



(19) **United States**

(12) **Patent Application Publication**
Chung et al.

(10) **Pub. No.: US 2008/0010120 A1**

(43) **Pub. Date: Jan. 10, 2008**

(54) **ECOMMERCE-ENABLED ADVERTISING**

Publication Classification

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(51) **Int. Cl.**
G06Q 30/00 (2006.01)
(52) **U.S. Cl.** **705/14**

(57) **ABSTRACT**

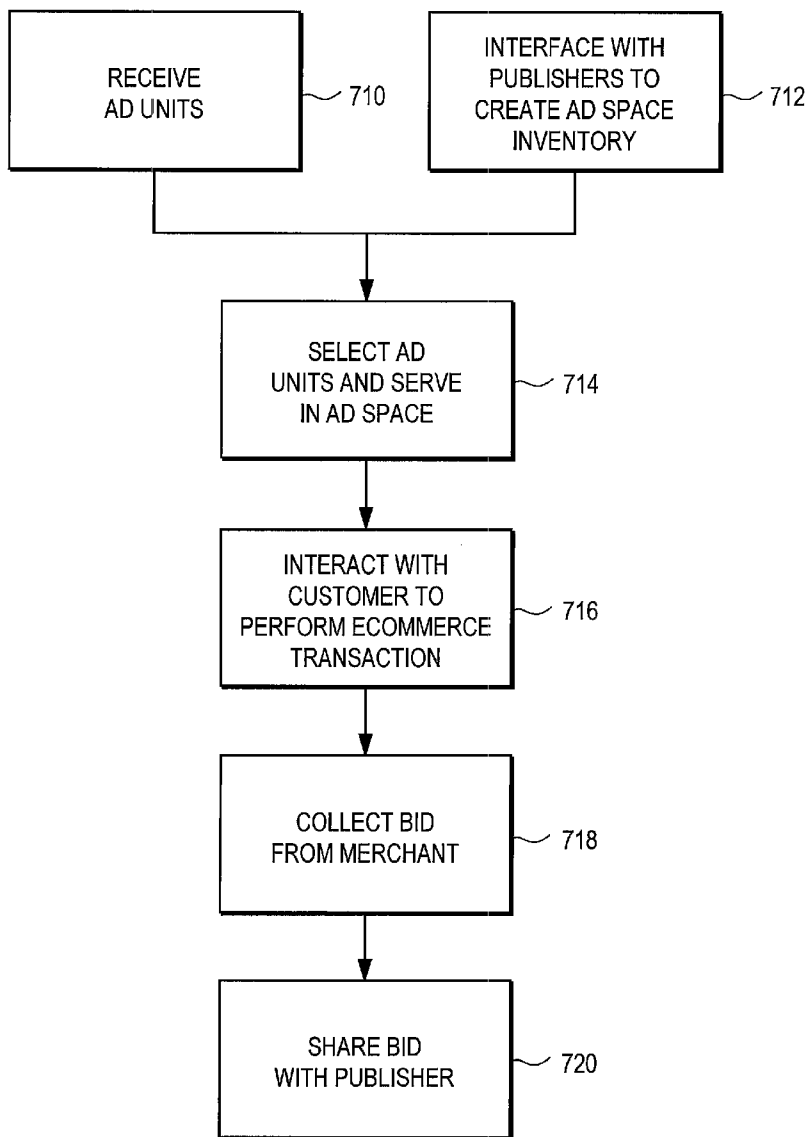
Merchants create ecommerce-enabled ad units advertising items offered by the merchants. The ad units contain functionality enabling customers to purchase the items by interacting with the ad units. The ad units have associated bid prices that the merchants agree to pay for sales through the ad units. The merchants provide the ad units to a broker. The broker publishes the ad units on web pages provided by publishers. A customer receiving a web page interacts with the ad unit to purchase the item. During the interactions, the broker dynamically updates the ad unit to carry out the transaction. The broker collects the bid price from the merchant and shares it with the publisher that published the page on which the ad unit appeared.

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(21) Appl. No.: **11/424,516**

