit bids for one or more impressions (e.g., an auction for the impressions). Traditionally, bidding in an online exchange is done by: identifying the target audience (collective profile of portrayed users) (e.g., using demographic information); selecting the sites and parameters of the advertising campaign; and selecting a maximum bid for the ad exchange auction. Such a system merely provides a minimal amount of detail regarding the ad impression(s) the advertiser is bidding on. Further such a system fails to provide flexibility in customizing an approach for securing advertising impressions (e.g., in choosing impressions based on quality).

**[0012]** To better understand the problems of the prior art, a description of prior art advertisement technology may be useful.

**[0013]** Over the past few years, there has been a tremendous increase in ad inventory and demand (including video, display, and other ads across desktop, mobile, smart televisions, etc.). To better capitalize on the explosion of growth, some advertising markets have shifted into programmatic buying. Such a shift has led to the commoditization of video ad inventory, resulting in lower-quality executions being undifferentiated from higher-quality placements, ultimately leading to a diminished value that brands derive from their video advertising.

**[0014]** To overcome such problems, the assignee of the present invention has created and provided an independent marketplace solution where both advertisers and publishers can transact through a trusted, independent third-party partner. Such a solution overcomes problems relating to video ad inventory that has been overly commoditized due to a combination of very high demand and a lack of standards around quality. Such a solution also assesses the quality of inventory en masse and presents such an assessment to a marketplace for advertisers to buy at scale.

**[0015]** Using the solution offered by the assignee of the present invention (or others), two primary methods/models are often utilized to acquire impressions. In a first model, a fixed price is paid for a guaranteed number of advertising impressions. For example, an advertiser may pay \$15 and receive a defined number of impressions. Some systems only allow a certain preferred set of companies to purchase advertisement impressions under this model (e.g., an advertising/media purchasing entity).

**[0016]** The second model for purchasing advertising is referred to as a second price auction or real time selling. In such a model, an entity programmatically buys advertisement space (e.g., via a guaranteed price model) and attempts to sell individual/sets of impressions on the secondary market via an auction/bidding system. In such a model, for every impres-

sion that arrives, a request for a bid for that advertisement is issued to one or more interested parties (e.g., a media purchasing entity, an advertisement firm, individuals, etc.). Such a bid request may provide information about the impression (e.g., the website, possible demographic information, etc.) and requests a bid. In response, bids are received and the highest bidder is awarded the impression. In a second price auction, the name of the actual advertiser (and not the middleman that is attempting to purchase the advertisement impression) may be provided/required in a submitted bid. In other words, the programmatic buyer may submit bids on behalf of individual advertisers for advertisement space. Alternatively, the programmatic buyer may sell the (already purchased) advertisement space to individual advertisers via a bidding process maintained by the programmatic buyer.

[0017] Regardless of the method/model used to acquire/place an advertisement, to develop an acceptable advertisement purchasing strategy, it is desirable for advertisers to ascertain information about the impression on which they are bidding. Prior art mechanisms fail to provide sufficient rating of the quality of the individual impressions on various measures and provide a limited ability to develop and utilize a customized approach for securing advertising space/impressions.

#### SUMMARY OF THE INVENTION

[0018] Embodiments of the invention overcome the problems of the prior art by enabling a user with the capability to define/specify bidding campaign parameters including an impression quality rank/grade and placing a bid against such a rank.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0019] Referring now to the drawings in which like reference numbers represent corresponding parts throughout:

[0020] FIG. 1 is an exemplary hardware and software environment used to implement one or more embodiments of the invention;

[0021] FIG. 2 schematically illustrates a typical distributed computer system using a network to connect client computers to server computers in accordance with one or more embodiments of the invention;

[0022] FIGS. 3A-3E illustrate an exemplary graphical user interface for configuring an advertising campaign in accordance with one or more embodiments of the invention; and

[0023] FIG. 4 illustrates the logical flow for bidding for an advertising impression in accordance with one or more embodiments of the invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] In the following description, reference is made to the accompanying drawings which form a part hereof, and which is shown, by way of illustration, several embodiments of the present invention. It is understood that other embodiments may be utilized and structural changes may be made without departing from the scope of the present invention.

#### Overview

[0025] Embodiments of the invention enable a user to configure a advertisement bidding campaign. Such a configuration includes the identification of a target audience, the selection of sites/parameters, the selection of a maximum bid, and

also the selection of an impression quality rank/grade and the placement of an bid against impressions with such a rank/grade.

#### Hardware Environment

[0026] FIG. 1 is an exemplary hardware and software environment 100 used to implement one or more embodiments of the invention. The hardware and software environment includes a computer 102 and may include peripherals. Computer 102 may be a user/client computer, server computer, or may be a database computer. The computer 102 comprises a general purpose hardware processor 104A and/or a special purpose hardware processor 104B (hereinafter alternatively collectively referred to as processor 104) and a memory 106, such as random access memory (RAM). The computer 102 may be coupled to, and/or integrated with, other devices, including input/output (I/O) devices such as a keyboard 114, a cursor control device 116 (e.g., a mouse, a pointing device, pen and tablet, touch screen, multi-touch device, etc.) and a printer 128. In one or more embodiments, computer 102 may be coupled to, or may comprise, a portable or media viewing/listening device 132 (e.g., an MP3 player, iPod™, Nook™, portable digital video player, cellular device, personal digital assistant, etc.). In yet another embodiment, the computer 102 may comprise a multi-touch device, mobile phone, gaming system, internet enabled television, television set top box, or other internet enabled device executing on various platforms and operating systems.

[0027] In one embodiment, the computer 102 operates by the general purpose processor 104A performing instructions defined by the computer program 110 under control of an operating system 108. The computer program 110 and/or the operating system 108 may be stored in the memory 106 and may interface with the user and/or other devices to accept input and commands and, based on such input and commands and the instructions defined by the computer program 110 and operating system 108, to provide output and results.

[0028] Output/results may be presented on the display 122 or provided to another device for presentation or further processing or action. In one embodiment, the display 122 comprises a liquid crystal display (LCD) having a plurality of separately addressable liquid crystals. Alternatively, the display 122 may comprise a light emitting diode (LED) display (and/or a LED-backlit LCD display) having clusters of red, green and blue diodes driven together to form full-color pixels. Each liquid crystal or pixel of the display 122 changes to an opaque or translucent state to form a part of the image on the display in response to the data or information generated by the processor 104 from the application of the instructions of the computer program 110 and/or operating system 108 to the input and commands. The image may be provided through a graphical user interface (GUI) module 118. Although the GUI module 118 is depicted as a separate module, the instructions performing the GUI functions can be resident or distributed in the operating system 108, the computer program 110, or implemented with special purpose memory and processors.

[0029] In one or more embodiments, the display 122 is integrated with/into the computer 102 and comprises a multi-touch device having a touch sensing surface (e.g., track pad or touch screen) with the ability to recognize the presence of two or more points of contact with the surface. Examples of multi-touch devices include mobile devices (e.g., iPhone™, Nexus S™, Droid™ devices, etc.), tablet computers (e.g., iPad™, HP Touchpad™), portable/handheld game/music/

video player/console devices (e.g., iPod Touch™, MP3 players, Nintendo 3DS™, PlayStation Portable™, etc.), touch tables, and walls (e.g., where an image is projected through acrylic and/or glass, and the image is then backlit with LEDs).

[0030] Some or all of the operations performed by the computer 102 according to the computer program 110 instructions may be implemented in a special purpose processor 104B. In this embodiment, the some or all of the computer program 110 instructions may be implemented via firmware instructions stored in a read only memory (ROM), a programmable read only memory (PROM) or flash memory within the special purpose processor 104B or in memory 106. The special purpose processor 104B may also be hardwired through circuit design to perform some or all of the operations to implement the present invention. Further, the special purpose processor 104B may be a hybrid processor, which includes dedicated circuitry for performing a subset of functions, and other circuits for performing more general functions such as responding to computer program 110 instructions. In one embodiment, the special purpose processor 104B is an application specific integrated circuit (ASIC).