(22) Filed: **Jun. 15, 2006**



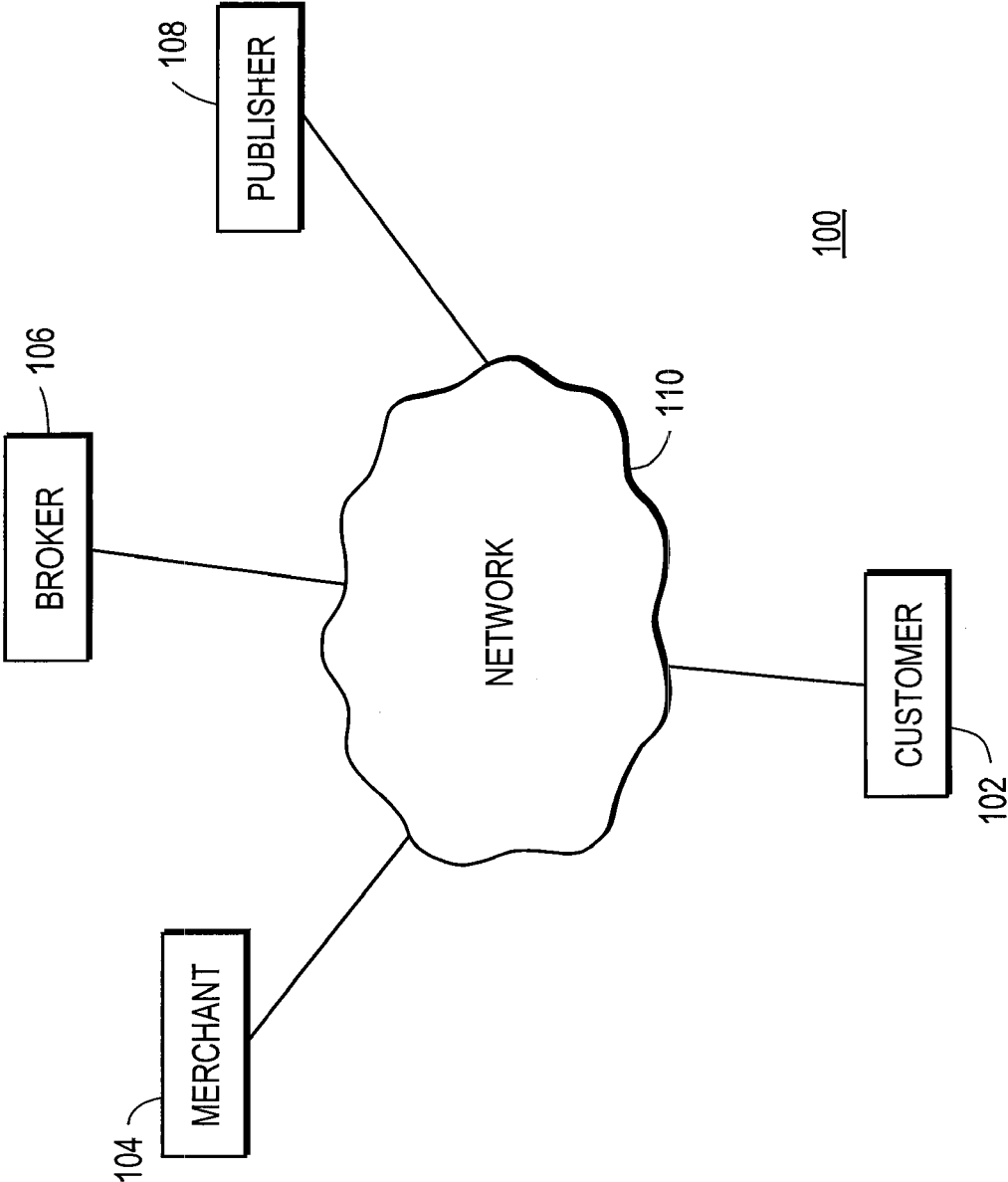


FIG. 1

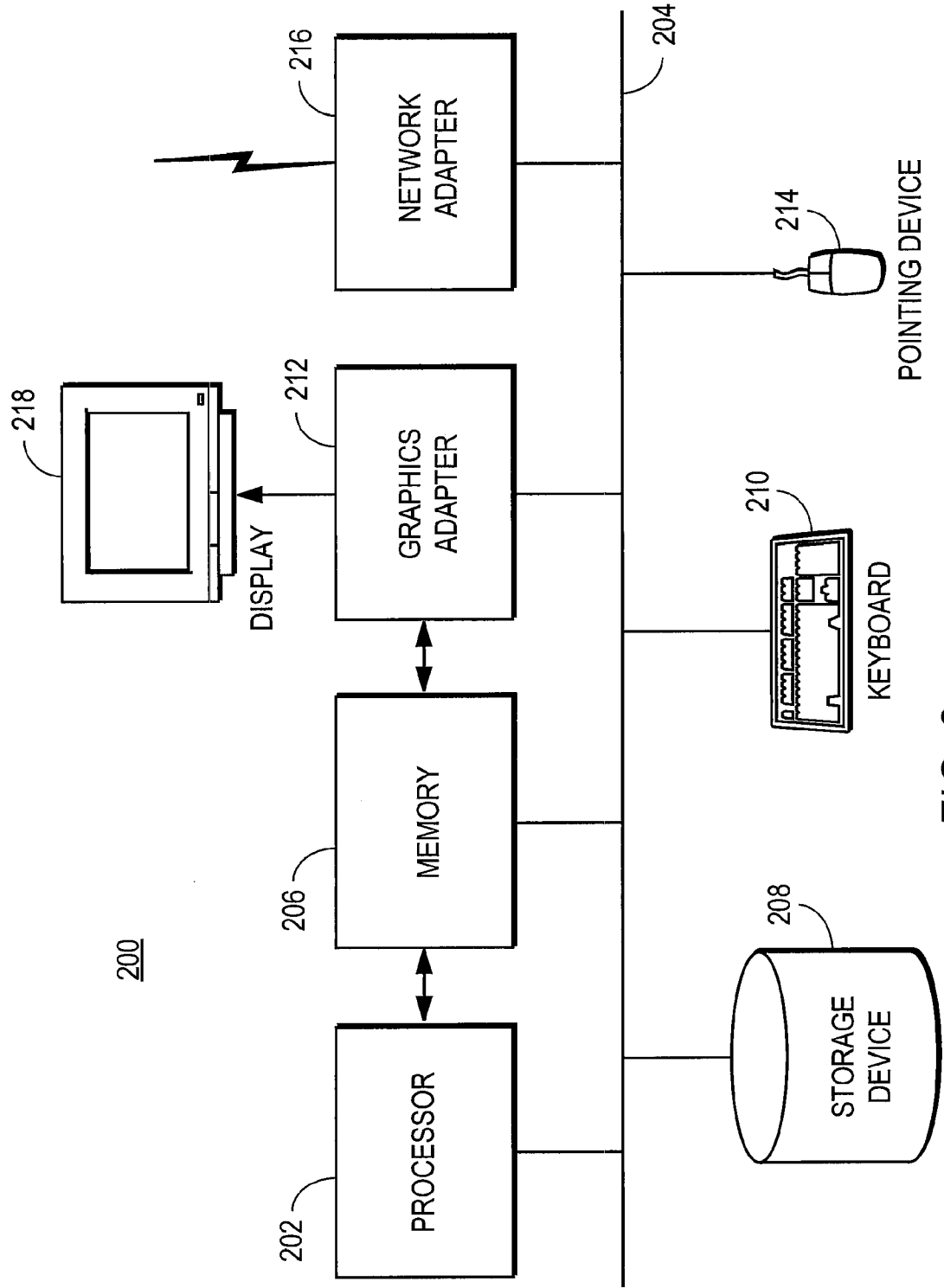


FIG. 2

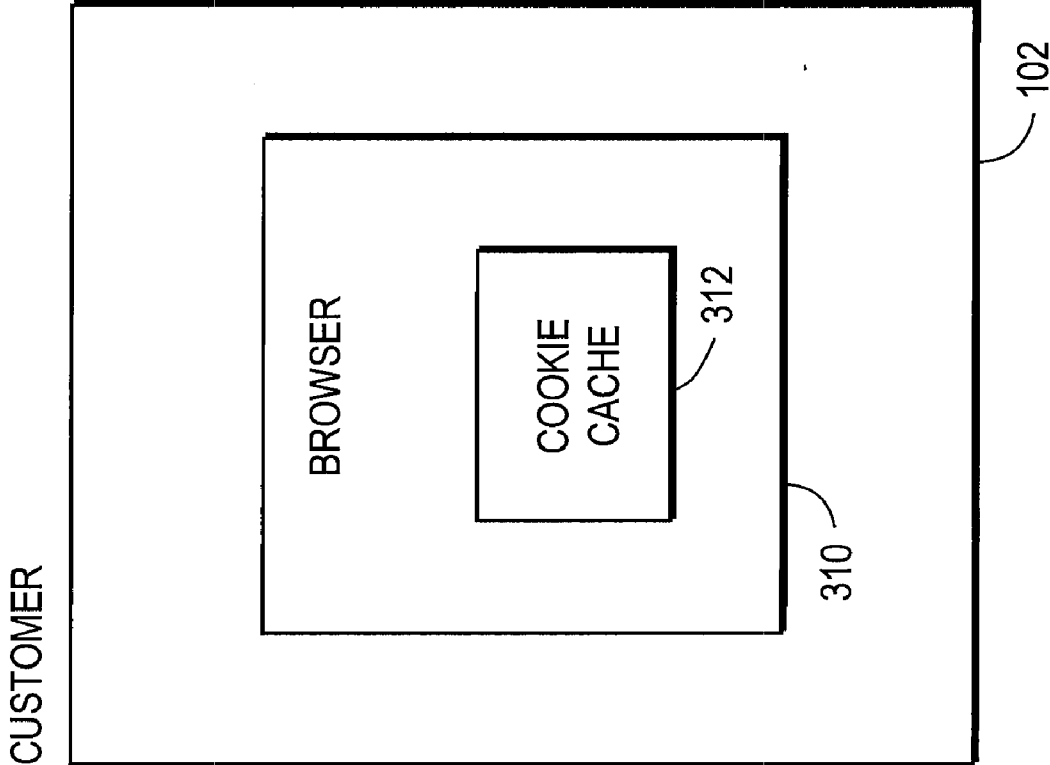


FIG. 3

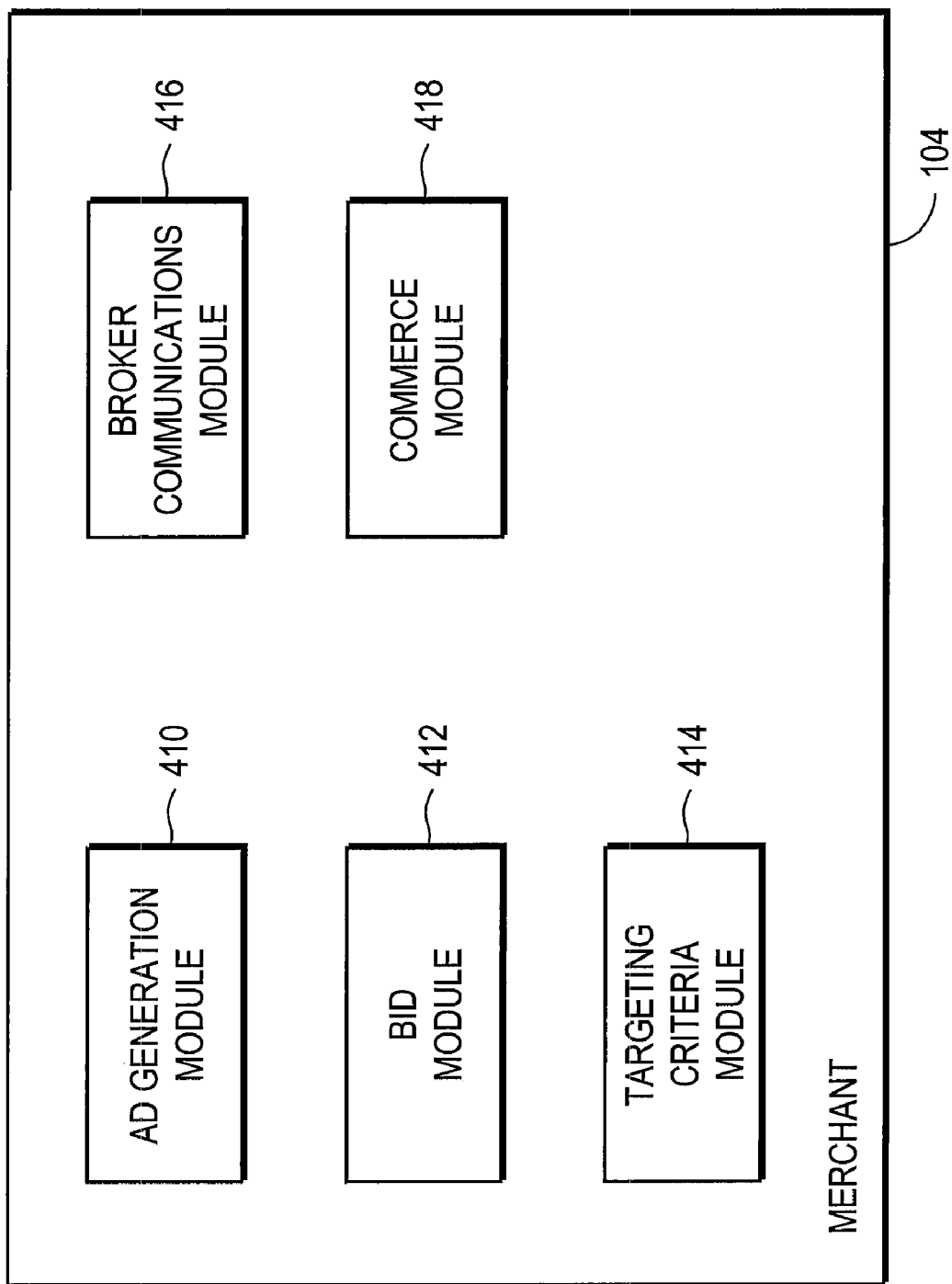


FIG. 4

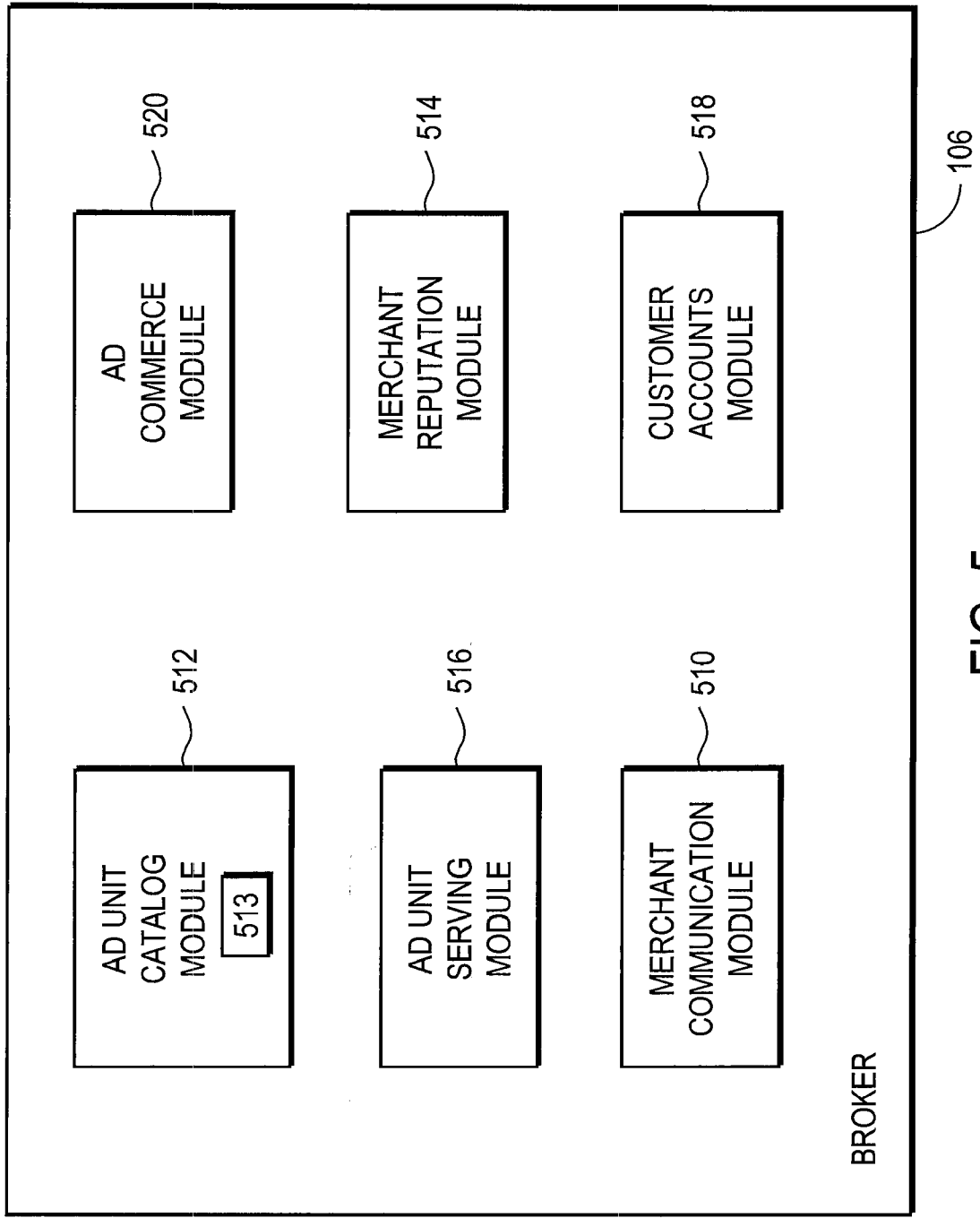


FIG. 5

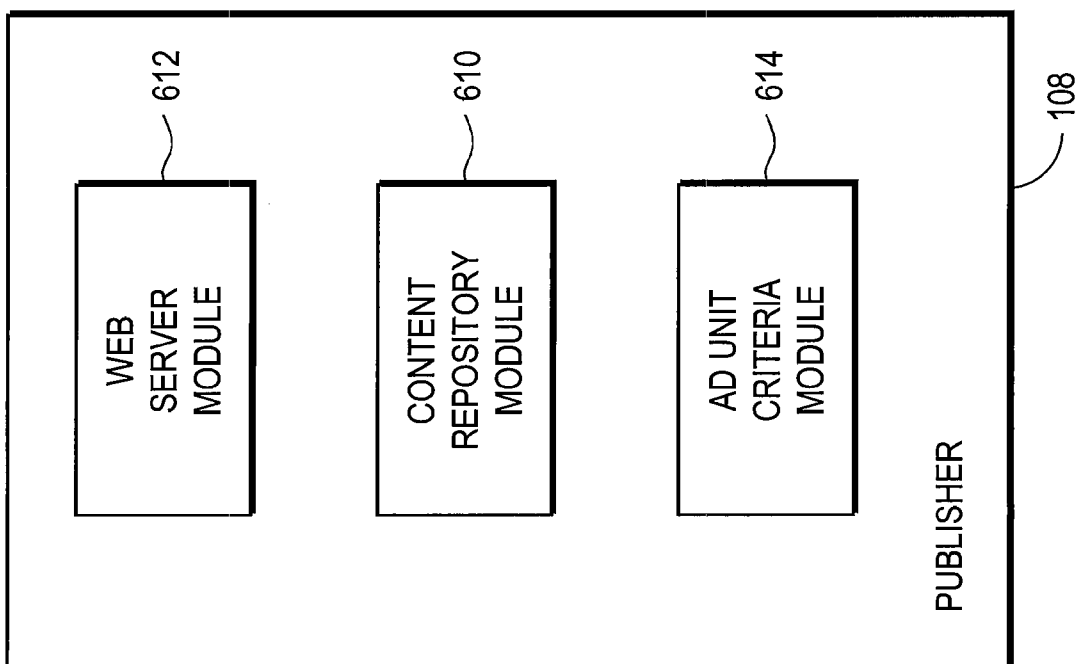


FIG. 6

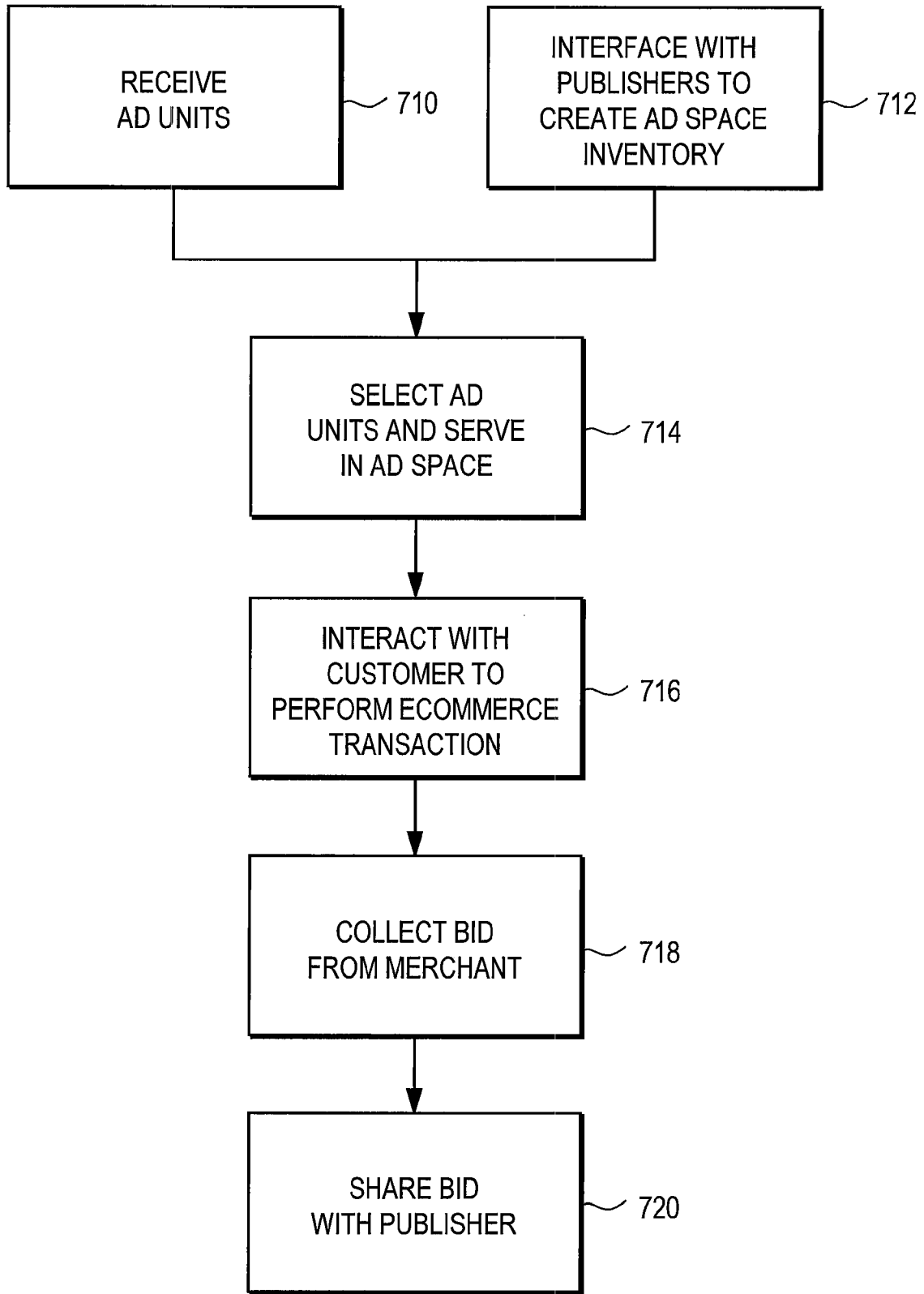


FIG. 7

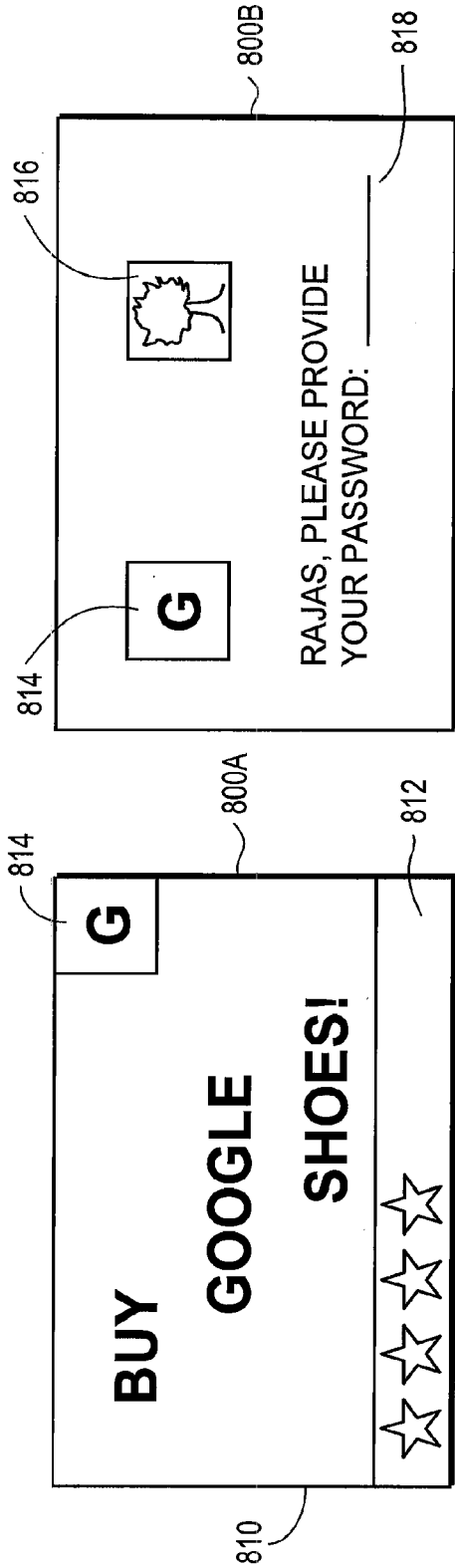


FIG. 8B

FIG. 8A

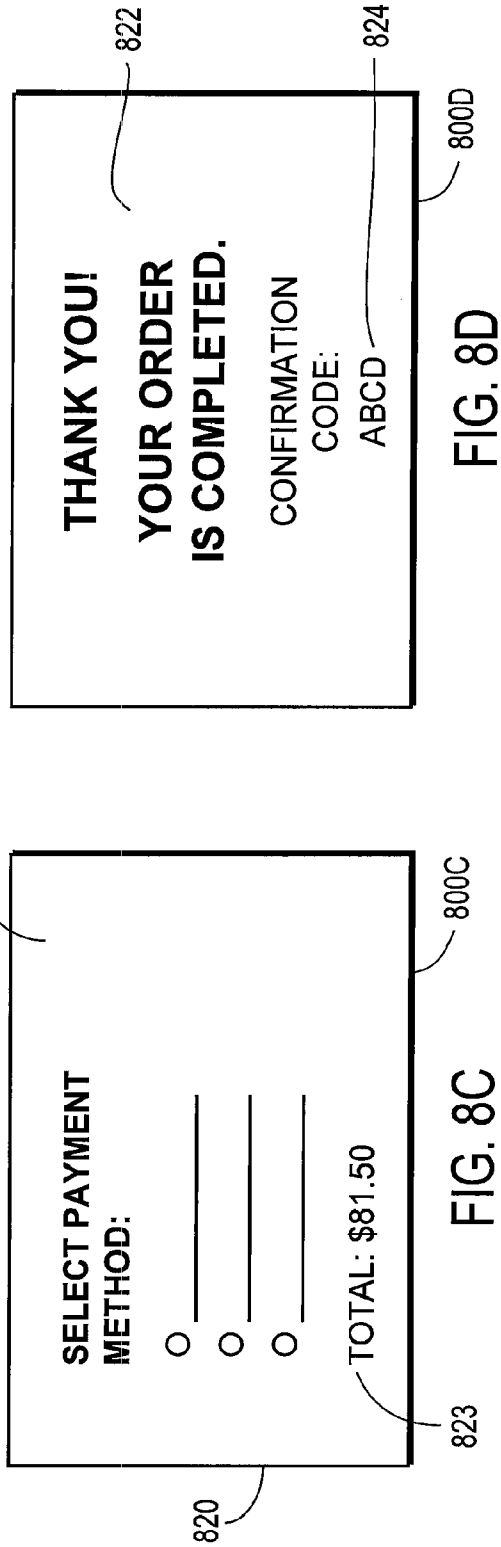


FIG. 8D

FIG. 8C

ECOMMERCE-ENABLED ADVERTISING

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention pertains in general to electronic commerce and in particular to advertising and selling items on the Internet.

[0003] 2. Description of the Related Art

[0004] Electronic commerce on the Internet has become commonplace. There are many merchants offering items via web sites on the Internet, and there are an even greater number of customers who purchase the items. In many cases, the electronic commerce transactions involve physical items. For example, many customers purchase items such as books, compact disks (CDs) and DVDs via the Internet. Customers also purchase electronic items such as downloadable text, music, and access to web sites that provide news or entertainment stories.

[0005] Many merchants promote themselves and their offered items by running online advertising programs. The merchants create electronic ads, such as banner ads or small textual ads, and run these ads on their own or others' web sites. Google Inc. of Mountain View, Calif., for example, provides an ADWORDS program that lets merchants create ads and choose criteria that match the ads to potential customers. The ADWORDS program then runs the ads on web pages likely to be viewed by the customers. In addition, Google Inc. provides a corresponding ADSENSE program that lets web site publishers run ads from merchants on the publishers' sites.

[0006] While the advertising programs described above are successful, there are some drawbacks associated with them. One drawback is that the ads usually link to merchant web pages that are not specific to the ads. For example, an ad that offers tickets to a particular movie or concert might link to a general page about movies, and not to the specific page allowing the customer to purchase tickets for the advertised movie. As a result, the customer must then navigate from the general page to the specific page for the movie. This extra navigating is undesirable because it leads to customer attrition and reduced sales.

[0007] Another drawback is that the customers navigate away from the ad-bearing web page when they select the ad. The publishers who carry the ads often seek to keep the customers on the publishers' own web pages. Selecting an ad takes a customer away from the original web page and interrupts the customer's interaction with the publisher.

[0008] Moreover, customers who are interested in an advertised product are oftentimes reluctant to purchase items from smaller or relatively unknown merchants. These merchants lack the brand recognition and trust associated with larger, better known merchants. Therefore, the customers hesitate to engage in risky behavior, such as providing credit card numbers, shipping addresses, or other personally-identifiable information to the merchants, resulting in fewer purchases than would occur if this drawback were not present.

[0009] Accordingly, there is a need in the art for a way to overcome the drawbacks described above.

BRIEF SUMMARY OF THE INVENTION

[0010] The above needs are met by a method of conducting electronic commerce on a network that includes access-