[0031] The computer 102 may also implement a compiler 112 that allows an application or computer program 110 written in a programming language such as COBOL (Common Business-Oriented Language), Pascal, C++, FORTRAN, or other language to be translated into processor 104 readable code. Alternatively, the compiler 112 may be an interpreter that executes instructions/source code directly, translates source code into an intermediate representation that is executed, or that executes stored precompiled code. Such source code may be written in a variety of programming languages such as Java™, Perl™, Basic™, etc. After completion, the application or computer program 110 accesses and manipulates data accepted from I/O devices and stored in the memory 106 of the computer 102 using the relationships and logic that were generated using the compiler 112.

[0032] The computer 102 also optionally comprises an external communication device such as a modem, satellite link, Ethernet card, or other device for accepting input from, and providing output to, other computers 102.

[0033] In one embodiment, instructions implementing the operating system 108, the computer program 110, and the compiler 112 are tangibly embodied in a non-transitory computer-readable medium, e.g., data storage device 120, which could include one or more fixed or removable data storage devices, such as a zip drive, floppy disc drive 124, hard drive, CD-ROM drive, tape drive, etc. Further, the operating system 108 and the computer program 110 are comprised of computer program 110 instructions which, when accessed, read and executed by the computer 102, cause the computer 102 to perform the steps necessary to implement and/or use the present invention or to load the program of instructions into a memory 106, thus creating a special purpose data structure causing the computer 102 to operate as a specially programmed computer executing the method steps described herein. Computer program 110 and/or operating instructions may also be tangibly embodied in memory 106 and/or data communications devices 130, thereby making a computer program product or article of manufacture according to the invention. As such, the terms “article of manufacture,” “program storage device,” and “computer program product,” as used herein, are intended to encompass a computer program accessible from any computer readable device or media.

[0034] Of course, those skilled in the art will recognize that any combination of the above components, or any number of different components, peripherals, and other devices, may be used with the computer 102.

[0035] FIG. 2 schematically illustrates a typical distributed computer system 200 using a network 204 to connect client computers 202 to server computers 206. A typical combination of resources may include a network 204 comprising the Internet, LANs (local area networks), WANs (wide area networks), SNA (systems network architecture) networks, or the like, clients 202 that are personal computers or workstations (as set forth in FIG. 1), and servers 206 that are personal computers, workstations, minicomputers, or mainframes (as set forth in FIG. 1). However, it may be noted that different networks such as a cellular network (e.g., GSM [global system for mobile communications] or otherwise), a satellite based network, or any other type of network may be used to connect clients 202 and servers 206 in accordance with embodiments of the invention.

[0036] A network 204 such as the Internet connects clients 202 to server computers 206. Network 204 may utilize ethernet, coaxial cable, wireless communications, radio frequency (RF), etc. to connect and provide the communication between clients 202 and servers 206. Clients 202 may execute a client application or web browser and communicate with server computers 206 executing web servers 210. Such a web browser is typically a program such as MICROSOFT INTERNET EXPLORER™, MOZILLA FIREFOX™, OPERA™, APPLE SAFARI™, GOOGLE CHROME™, etc. Further, the software executing on clients 202 may be downloaded from server computer 206 to client computers 202 and installed as a plug-in or ACTIVEX™ control of a web browser. Accordingly, clients 202 may utilize ACTIVEX™ components/component object model (COM) or distributed COM (DCOM) components to provide a user interface on a display of client 202. The web server 210 is typically a program such as MICROSOFT'S INTERNET INFORMATION SERVER™.

[0037] Web server 210 may host an Active Server Page (ASP) or Internet Server Application Programming Interface (ISAPI) application 212, which may be executing scripts. The scripts invoke objects that execute business logic (referred to as business objects). The business objects then manipulate data in database 216 through a database management system (DBMS) 214. Alternatively, database 216 may be part of, or connected directly to, client 202 instead of communicating/obtaining the information from database 216 across network 204. When a developer encapsulates the business functionality into objects, the system may be referred to as a component object model (COM) system. Accordingly, the scripts executing on web server 210 (and/or application 212) invoke COM objects that implement the business logic. Further, server 206 may utilize MICROSOFT'S™ Transaction Server (MTS) to access required data stored in database 216 via an interface such as ADO (Active Data Objects), OLE DB (Object Linking and Embedding DataBase), or ODBC (Open DataBase Connectivity).