ing a collection of ads unit advertising items offered by merchants and having associated bids that the merchants pay responsive to purchases of the advertised items through the ad units, publishing ad units selected from the collection of ad units to customers via the network, interacting with a customer through a published ad unit to enable the customer to purchase an item advertised by the ad unit, and collecting a bid associated with the published ad unit in response to the customer's purchase of the item.

[0011] The above needs are also met by a method of conducting electronic commerce on a network that includes providing an electronic payment system enabling customers to purchase items via the network, receiving an ad unit advertising an item offered by a merchant, the ad unit including functionality for enabling a customer to purchase the item using the electronic payment system and having an associated bid price the merchant pays upon a sale of the advertised item, publishing the ad unit on a plurality of web pages from a plurality of publishers, and collecting the bid price in response to a customer utilizing the functionality in the ad unit to purchase the item from the merchant using the electronic payment system.

[0012] The above needs are further met by a system and computer program product including an ad unit serving module for selectively serving electronic commerce-enabled ad units on web pages published by publishers on the network, the ad units advertising items offered by merchants and having associated bids that the merchants pay responsive to purchases of the advertised items through the ad units, and a commerce module for interacting with a customer through a published ad unit to enable the customer to purchase an item advertised by the ad unit and for collecting a bid associated with the ad unit in response to the customer's purchase of the item.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1 is a high-level block diagram of a computing environment according to one embodiment.

[0014] FIG. 2 is a high-level block diagram illustrating a functional view of a typical computer system for use as one of the entities illustrated in the environment of FIG. 1 according to one embodiment.

[0015] FIG. 3 is a high-level block diagram illustrating modules within a customer according to one embodiment.

[0016] FIG. 4 is a high-level block diagram illustrating modules within a merchant according to one embodiment.

[0017] FIG. 5 is a high-level block diagram illustrating modules within a broker according to one embodiment.

[0018] FIG. 6 is a high-level block diagram illustrating modules within a publisher according to one embodiment.

[0019] FIG. 7 is a flow chart illustrating the operation of the broker according to one embodiment of an exemplary transaction where a customer interacts with an ad unit to purchase an item.

[0020] FIG. 8 illustrates four sample displays the broker creates in the ad unit to guide the customer through the ecommerce transaction according to one embodiment.

[0021] The figures depict an embodiment of the present invention for purposes of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illus-

trated herein may be employed without departing from the principles of the invention described herein.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A. Overview

[0022] FIG. 1 is a high-level block diagram of a computing environment 100 according to one embodiment of the present invention. FIG. 1 illustrates a customer 102, a merchant 104, a broker 106, and a publisher 108 connected by a network 110. At a high level, the merchant 104 creates one or more advertisements (ads) advertising items offered by the merchant 104. The publisher 108 serves web pages or other electronic documents to the customer 102. The broker 106 causes the merchant's ads to appear on the pages served by the publisher 108. The customer 102 can interact with an ad to purchase the item from the merchant 104, without leaving the page served by the publisher 108. In one embodiment, the broker 106 includes a payment system that facilitates the transaction.

[0023] The network 110 represents the communication pathways between the customer 102, merchant 104, broker 106, and publisher 108. In one embodiment, the network 110 is the Internet. The network 110 can also utilize dedicated or private communications links that are not necessarily part of the Internet. In one embodiment, the network 110 uses standard communications technologies and/or protocols. Thus, the network 110 can include links using technologies such as Ethernet, Wi-fi (802.11), integrated services digital network (ISDN), digital subscriber line (DSL), asynchronous transfer mode (ATM), etc. Similarly, the networking protocols used on the network 110 can include multiprotocol label switching (MPLS), the transmission control protocol/Internet protocol (TCP/IP), the hypertext transport protocol (HTTP), the simple mail transfer protocol (SMTP), the file transfer protocol (FTP), etc. In one embodiment, at least some of the links use mobile networking technologies, including general packet radio service (GPRS), enhanced data GSM environment (EDGE), code division multiple access 2000 (CDMA2000), and/or wide-band CDMA (WCDMA). The data exchanged over the network 110 can be represented using technologies and/or formats including the hypertext markup language (HTML), the extensible markup language (XML), the wireless access protocol (WAP), the short message service (SMS) etc. In addition, all or some of links can be encrypted using conventional encryption technologies such as the secure sockets layer (SSL), Secure HTTP and/or virtual private networks (VPNs). In another embodiment, the entities can use custom and/or dedicated data communications technologies instead of, or in addition to, the ones described above.

[0024] The publisher 108 is an entity that provides web pages and/or other electronic documents to customers 102. The publisher 108 can be, for example, a major Internet web site operated by a national media outlet, a personal blog on a web server operated by a lone individual, and/or another distributor of web pages. While only one publisher 108 is shown in FIG. 1, embodiments of the environment 100 can have thousands or millions of different publishers. Only one publisher 108 is shown for purposes of clarity. This description uses the term "web page" to refer to any electronic document served by a publisher 108, regardless of whether the document is technically a web page.

[0025] At least some of the web pages served by the publisher 108 have regions that can contain ads. For example, an ad can be displayed as a banner across the top of the page, in the upper-left corner of the page, and/or along the right-side margin of the page. Collectively, the available ad placement regions on the web pages of the thousands or millions of publishers 108 on the network 110 represent a vast inventory of ad space.

[0026] The merchant 104 represents an entity that sells items on the network 110 or makes items available through other types of electronic commerce (ecommerce) transactions. The merchant 104 offering an item to the buyer is sometimes referred to as the "seller" and the transaction is sometimes referred to as a "sale" or "purchase." As used herein, these terms also refer to other types of transactions, regardless of whether the merchant 104 is technically a "seller" or the transaction is technically a "sale." Although FIG. 1 illustrates only one merchant 104, embodiments of the present invention can have many participating merchants.