[0038] Generally, these components 200-216 all comprise logic and/or data that is embodied in/or retrievable from device, medium, signal, or carrier, e.g., a data storage device, a data communications device, a remote computer or device coupled to the computer via a network or via another data communications device, etc. Moreover, this logic and/or data,

when read, executed, and/or interpreted, results in the steps necessary to implement and/or use the present invention being performed.

**[0039]** Although the terms “user computer”, “client computer”, and/or “server computer” are referred to herein, it is understood that such computers **202** and **206** may be interchangeable and may further include thin client devices with limited or full processing capabilities, portable devices such as cell phones, notebook computers, pocket computers, multi-touch devices, and/or any other devices with suitable processing, communication, and input/output capability.

**[0040]** Of course, those skilled in the art will recognize that any combination of the above components, or any number of different components, peripherals, and other devices, may be used with computers **202** and **206**.

#### Software Embodiment Overview

**[0041]** Embodiments of the invention are implemented as a software application on a client **202** or server computer **206**. Further, as described above, the client **202** or server computer **206** may comprise a thin client device or a portable device that has a multi-touch-based display.

**[0042]** Embodiments of the invention provide a self-service user interface (UI) is used in combination with a second price auction. Such a UI may be provided to advertisement agencies and is used to configure a managed bidding service and place bids for advertisements (e.g., referred to as a bid manager order). For example, an advertising entity may configure a maximum bid, the number of impressions desired, the desired demographic, parameters, etc. into an advertisement bidding engine that will secure bids during a real-time second price auction. In such a system, different parameters (e.g., prices/maximums) may be configured for different grades of inventory. An inventory grading system ranks or grades the advertisement impressions during a second price auction. As an example, if a web page has a single advertisement, it may be graded higher or as more valuable than a web page with ten advertisements. Similarly, if one large ad is on a web page, the large ad may be more valuable than a large number of smaller ads. In another example, if a single pixel has fifty (50) advertisements within it, the grading may be zero or a managed service may not accept bids for such an impression. Further, different vendors (i.e., domain name or domain name owner) may have different grades (e.g., Amazon™ vs. National Enquirer™). Accordingly, people using the third model have some knowledge base regarding what they are bidding on.

**[0043]** As used herein, the term “grade” and “impression quality rank” are intended to cover similar concepts—that of an impression quality as a measure of the probability of the ad being seen and acted upon by the end consumer. Bidding by quality rank/grade allows more flexible prioritization of an ad spend depending on such an impression quality/grade/rank. Further, the quality determination of every impression may be an aggregate of many impressions over a defined time period (e.g., based on average viewability over the last thirty (30) days). The quality determination may also be implemented as an instant measurement, where prior to reaching an advertisement server, the ad impression would be measured against all metrics, graded, and arrive to the advertisement server for further eligibility and pricing decisioning.

**[0044]** Accordingly, a software application provides an advertising exchange/bidding system that enables a user to enter configuration parameters (e.g., via a UI component). Such a UI component may be part of a bid manager/bid

management application. A user may enter configuration/advertising campaign information into the UI. Once entered, an ad campaign may be stored in a computer **100** (e.g., in database **120**). An advertising campaign (also referred to as a bidding strategy) from one user may compete with an advertising campaign of a second/different user (e.g., competing for the same impression).

**[0045]** The traditional targeting of audiences and sites without the measure of probability of a user viewing and acting upon the ad diminishes the value of all impressions for the advertiser. By being able to selectively affect the price of an ad request of different quality, advertisers are provided with flexibility and control of purchased volumes. Advertisers also receive a reassurance that a price paid is close to the value of that ad impression.

**[0046]** In view of the above, embodiments of the invention may enable a user to bid by grade (i.e., of the impression). For example, a user may indicate a bid of up to \$25 for grade “A”, up to \$10 for grade “B”, and up to \$4 for grade “C” impressions. Alternatively, bidders may specify a minimum grade for which a bid may be submitted.