[0027] The merchant 104 creates ad units advertising the items it offers. In one embodiment, the ad units contain aspects designed to entice customers 102 to buy the items being advertised. In addition, the ad units are ecommerce-enabled, meaning that the ad units contain functionality enabling the customers 102 to buy the items by interacting directly with the ads. Thus, the ad units allow the customers 102 to purchase the advertised items without visiting the merchant's web site or otherwise leaving the web page on which the ad is presented.

[0028] In one embodiment, the merchant 104 provides the ad units to the broker 106 and/or provides the broker 106 with information the broker uses to create ad units for the merchant. Further, the merchant 104 specifies a bid for each ad unit. The bid represents a price that the merchant 104 agrees to pay the broker 106 when a customer 102 purchases an item through the ad unit. The bid, therefore, resembles a commission to the broker 106. In one embodiment, the merchant 104 also associates targeting criteria with the ad units, such as sets of keywords with which the items being advertised are associated, and/or the types of web sites on which the ad units should appear.

[0029] The broker 106 receives the ad units from the merchants 104 and selectively runs the ads on the web pages served by the publishers 108. In one embodiment, the broker 106 identifies web pages that satisfy an ads' targeting criteria, and runs the ad on those pages. In addition, the broker 106 considers the bids made by competing merchants 104 when selecting the ad or ads to show on a particular page. The broker 106 may sell the ad space to the highest bidder, and/or utilize other techniques to select the ad unit that generates the highest revenue to the broker 106.

[0030] In one embodiment, the broker 106 acts as an intermediary for a transaction between the customer 102 and the merchant 104. The broker 106 operates a payment system that functions as a centralized place that the customers 102 can use to pay for items offered by the merchants 104 via the ad units. Thus, the customers 102 can patronize multiple merchants 104 while providing their payment information to only the broker 106.

[0031] Although FIG. 1 illustrates only a single broker 106, embodiments of the present invention have multiple brokers participating in the electronic commerce system. Moreover, in some embodiments the ad serving and pay-

ment system functionalities are performed by different entities. Thus, one entity focuses on serving ad units while another entity operates the payment system utilized by the ad units to perform the ecommerce transactions.

[0032] The customer 102 is an entity that receives web pages from the publishers 108 and optionally purchases items by interacting with the ad units on those pages. The customer 102 is sometimes referred to as the “buyer” and the transaction is sometimes referred to as a “sale” or “purchase.” As used herein, these terms also refer to other types of transactions, regardless of whether the customer 102 is technically a “buyer” or the transaction is technically a “purchase.” In addition, this description sometimes uses the term “customer” to refer to a potential customer that has not yet expressed an interest in purchasing an item.

[0033] In one embodiment, the customer 102 includes a computer system utilized by an end-user to communicate with other computers on the network 110 in order to effect a purchase. In other embodiments, the customer 102 includes a network-capable device other than a computer system, such as a personal digital assistant (PDA), a cellular telephone, a pager, a television “set-top box” etc. Although FIG. 1 illustrates only one customer 102, embodiments of the present invention can have thousands or millions of customers connected to the network 110.

[0034] The customer 102 interacts with an ad unit on a web page received from the publisher 108 to purchase an item from the merchant 104 via the broker’s payment system. In response, the broker 106 communicates with the merchant 104 to facilitate the delivery of the purchased item to the customer 102. The broker 106 collects the bid from the merchant 104, and, in one embodiment, shares the bid with the publisher 108.

[0035] Thus, the system described herein allows the merchant 104 to represent its inventory as a collection of ad units, and then publish the ad units on the network 110 in places likely to reach customers 102. For example, a commerce bookseller can create ad units for the different book titles it sells, define targeting criteria for each ad unit describing the likely purchasers of the book, and then utilize the broker 106 and publishers 108 to distribute the ad units to the customers 102. Since the customers 102 can purchase the books by interfacing directly with the ad units, the merchant 104 need not maintain a separate web site for selling the books (although the merchant can do so if it desires). Rather, each ad unit functions as its own “virtual storefront.”

II. System Architecture

[0036] FIG. 2 is a high-level block diagram illustrating a functional view of a typical computer system 200 for use as one of the entities illustrated in the environment 100 of FIG. 1 according to one embodiment. Illustrated are at least one processor 202 coupled to a bus 204. Also coupled to the bus 204 are a memory 206, a storage device 208, a keyboard 210, a graphics adapter 212, a pointing device 214, and a network adapter 216. A display 218 is coupled to the graphics adapter 212.

[0037] The processor 202 may be any general-purpose processor such as an INTEL x86 compatible-CPU. The storage device 208 is, in one embodiment, a hard disk drive but can also be any other device capable of storing data, such as a writeable compact disk (CD) or DVD, or a solid-state memory device. The memory 206 may be, for example,

firmware, read-only memory (ROM), non-volatile random access memory (NVRAM), and/or RAM, and holds instructions and data used by the processor 202. The pointing device 214 may be a mouse, track ball, or other type of pointing device, and is used in combination with the keyboard 210 to input data into the computer system 200. The graphics adapter 212 displays images and other information on the display 218. The network adapter 216 couples the computer system 200 to the network 110.

[0038] As is known in the art, the computer system 200 is adapted to execute computer program modules. As used herein, the term “module” refers to computer program logic and/or data for providing the specified functionality. A module can be implemented in hardware, firmware, and/or software. In one embodiment, the modules are stored on the storage device 208, loaded into the memory 206, and executed by the processor 202.

[0039] The types of computer systems 200 utilized by the entities of FIG. 1 can vary depending upon the embodiment and the processing power utilized by the entity. For example, the customer 102 typically requires less processing power than the merchant 104, broker 106, or publisher 108. Thus, the customer computer system can be a standard personal computer system. The merchant, broker, and/or publisher computer systems, in contrast, might comprise more powerful computers and/or multiple computers working together to provide the functionality described herein.

[0040] FIG. 3 is a high-level block diagram illustrating modules within a customer 102 according to one embodiment. Those of skill in the art will recognize that other embodiments can have different and/or other modules than the ones described here, and that the functionalities can be distributed among the modules in a different manner.

[0041] As shown in FIG. 3, the customer 102 includes a browser module 310 that allows the customer to view web pages and other data provided by the merchant 104, broker 106, publisher 108, and/or other entities on the network 110. In one embodiment, the browser module 310 is a conventional web browser, such as MICROSOFT INTERNET EXPLORER or MOZILLA FIREFOX. In one embodiment, the browser module 310 maintains a cookie cache 312 that stores cookies associated with web sites on the network 110. Web sites operated by the merchant 104, broker 106, and publisher 108 can communicate with the browser module 310 and instruct it to create cookies in the cookie cache 312 holding certain information. The browser module 310 provides the cookie to the site that created it or another site with authorization to access the cookie during subsequent interactions, thereby allowing the site to recognize the customer 102.

[0042] FIG. 4 is a high-level block diagram illustrating modules within a merchant 104 according to one embodiment. Those of skill in the art will recognize that other embodiments can have different and/or other modules than the ones described here, and that the functionalities can be distributed among the modules in a different manner.

[0043] An ad generation module 410 generates ecommerce-enabled ad units for the merchant 104. In most cases, each ad unit is designed to sell a single type of item from the merchant’s inventory. For example, if the merchant is a bookseller, each ad unit sells a particular title of book stocked by the bookseller. The merchant 104 can also design ad units that sell multiple and/or bundled items.

[0044] The ad units are “ecommerce enabled” because a customer **102** can interact directly with the ad units to purchase the advertised items from the merchant **104**. Through these interactions, the customer **102** specifies a quantity to purchase, provides payment and shipping information, receives a final price and purchase confirmation, and/or performs other steps utilized in the transaction. In one embodiment, the ad units interact with the payment system provided by the broker **106** to effect the ecommerce transactions.

[0045] An ad unit contains dynamic content that is updated as the customer **102** interacts with it. In one embodiment, the ad unit includes and/or references multiple web pages or other elements that collectively allow the customer **102** to specify a quantity, provide payment information, etc. The web pages are updated in real-time using Asynchronous JavaScript and XML (AJAX) technology and/or other technologies that allow individual components of web pages to be updated dynamically and asynchronously.

[0046] In one embodiment, the ad generation module **410** operates on an ad template received from the broker **106** and/or another source. The ad template defines the basic format of the ad unit, such as its size and the locations of elements such as text and video, and includes stubs for the ecommerce functionality. The merchant **104** utilizes the ad generation module **410** to customize the template by adding artwork, defining behaviors, and making other alterations to customize the ad unit.

[0047] In one embodiment, the merchant **104** utilizes the ad generation module **410** to associate advertising data with the ad unit. The advertising data are designed to attract a customer **102** and cause the customer to interact with the ad unit to purchase the item being advertised. The advertising data include text, images, video, audio, and/or other forms of media that are displayed when the ad unit is published.

[0048] In addition, the merchant **104** utilizes the ad generation module **410** to associate transaction data with the ad unit. The transaction data are used to conduct the ecommerce transaction using the ad unit and include information such as the name, description, and price of the item being advertised, tax rules describing how to tax sales of the item in one or more jurisdictions, shipping rules describing costs and limitations on delivering the item to the customer **102**, a merchant stock keeping unit (SKU) that uniquely identifies the item to the merchant, etc.

[0049] In one embodiment, the ad generation module **410** embeds the advertising and transaction data directly within the ad unit. In another embodiment, some data, such as the SKU, are embedded within the ad unit while other data are maintained separately and provided to the broker **106** via a separate feed. This latter embodiment allows the merchant **104** to dynamically update certain data, such as the price, without creating a new ad unit.

[0050] In one embodiment, the ad generation module **410** defines data for an ad unit and provides the data to the broker **106**. For example, the merchant **104** uses the ad generation module **410** to provide the broker **106** with a feed or list of products for sale (along with related data, such as descriptions, prices, etc.). The broker **106**, in turn, creates the ad unit using the defined data.

[0051] A bid module **412** defines a bid price that the merchant **104** agrees to pay the broker **106** when the item advertised by the ad unit is sold to a customer **102**. For

example, the merchant **104** can bid to pay the merchant \$10 for each sale of an item. The bid is essentially a commission that the merchant **104** agrees to pay the broker **106** for a sale, and also represents the merchant’s cost per acquisition (CPA) of a customer **102**. In one embodiment, the bid module **412** stores the merchant’s bid as transaction data associated with the ad unit.

[0052] A targeting criteria module **414** defines targeting criteria for the ad unit. In one embodiment, the merchant **104** uses the targeting criteria module **414** to describe in what circumstances and/or where the ad should appear. In one embodiment, ad units are contextually targeted and/or site-targeted.

[0053] The targeting criteria for a contextually targeted ad unit describe the context in which the ad unit should appear. In one embodiment, the contextual targeting criteria include keywords identifying terms with which the ad unit is associated. For example, if the ad unit is selling tennis balls, the targeting criteria can include keywords such as “tennis,” “racquet,” “Wimbledon,” etc.

[0054] The targeting criteria for a site-targeted ad unit describe web sites (i.e., content provided by publishers **108**) where the merchant **104** desires the ad unit to appear. The targeting criteria identify the sites explicitly and/or indirectly through demographic or other criteria. For example, the targeting criteria can specify that the ad unit should appear on web pages from the site “www.google.com” and/or that the ad unit should appear on sites with many visitors within the 18-34 age demographic.

[0055] In one embodiment, the merchant **104** utilizes the bid module **412** in combination with the targeting criteria module **414** to define bid prices that the merchant pays when a potential customer **102** clicks (i.e., selects) an ad unit, regardless of whether the customer **102** eventually purchases the item being advertised. Further, in one embodiment the merchant **104** utilizes these two modules **412**, **414** to define bid prices that the merchant pays when an ad unit is displayed on a web page (i.e., for each impression of the ad). The merchant **104** can make these bids in addition to, or instead of, the bid for each sale of an advertised item.

[0056] A broker communications module **416** communicates with the broker **106** via the network **110**. In one embodiment, the broker communications module **416** provides the merchant’s ad units to the broker **106**. As described above, in some embodiments all of the data defined for the ad units are embedded in the ad units sent to the broker **106**. In other embodiments, the broker communications module **416** sends data that the broker **106** uses to create ad units. In still other embodiments, the broker communications module **416** sends the broker **106** ad units and a separate data feed with additional data for the ad units. For example, the broker communications module **416** sends the broker **106** an ad unit containing a SKU or other identification that uniquely identifies the ad unit. The broker communications module **416** also sends the broker **106** a separate data feed that contains data for ad units identified by their SKUs.

[0057] In one embodiment, merchant-broker communications are conducted using the web services description language (WSDL). The broker communications module **416** uses the WSDL to describe the services it provides and ascertain the services provided by the broker **106**. The broker communications module **416** uses XML-based remote procedure calls (RPCs) to provide information to the broker **106** and receive information in return. In other

embodiments, the broker communications module **416** communicates with the broker **106** using other techniques and/or protocols, such as via email messages, HTML web pages intended for review by human users, proprietary communications protocols, etc.

[0058] A commerce module **418** supports ecommerce transactions involving the merchant **104**. In one embodiment, the commerce module **418** interacts with the broker **106** via the broker communications module **416** to facilitate purchases by customers **102** made through the ad units. To this end, the commerce module **418** supports transactions performed by the broker **106** by, for example, specifying tax rates for different jurisdictions, calculating shipping costs to the customer, notifying the broker **106** when an order ships, and providing tracking numbers for shipped items. In one embodiment, the commerce module **418** performs backend tasks for the merchant **104**, such as maintaining inventories, coordinating shipping, emailing receipts to customers **102**, and/or performing accounting.

[0059] FIG. 5 is a high-level block diagram illustrating modules within the broker **106** according to one embodiment. Those of skill in the art will recognize that other embodiments can have different and/or other modules than the ones described here, and that the functionalities can be distributed among the modules in a different manner.

[0060] The broker **106** includes a merchant communications module **510** for communicating with the merchants **104**. The merchant communications module **510** performs functions including receiving ad units, ad data and/or data feeds from the merchants, and communicating with the merchants to facilitate ecommerce transactions. In one embodiment, this module **510** is the counterpart to the broker communications module **416** in the merchant **104**.

[0061] An ad unit catalog module **512** stores ad units **513** received from the merchants **104**. The ad unit catalog **512** serves as a data repository from which the ad units can be retrieved and served on web pages published by the publishers **108**. In one embodiment, the ad unit catalog **512** receives the data contained in any data feeds from the merchants **104** and associates the data with the corresponding ad units. For example, the ad unit catalog **512** associates data referencing a particular merchant's SKU with the ad unit corresponding to that SKU.

[0062] In one embodiment, the ad unit catalog module **512** includes functionality for creating ad units **513** based on ad unit data received from a merchant **104** and/or another source. This functionality allows the broker **106** to receive a data feed from the merchant **104** and utilize the data to create ad units in the catalog module **512**. Similarly, in one embodiment, the ad unit catalog module **512** and/or another module in the broker **106** creates ad units dynamically based on data stored in the ad unit catalog module **512** or elsewhere. For example, the ad unit catalog module **512** stores data describing items offered by the merchants **104** and dynamically creates an ad unit when necessary.

[0063] In one embodiment, the ad unit catalog **512** provides a public interface that allows publishers **108** and/or other entities to browse the ad units in the catalog. The interface supports browsing by merchant, item, item type, item price, bid price, and/or other criteria. This interface is used, for example, by publishers **108** that desire to select the ad units that will appear on their web pages.

[0064] In one embodiment, the ad unit catalog module **512** is located in a data repository external to the broker **106**. For

example, the ad unit catalog module **512** is maintained by a dedicated entity and/or associated with another entity on the network **110**. FIG. 5 shows the ad unit catalog **512** within the broker **106** for purposes of clarity.

[0065] A merchant reputation module **514** monitors transactions performed by the broker **106** on behalf of the merchants **104** and calculates reputation scores indicating the relative qualities of the merchants **104**. Since the broker **106** conducts payment-related processing on behalf of merchants **104** in one embodiment, the merchant reputation module **514** receives transaction data indicating the relative qualities of the merchants. For example, an embodiment of the merchant reputation module **514** favors merchants that have relatively high amounts and/or volumes of transactions. These data signal that the merchants **104** are popular. Similarly, an embodiment of the merchant reputation module **514** measures the delay between when orders are placed and when they are fulfilled by merchants **104** in order to evaluate the merchants' inventory and processing efficiencies. Merchants **104** that fulfill orders promptly are favored over other merchants. Further, an embodiment of the merchant reputation module **514** measures the number and/or amount of refund and chargeback requests made for the merchants **104**. Merchants **104** with fewer refund and chargeback requests are favored over merchants with more such requests. In one embodiment, the merchant reputation module **514** provides an interface allowing customers **102** to provide feedback describing their experiences with the merchants **104**. Embodiments of the merchant reputation module **514** use other and/or additional data to calculate reputation scores for the merchants **104**.

[0066] In one embodiment, the merchant reputation module **514** quantizes a merchant's reputation score into a numerical and/or graphical rating, such as assigning the merchants one through five stars, where five stars indicates the highest possible reputation. This rating is added to the ad units stored in the ad unit catalog **512** and/or otherwise included in ad units published by the publishers **108**. In one embodiment, the broker **106** causes a merchant's rating to appear on the merchant's ad units, thereby providing the customer **102** with an indication of the merchant's reputation.

[0067] An ad unit serving module **516** selects ad units in the ad unit catalog **512** and serves the ads on web pages published by the publishers **108**. In one embodiment, the ad unit serving module **516** selects ad units in real-time, based on the merchant-specified targeting criteria, the merchant's bid price, the merchant's reputation score, the characteristics of the publisher **108** or web page being published, and/or other criteria. For example, if the web page served by the publisher contains the terms "tennis" and "racquet," and an ad unit has those terms in its targeting criteria, the ad serving module **516** serves the ad unit on the web page. In one embodiment, the ad unit serving module **516** provides the ad unit catalog module **512** with criteria for an ad unit (e.g., an ad unit matching "tennis"), and the ad unit catalog module dynamically creates the ad unit and provides it to the serving module.

[0068] If there are multiple ad units having targeting criteria satisfied by a particular web page, an embodiment of the ad unit serving module **516** analyzes the bid prices and/or the historical performances of the ad units to identify and select the ad unit or units likely to maximize revenue to the broker **106** and/or publisher. For example, an embodi-

ment of the ad unit serving module **516** is more likely to select an ad unit that bids \$5/sale and has historically produced high sales over an ad unit that bids \$7.50/sale but has historically produced few sales. Likewise, an embodiment of the ad unit serving module **516** is more likely to select an ad unit from a merchant **104** having a high reputation score than a unit from a merchant having a lower score. Thus, the ad unit serving module **516** might select an ad unit from a merchant **104** with a high transaction volume and relatively few refund requests over an ad unit from a merchant without these qualities.

[0069] A customer account module **518** maintains accounts for customers **102** and allows new customers to establish accounts with the broker **106**. An embodiment of the customer account module **518** includes a web server that presents a new customer with one or more web pages allowing the customer to create an account and select an ID, password and/or other identifying information. In one embodiment, the customer **102** also supplies payment information specifying a charge account and/or creating a stored value. The payment information can include, for example, a credit card number, a cellular telephone number, and/or a gift certificate identifier. The customer **102** can also supply information including mailing/shipping addresses and settings for miscellaneous preferences. In one embodiment, the customer account module allows a customer **102** to establish a default payment method and/or shipping address. Also, in one embodiment the customer **102** selects a graphical image that the broker **106** can later show the customer in order to prove that the customer is interacting with the broker and not a third party.

[0070] In one embodiment, the customer account module **518** provides the customer's web browser **310** with a cookie that identifies the customer and/or the customer's account. When the customer **102** interacts with the broker **106** through an ad unit, the customer's browser **310** provides the cookie to the broker **106**, and the customer account module **518** identifies the customer **102** and the account.

[0071] An ad commerce module **520** supports ecommerce transactions performed through the ad units. To this end, the ad commerce module **520** performs functions such as determining the payment information and shipping addresses for the customers **102**, providing a payment system that is used for the purchases, and interacting with the merchant **102** to facilitate delivery of the purchased item to the customer.