**[0047]** FIGS. 3A-3C illustrate an exemplary graphical user interface for configuring an advertising campaign in accordance with one or more embodiments of the invention. FIG. 3A illustrates a list of pending orders/submitted bidding campaigns. Each row of the order list shows the particular campaign, the status of the campaign (e.g., live or draft), starting and ending dates, a campaign budget, how much of the budget has been fulfilled (e.g., how much money/impressions have been delivered to date), how much of the budget remains, the pace at which the campaign is being fulfilled, the view-through rate (VTR) ( $100\% \times \text{viewthrough}/\text{impressions}$ ), the click through rate (CTR) ( $100\% \times \text{clicks}/\text{impressions}$ ), and the conversion rate/ratio (CR).

**[0048]** When the user clicks the “Create Order” button/link, the order list fades out and a new order step (FIG. 3B) appears. Such a new order step/form may take over the entire page to help the user focus on the task. A user selects a brand. Note that it may not be possible to change the brand for an existing order. Further, United States and European Union brands may appear in the same list and could show up in the search results with a flag icon. In this regard, a user may enter a search in box **302** with the resulting brand list displayed below (e.g., with flag icons). Once the brand is selected, only one additional step may be needed to finish/complete the order.

**[0049]** FIG. 3C illustrates the user interface displayed once a brand is selected in FIG. 3B in accordance with one or more embodiments of the invention. The focus of the order form **304**, is on the letter grades **306**, the volume of impressions **308**, and bids per score (e.g., indicated by different colors/shading under the volume of impressions **308**). Other settings may automatically default to common settings where possible. A user may have the option of saving a draft bidding campaign order configuration (e.g., via button **310**). Once the form **304** is saved, the configuration/new order may appear in the list of FIG. 3A. When the user hovers over the letter grade **306**, a small popup may appear and explain what it means and provide the top five (5) samples of the sites. Further, once the maximum bid price **312** is selected, the purchase volume may be estimated and overlaid over the available volume **308**.

**[0050]** FIG. 3D illustrates bidding by grade in a new order form in accordance with one or more embodiments of the invention. As illustrated, the user/bidder may enter the maximum bid amount **312** for each grade of impression **306**.

Different parameters may be used to enter total budget details **314** (e.g., the total amount for all impressions that may not be exceeded), the dates **316** for which the bidding order is valid, the frequency **318** within each bid category for which bids will be submitted, the geographical location **320** (e.g., country, state, county, city, region, etc.) (single or multiple geographical areas may be selectable) where the impression will be delivered, the audience **322** (e.g., demographic characteristics), the placement **324** (e.g., desired or undesired web sites identified by URL domains), and the type of ad **326** (e.g., video, audio, image, etc.).

**[0051]** In view of the above, embodiments of the invention provide the ability for a user to bid for impressions based on advertisement quality which may be based on the viewability (the opportunity for the advertisement to be seen) as well as verification (how and where the advertisement is seen) (Quality=Viewability+Verification). In particular, the quality of online publishers and placements in real-time may be evaluated based on a variety of metrics (e.g., over 100 metrics). Such metrics include viewability (e.g., the active tab rate, average y-position, active time on page etc.), content (the general content topics and page context where ads are present including content category, ad clutter ratio, content obstructions, etc.), execution (the observed delivery environment of ads including transparency, page/ad load, player size, etc.), and traffic & domain (e.g., the site's trust level and traffic quality including ads/IP/Day (ads/impressions per day), SEO (search engine optimization)/Organic (un-paid), International delivery, etc.).

**[0052]** Letter grades in each category may be aggregated for individual sites and made available for real-time bidding in the platform (e.g., the order form illustrated in FIG. 3). Letter grades may be in the form of A, B, C, D, and F. An "A" grade impression may represent prime quality (a "TV-like" experience, high impact treatment, and exceptional execution). A "B" grade impression may represent high quality (e.g., a premium experience, front and center treatment, and high quality execution). A "C" grade impression may represent standard quality (e.g., viewable on the page, acceptable treatment, and clean execution). A "D" grade impression may represent a below standard impression (e.g., a significant departure from standard and acceptable quality benchmarks). An "F" grade impression may represent pool quality with a fraud warning (e.g., well below standard quality with indications of fraudulent activity).