[0072] In one embodiment, when a customer **102** clicks on an ad unit or otherwise indicates a desire to purchase the advertised item, the ad commerce module **520** determines whether the customer's web browser has a cookie in its cookie cache **312** that identifies an account in the customer accounts module **518**. If an account exists, the ad commerce module **520** uses the information in the account. Otherwise, the ad commerce module **520** allows the customer **102** to create a new account. In one embodiment, the ad commerce module presents the customer **102** with the customer's selected graphical image in order to prove to the customer that it is interacting with the broker **106** and not a third party. Further, the ad commerce module **520** requires the customer to provide a password or other identifying information before allowing the ecommerce transaction to occur.

[0073] In some embodiments, the ad commerce module **520** allows a customer **102** to purchase an item without creating an account. The customer provides payment information, a shipping address, and/or other information during

the transaction, instead of selecting from among previously-supplied information stored in an account. The ad commerce module **520** uses this information to perform the ecommerce transaction.

[0074] The ad commerce module **520** uses the shipping address specified by the customer **102** in combination with pricing, shipping, and taxation rules supplied by the merchant **104** and/or otherwise available to the broker **106** and determines the total cost of the purchase. The ad commerce module **520** charges the customer **102** for the purchase, and provides the customer with a receipt. Further, an embodiment of the ad commerce module **520** interacts with the merchant **104** to inform the merchant of the purchase and coordinate shipping of the purchased item to the customer **102**. In one embodiment, the ad commerce module **520** provides the customer-indicated shipping address and shipping options to the merchant **104**. The merchant **104** sends the customer **102** an email message or other notification confirming the transaction. In one embodiment, the ad commerce module **520** does not charge the customer **102** until the merchant ships the ordered item.

[0075] In addition, an embodiment of the ad commerce module **520** monitors the transactions that occur using the broker **106**, invoices the customers **102**, and credits the merchants **104**. In one embodiment, the ad commerce module **520** charges the customer's credit card or other method of payment and credits the merchant's account for the amount of the purchase. In another embodiment, the ad commerce module **520** aggregates purchases made by the customers and then periodically credits the merchants for the aggregate values of their sales within the period. In yet another embodiment, the ad commerce module **520** aggregates a customer's purchases within a given period and then charges the customer's account once for aggregate total of the purchases made within the period.

[0076] In one embodiment, the ad commerce module **520** deducts the merchant's bid price for the transaction from the amount credited to the merchant **104**. For example, if the merchant's bid is five dollars, and the item sold for \$20, the ad commerce module **520** credits the merchant \$15 and collects the remaining five dollars. In one embodiment, the ad commerce module **520** shares the collected bids with the publisher **108** that published the web page having the ad unit through which the purchase was conducted.

[0077] In one embodiment, the customer's interactions with the ad unit do not consummate the transaction. Rather, the commerce module **520** creates a virtual shopping cart at the broker **106** or merchant **104** containing the item advertised by the ad unit. The broker **106** or merchant **104** sends the customer **102** an email or other message referencing the shopping cart. The customer **102** uses the reference in the message to interact with the broker **106** and/or merchant **104** and purchase the item in the cart.

[0078] In one embodiment, the ad commerce module **520** includes a web server that uses AJAX and/or another technology to update the information displayed in the ad units in order to conduct the ecommerce transactions with the customers **102**. For example, an ad unit initially displays an advertising message enticing a customer **102** to buy an item. Once the customer clicks on the ad unit, the ad commerce module **520** uses the web server to change the display of the ad unit to allow the customer to log into an existing account at the broker **106** and/or create a new account. Subsequently, the ad commerce module **520** creates displays within the ad

unit that allow the customer **102** to provide payment information and select a shipping method, show the total cost of the transaction, and/or show a confirmation code or other evidence that the transaction has completed.

[0079] FIG. 6 is a high-level block diagram illustrating modules within the publisher **108** according to one embodiment. Those of skill in the art will recognize that other embodiments can have different and/or other modules than the ones described here, and that the functionalities can be distributed among the modules in a different manner.

[0080] In the illustrated embodiment, the publisher **108** includes a content repository module **610** for storing content published by the publisher. The content within the repository **610** includes for example, news stories, blog postings, fan fiction, multimedia content, and/or any other form of content provided by a publisher **108** on the Internet. In one embodiment, the content in the repository **610** are assembled into one or more web pages. These pages are represented in HTML and/or another markup language that describes how to render the web pages in a browser **310**. The pages can be assembled in advance or created dynamically when required. A web server module **612** serves the web pages to customers **102** in response to customer requests.

[0081] In one embodiment, the publisher **108** and broker **106** coordinate on the formats of the web pages served by the publisher. Typically, the publisher **108** agrees to let certain regions on the page contain ad units. For example, the publisher **108** can agree to include ad units on the top left corner and right-hand margin of web pages it serves. In one embodiment, the broker **106** provides the publisher **108** with code to include in the web pages it serves. This code causes the customer's browser **310** to contact the broker **106**, download ad units provided by the broker, and render the ad units on the publisher's web page. In one embodiment, the ad units are displayed within an inline frame (iframe) by the browser **310**. Ad units within the iframe appear to be normal web page elements, but in fact are on a logically distinct web page and can be controlled and updated without affecting other elements on the (seemingly) same web page.

[0082] In one embodiment, the publisher **108** includes an ad criteria module **614** for defining criteria for ads that appear on the publisher's web pages. The publisher **108** uses this module **614** to filter undesirable ads and/or select specific ads from the ad unit catalog module **512**. In some cases, the publisher uses the ad criteria module **614** to specify the appearance and format of the ads.

III. Process/Example

[0083] FIG. 7 is a flow chart illustrating the operation of the broker **106** according to one embodiment of an representative transaction where a customer **102** interacts with an ad unit to purchase an item from a merchant **104**. Those of skill in the art will recognize that other embodiments can perform the steps of FIG. 7 in different orders. Moreover, other embodiments can include different and/or additional steps than the ones described here.

[0084] Initially, the broker **106** receives **710** ecommerce-enabled ad units from the merchants **104**. In one embodiment, the ad units are fully-formed, and contain all of the data that the broker **106** requires in order to support an ecommerce transaction with a customer **102**. In another embodiment, the ad units contain partial data and the broker **106** receives **710** a separate data feed containing additional data for the ad units. The data provided by the merchants **104**

include bid prices specifying amounts the merchants agree to pay the broker **106** upon sales of items through the ad units, upon impressions of the ad units, and/or upon customer clicks on the ad units. In addition, the data include targeting criteria specifying in what circumstances and/or where the broker **106** should run the ad units.

[0085] Contemporaneously, the broker **106** interfaces **712** with the publishers **108** to establish an ad space inventory. This inventory is formed of regions of web pages served to the customers **102** by the publishers **108**. In one embodiment, the publishers **108** allow the broker **106** to serve ad units on the publishers' web pages in exchange for a share of the bid prices specified by the merchants **104**.

[0086] At some point, a publisher **108** serves a web page having space for one or more ad units to a customer **102**. The broker **106** evaluates the characteristics of the served page along with the targeting criteria and bids specified by the ad units received from the merchants **104**, selects **714** one or more ad units, and serves the selected ad units on the web page. Typically, the ad units served by the broker **106** appear as if they are integrated into the publisher's page.

[0087] The customer **102** receives the web page and ad units. If the customer **102** is interested in purchasing an item advertised by an ad unit, the customer clicks on the ad or otherwise expresses an interest in purchasing the item. This click causes the broker **106** to interact **716** with the customer **102** through the ad unit to conduct an ecommerce transaction for the item. In one embodiment, the broker **106** uses AJAX and/or another technology to update the images and text displayed in the ad unit to guide the customer **102** through the transaction, without interfering with the other elements of the web page served by the publisher **108**.

[0088] FIG. 8 illustrates four sample displays the broker **106** creates in the ad unit to guide the customer **102** through the ecommerce transaction according to one embodiment. FIG. 8 shows simplified displays for purposes of example. Other embodiments will use different and/or additional displays. Moreover, the displays within the ad unit can include aspects not shown, such as animated and/or multimedia aspects.

[0089] FIG. 8A illustrates a display **800A** shown on the ad unit as it is initially served by the publisher **108**. A first region **810** shows a message designed to entice the customer **102** to purchase the item being advertised. In this example, the message is "Buy Google Shoes!" A second region **812** shows the reputation score for the merchant **104**. This score is calculated by the broker **106** and inserted into the ad unit received from the merchant **104**. In FIG. 8A, the merchant's reputation score is represented by four stars. A third region **814** of the ad unit shows indicia identifying the broker **106** and serving as a mark of quality and/or trustworthiness. In this example, the indicia is a stylized "G."

[0090] FIG. 8B illustrates a display **800B** shown on the ad unit after the customer **102** clicks on it. The display **800B** includes the indicia **814** of the broker **106**. In the example of FIG. 8B, the broker **106** determined the customer's identity by reading a cookie stored by the customer's browser **312**. The display **800B** shows the graphical image **816** previously selected by the customer **102** and stored in the customer's account. This graphical image **816** demonstrates that the customer **102** is interacting with the broker **106** and not a third party. Further, the broker **106** causes the ad unit to display text **818** identifying the customer **102** by name and inviting the customer to provide a password.

[0091] FIG. 8C illustrates a display 800C shown on the ad unit asking the customer to select a payment method. In this example, the broker 106 has identified three possible payment methods based on data stored in the customer's account, and has caused the ad unit to display radio buttons 802 allowing the customer to choose the method for this transaction. For example, the broker 106 can ask the customer 102 to choose among three different payment cards that the broker has on file. In another embodiment, the broker 106 creates a display allowing the customer to enter a payment card number directly into the ad unit, rather than selecting from a previously-stored card. In addition, the ad unit displays the total amount 823 for the transaction, which in this example is \$81.50. In one embodiment, the ad unit automatically utilizes the customer's default payment method and/or shipping address for the transaction. Therefore, the customer 102 can bypass the payment method selection step and conduct the ecommerce transaction in fewer steps.

[0092] FIG. 8D illustrates a display 800D shown on the ad unit confirming that the transaction is complete. In this example, the ad unit shows a text message 822 stating that the transaction took place, and shows a confirmation code 824 for the transaction. In some embodiments, the broker 106 and/or merchant 104 sends an email or other message to the customer 102 to confirm the transaction instead of displaying the confirmation in the ad unit.

[0093] In one embodiment, the ad unit displays a telephone number and code identifying the specific offer made by the ad unit. This information is displayed instead of, or in addition to, the other information described above. The customer 102 initiates the transaction by calling the telephone number from a mobile phone or other telephone. The telephone number connects to the broker 106. The customer 102 uses the telephone to provide the offer code to the broker 106. In one embodiment, the customer 102 also provides additional information, such as a quantity and/or an authentication code. The broker 106 determines the customer's telephone number, and uses it to identify the customer's account and authenticate the customer 102. The broker 106 determines the offer identified by the offer code and interacts with the customer 102 by telephone to conduct the transaction.

[0094] Returning to FIG. 7, the broker 106 collects 718 the bid from the merchant 104. The broker 106 collects the bid, for example, by keeping a portion of the funds paid by the customer 102, invoicing the merchant 104, and/or through another technique. In one embodiment, the broker 106 shares 720 a portion of the bid with the publisher 108.

[0095] In summary, the ecommerce-enabled ad units allow the customer 102 to purchase items without leaving the web pages on which the ad units are displayed. Moreover, the ad units allow the merchant 104 to create a virtual store formed of ad units advertising items sold by the merchant and delivered to potential customers using merchant-specified targeting criteria. The broker 106 distributing the ad units collects a commission on each sale conducted through an ad unit, and shares the commission with the publishers 108 publishing the pages on which the ad units appear.

[0096] The above description is included to illustrate the operation of the preferred embodiments and is not meant to limit the scope of the invention. The scope of the invention is to be limited only by the following claims. From the above discussion, many variations will be apparent to one skilled

in the relevant art that would yet be encompassed by the spirit and scope of the invention.

1. A method of conducting electronic commerce on a network, comprising:

accessing a collection of electronic commerce-enabled ad units advertising items offered by merchants and having associated bids the merchants pay responsive to purchases of the advertised items through the ad units; publishing ad units selected from the collection of ad units to customers via the network;

interacting with a customer through a published ad unit to enable the customer to purchase an item advertised by the ad unit; and

collecting a bid associated with the published ad unit in response to the customer's purchase of the item.

2. The method of claim 1, further comprising:

receiving an ad unit from a merchant via the network; and storing the received ad unit in the collection of ad units.

3. The method of claim 2, wherein receiving the ad unit comprises:

determining an identification of the ad unit;

receiving separate data for the ad unit, the separate data referencing the ad unit using the identification; and associating the separate data with the ad unit.

4. The method of claim 1, wherein an ad unit comprises: advertising data for enticing the customer to interact with the ad unit; and

transaction data for enabling the customer to purchase the item advertised by the ad unit through interactions with the ad unit.

5. The method of claim 1, further comprising:

interfacing with a plurality of publishers on the network to define an inventory of ad spaces on web pages published by the publishers in which the ad units can be displayed.

6. The method of claim 1, wherein the ad units have associated targeting criteria and are published on web pages, further comprising:

selecting ad units to publish responsive to the ad units' associated targeting criteria, the ad units' associated bid prices, and characteristics of the web pages.

7. The method of claim 6, wherein an ad unit has associated contextual targeting criteria describing a context in which the ad unit should appear.

8. The method of claim 7, wherein the contextual targeting criteria comprise keywords related to an item being advertised by the ad unit.

9. The method of claim 6, wherein an ad unit has associated site targeting criteria describing characteristics of web pages on which the ad unit should be published.

10. The method of claim 1, wherein interacting with a customer through a published ad unit comprises:

dynamically updating the ad unit responsive to customer interactions with the ad unit.

11. The method of claim 10, wherein dynamically updating the ad unit comprises:

updating components of the ad unit using Asynchronous JavaScript and XML (AJAX).

12. The method of claim 1, wherein interacting with a customer through a published ad unit comprises:

detecting if the customer indicates an interest in purchasing the item advertised by the ad unit;

determining an identity of the customer; and

identifying payment information for the customer.

13. The method of claim **1**, wherein the ad units are published on web pages of publishers, and further comprising:

sharing the collected bid with a publisher of a web page on which the ad unit was published.

14. A system for conducting electronic commerce on a network, comprising:

an ad unit serving module for selectively serving electronic commerce-enabled ad units on web pages published by publishers on the network, the ad units advertising items offered by merchants and having associated bids the merchants pay responsive to purchases of the advertised items through the ad units; and a commerce module for interacting with a customer through a published ad unit to enable the customer to purchase an item advertised by the ad unit and for collecting a bid associated with the ad unit in response to the customer's purchase of the item.

15. The system of claim **14**, further comprising:

an ad unit catalog module for storing a collection of ad units advertising items offered by the merchants, wherein the ad unit serving module selectively serves ad units stored in the ad unit catalog module.

16. The system of claim **15**, further comprising:

a merchant communication module for receiving an ad unit from a merchant via the network and storing the received ad unit in the ad unit catalog module.

17. The system of claim **15**, wherein the ad unit has an identification and the merchant communication module further receives separate data referencing the ad unit using the identification and associates the separate data with the identified ad unit.

18. The system of claim **14**, further comprising:

a merchant reputation module for calculating reputation scores indicating the relative qualities of the merchants.

19. The system of claim **18**, wherein the merchant reputation module further displays an indication of a merchant's relative quality on an ad unit served by the ad unit serving module.

20. The system of claim **14**, further comprising:

a customer accounts module for storing accounts associated with customers that purchase items advertised by the ad units.

21. The system of claim **20**, wherein an account associated with a customer stores a shipping address and/or payment information for the customer.

22. The system of claim **20**, wherein an account associated with a customer identifies a graphical image, and wherein the ad commerce module shows the image to the customer within an ad unit served by the ad unit serving module.

23. The system of claim **14**, wherein the ad units have associated targeting criteria and the ad unit serving module further selects ad units to publish responsive to the ad units' associated targeting criteria, the ad units' associated bids, and characteristics of the web pages published by the publishers.

24. The system of claim **14**, wherein the commerce module dynamically updates the published ad unit responsive to customer interactions with the ad unit.

25. The system of claim **24**, wherein the commerce module uses Asynchronous JavaScript and XML (AJAX) to dynamically update components of the published ad unit.

26. The system of claim **14**, wherein the commerce module shares the collected bid with a publisher of a web page on which the ad unit was published.

27. A computer program product having a computer-readable medium having computer program code tangibly embodied therein for conducting electronic commerce on a network, the computer program code comprising:

an ad unit serving module for selectively serving electronic commerce-enabled ad units on web pages published by publishers on the network, the ad units advertising items offered by merchants and having associated bids the merchants pay responsive to purchases of the advertised items through the ad units; and a commerce module for interacting with a customer through a published ad unit to enable the customer to purchase an item advertised by the ad unit and for collecting a bid associated with the ad unit in response to the customer's purchase of the item.

28. The computer program product of claim **27**, further comprising:

an ad unit catalog module for storing a collection of ad units advertising items offered by the merchants, wherein the ad unit serving module selectively serves ad units stored in the ad unit catalog module.

29. The computer program product of claim **28**, further comprising:

a merchant communication module for receiving an ad unit from a merchant via the network and storing the received ad unit in the ad unit catalog module.

30. The computer program product of claim **28**, wherein the ad unit has an identification and the merchant communication module further receives separate data referencing the ad unit using the identification and associates the separate data with the identified ad unit.

31. The computer program product of claim **27**, further comprising:

a merchant reputation module for calculating reputation scores indicating the relative qualities of the merchants.

32. The computer program product of claim **31**, wherein the merchant reputation module further displays an indication of a merchant's relative quality on an ad unit served by the ad unit serving module.

33. The computer program product of claim **27**, further comprising:

a customer accounts module for storing accounts associated with customers that purchase items advertised by the ad units.

34. The computer program product of claim **33**, wherein an account associated with a customer stores a shipping address and/or payment information for the customer.

35. The computer program product of claim **33**, wherein an account associated with a customer identifies a graphical image, and wherein the ad commerce module shows the image to the customer within an ad unit served by the ad unit serving module.

36. The computer program product of claim **27**, wherein the ad units have associated targeting criteria and the ad unit serving module further selects ad units to publish responsive to the ad units' associated targeting criteria, the ad units' associated bids, and characteristics of the web pages published by the publishers.

37. The computer program product of claim **27**, wherein the commerce module dynamically updates the published ad unit responsive to customer interactions with the ad unit.

38. The computer program product of claim **37**, wherein the commerce module uses Asynchronous JavaScript and XML (AJAX) to dynamically update components of the published ad unit.

39. The computer program product of claim **27**, wherein the commerce module shares the collected bid with a publisher of a web page on which the ad unit was published.

40. A method of enabling electronic commerce on a network, comprising:

providing an electronic payment system enabling customers to purchase items via the network;

defining an ad unit advertising an item offered by a merchant, the ad unit including functionality for enabling a customer to purchase the item using the electronic payment system and having an associated bid price the merchant pays upon a sale of the advertised item;

publishing the ad unit on a plurality of web pages from a plurality of publishers; and

collecting the bid price in response to a customer utilizing the functionality in the ad unit to purchase the item from the merchant using the electronic payment system.

41. The method of claim **40**, further comprising: interacting with a customer receiving the ad unit on a web page published by a publisher to enable the customer to purchase the item.

42. The method of claim **41**, further comprising: sharing the collected bid price with the publisher of the web page.

43. The method of claim **40**, further comprising: dynamically updating components of the ad unit responsive to interactions with the customer.

44. The method of claim **40**, wherein the ad unit further includes functionality for enabling the customer to purchase the item without leaving a web page on which the ad unit was published.

45. The method of claim **40**, wherein the merchant has an associated reputation score and wherein publishing the ad unit comprises:

selecting the ad unit responsive to the merchant's reputation score.

46. The method of claim **40**, wherein the ad unit displays an offer code identifying the item, and further comprising: interacting with the customer by telephone and receiving the offer code;

determining the item identified by the offer code; determining a telephone number utilized by the customer and utilizing the telephone number to identify the customer; and

conducting an ecommerce transaction enabling the customer to purchase the item.

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