**[0053]** FIG. 3E illustrates an option to change grade bids while reviewing the vital statistics in an Order Overview area of a graphical user interface in accordance with one or more embodiments of the invention. In other words, once a bid for advertisements has been submitted/or is in progress, the user can view the current statistics/results of the bidding campaign and adjust/modify/edit the bid as desired. In FIG. 3E, the "Delivered, impressions" column **326** displays the number of delivered impressions for the categories/grades in each row. eCPM column **328** displays the effective cost per thousand impressions for the categories/grades in each row. Completion rate column **330** displays the percentage of each category/grade that has been completed with respect to the bidding campaign **332** displayed. The status **334** selector allows the user to select the status of the campaign **332** to view.

Logical Flow

**[0054]** FIG. 4 illustrates the logical flow for bidding for an advertising impression in accordance with one or more embodiments of the invention.

**[0055]** At step **402**, within an advertising exchange, an advertising bidding impression campaign (to bid for an advertising impression) is initialized (e.g., by displaying a graphical user interface for a bidder to specify bidding parameters).

**[0056]** At step **404**, a desired impression quality rank is selected (e.g., within the campaign). Such a quality rank may consist of a letter grade that is based on a measure of a probability of the actual impression being seen and acted upon by an end consumer. To determine the quality rank, average viewability of multiple actual impressions may be aggregated over a defined time period. Alternatively (or in addition), the determining may be based on the combination of a viewability factor and a verification. The viewability factor may consist of a quantitative analysis/evaluation based on an opportunity for the actual ad impression to be seen. The verification is a qualitative analysis/evaluation of how and where the actual ad impression is seen.

**[0057]** At step **406**, a bid against the selected desired impression quality rank is accepted from a bidder. Further, the user may select a target audience and a parameter for the ad campaign (e.g., a total budget for the campaign, dates for the campaign, frequency of the ads, geography, audience, placement, type of ad, etc.).

**[0058]** Steps **402-406** may be performed in combination with a real-time second price auction.

**[0059]** At step **408**, an actual impression quality rank for an actual advertising impression (in an advertising impression inventory—i.e., an inventory of available impressions) is determined.

**[0060]** At step **410**, the actual advertising impression is awarded to the bidder based on the bid (and any additional parameters if specified) and the actual impression quality rank.

**[0061]** In view of the above, a bidder may specify bid amounts (e.g., maximum bid amounts) for multiple different quality grades (e.g., in step **406**). When awarding impressions, different impressions having different grades may be awarded based on the bids set forth in the campaign. Further, if the user specifies a budget for an ad campaign, embodiments of the invention may automatically continue to award actual ad impressions based on the specified bids until the budget has been reached (or until it is not possible to award an ad without exceeding the budget). In this regard, ad impressions may be awarded to a bidder on an automated basis (i.e., without any additional input from the user) consistent with the bidding parameters established/defined by the user.

## CONCLUSION

**[0062]** This concludes the description of the preferred embodiment of the invention. The following describes some alternative embodiments for accomplishing the present invention. For example, any type of computer, such as a mainframe, minicomputer, or personal computer, or computer configuration, such as a timesharing mainframe, local area network, or standalone personal computer, could be used with the present invention.

**[0063]** The foregoing description of the preferred embodiment of the invention has been presented for the purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise form disclosed. Many modifications and variations are possible in light of the above teaching. It is intended that the scope of the invention be limited not by this detailed description, but rather by the claims appended hereto.

What is claimed is:

**1.** A computer-implemented method for bidding for an advertising impression, comprising:

initializing, within an advertising exchange, an advertising bidding impression campaign to bid for the advertising impression;

selecting an desired impression quality rank within the advertising bidding impression campaign;

accepting, from a bidder, a bid against the selected desired impression quality rank;

determining an actual impression quality rank for an actual advertising impression in an advertising impression inventory; and

awarding the actual advertising impression to the bidder based on the bid and the actual impression quality rank.

**2.** The computer-implemented method of claim **1**, wherein the desired impression quality rank comprises a letter grade that is based on a measure of a probability of the actual advertising impression being seen and acted upon by an end consumer.

**3.** The computer-implemented method of claim **1**, wherein determining the actual impression quality rank comprises: aggregating average viewability of multiple actual impressions over a defined time period.

**4.** The computer-implemented method of claim **1**, wherein determining the actual impression quality rank comprises:

determining a viewability comprising a quantitative evaluation based on an opportunity for the actual advertising impression to be seen;

determining a verification comprising a qualitative evaluation of how and where the actual advertising impression is seen; and

combining the viewability and the verification to determine the quality rank.

**5.** The computer-implemented method of claim **1**, wherein the initializing comprises displaying a graphical user interface that is used to select the desired impression quality rank.

**6.** The computer-implemented method of claim **1**, wherein the initializing, selecting, and accepting are performed in combination with a real-time second price auction.

**7.** The computer-implemented method of claim **1**, further comprising:

selecting a target audience;

selecting a parameter for the advertising bidding impression campaign;

wherein the awarding is further based on the selected target audience and the selected parameter.

**8.** The computer-implemented method of claim **1**, further comprising:

selecting an additional desired impression quality rank within the advertising bidding impression campaign;

accepting, from the bidder, an additional bid against the selected additional desired impression quality rank; and

awarding an additional actual advertising impression to the bidder based on the additional bid and the additional desired impression quality rank.

**9.** The computer-implemented method of claim **8**, further comprising:

specifying a budget for the advertising bidding impression campaign; and

continuing to award actual advertising impressions and additional actual advertising impressions to the bidder based on the bid and the additional bid while remaining within the specified budget.

**10.** An advertising exchange system for bidding for an advertising impression in computer system comprising:

(a) a server computer having a processor and memory;

(b) an advertising exchange application executed by the processor on the server computer, wherein the advertising exchange application is configured to:

(1) initialize an advertising bidding impression campaign to bid for the advertising impression;

(2) select an desired impression quality rank within the advertising bidding impression campaign;

(3) accept, from a bidder, a bid against the selected desired impression quality rank;

(4) determine an actual impression quality rank for an actual advertising impression in an advertising impression inventory; and

(5) award the actual advertising impression to the bidder based on the bid and the actual impression quality rank.

**11.** The advertising exchange system of claim **10**, wherein the desired impression quality rank comprises a letter grade that is based on a measure of a probability of the actual advertising impression being seen and acted upon by an end consumer.

**12.** The advertising exchange system of claim **10**, wherein the advertising exchange application determines the actual impression quality rank by:

aggregating average viewability of multiple actual impressions over a defined time period.

**13.** The advertising exchange system of claim **10**, wherein the advertising exchange application determines the actual impression quality rank by:

determining a viewability comprising a quantitative evaluation based on an opportunity for the actual advertising impression to be seen;

determining a verification comprising a qualitative evaluation of how and where the actual advertising impression is seen; and

combining the viewability and the verification to determine the quality rank.

**14.** The advertising exchange system of claim **10**, wherein the advertising exchange application initializes by displaying a graphical user interface that is used to select the desired impression quality rank.

**15.** The advertising exchange system of claim **10**, wherein the advertising exchange application initializes, selects, and accepts in combination with a real-time second price auction.

**16.** The advertising exchange system of claim **10**, wherein the advertising exchange application is further configured to:

select a target audience;

select a parameter for the advertising bidding impression campaign;

wherein the awarding is further based on the selected target audience and the selected parameter.

**17.** The advertising exchange system of claim **10**, wherein the advertising exchange application is further configured to:

select an additional desired impression quality rank within the advertising bidding impression campaign;

accept, from the bidder, an additional bid against the selected additional desired impression quality rank; and

award an additional actual advertising impression to the bidder based on the additional bid and the additional desired impression quality rank.

**18.** The advertising exchange system of claim **17**, wherein the advertising exchange application is further configured to:

specify a budget for the advertising bidding impression campaign; and  
continue to award actual advertising impressions and additional actual advertising impressions to the bidder based on the bid and the additional bid while remaining within the specified budget.

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