SYSTEM AND METHOD FOR INFLUENCING A POSITION ON A SEARCH RESULT LIST GENERATED BY A COMPUTER NETWORK SEARCH ENGINE

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BACKGROUND OF THE INVENTION

The transfer of information over computer networks has become an increasingly important means by which institutions, corporations, and individuals do business. Computer networks have grown over the years from independent and isolated entities established to serve the needs of a single group into vast internets which interconnect disparate physical networks and allow them to function as a coordinated system. Currently, the largest computer network in existence is the Internet. The Internet is a worldwide interconnection of computer networks that communicate using a common protocol. Millions of computers, from low end personal computers to high end super computers, are connected to the Internet.

The Internet has emerged as a large community of electronically connected users located around the world who readily and regularly exchange significant amounts of information. The Internet continues to serve its original purposes of providing for access to and exchange of information among government agencies, laboratories, and universities for research and education. In addition, the Internet has evolved to serve a variety of interests and forums that extend beyond its original goals. In particular, the Internet is rapidly transforming into a global electronic marketplace of goods and services as well as of ideas and information.

This transformation of the Internet into a global marketplace was driven in large part by the introduction of an information system known as the World Wide Web ("the web"). The web is a unique distributed database designed to give wide access to a large universe of documents. The database records of the web are in the form of documents known as "pages". These pages reside on web servers and are accessible via the Internet. The web is therefore a vast database of information dispersed across countless individual computer systems that is constantly changing and has no recognizable organization or morphology. Computers connected to the Internet may access the web pages via a program known as a browser, which has a powerful, simple-to-learn graphical user interface. One powerful technique supported by the web browser is known as hyperlinking, which permits web page authors to create links to other web pages which users can then retrieve by using simple point-and-click commands on the web browser.

The pages may be constructed in any one of a variety of formatting conventions, such as Hyper Text Markup Language (HTML), and may include multimedia information content such as graphics, audio, and moving pictures. Any person with a computer and a connection to the Internet may access any publicly accessible page posted on the web. Thus, a presence on the World Wide Web has the capability to introduce a worldwide base of consumers to businesses, individuals, and institutions seeking to advertise their products and services to potential customers. Furthermore, the ever increasing sophistication in the design of web pages, made possible by the exponential increase in data transmission rates and computer processing speeds, makes the web an increasingly attractive medium for advertising and other business purposes, as well as for the free flow of information.

The availability of powerful new tools that facilitate the development and distribution of Internet content has led to a proliferation of information, products, and services offered on the Internet and dramatic growth in the number of consumers using the Internet. International Data Corporation, commonly referred to as IDC, estimates that the number of Internet users will grow from approximately 97 million worldwide in 1998 to approximately 320

million worldwide by the end of 2002. In addition, commerce conducted over the Internet has grown and is expected to grow dramatically. IDC estimates that the percentage of Internet users buying goods and services on the Internet will increase from approximately 28% at the end of 1998 to approximately 40% in 2002, and that over the same period of time, the total value of goods and services purchased over the Internet will increase from approximately $32.4 billion to approximately $425.7 billion.

The Internet has emerged as an attractive new medium for advertisers of information, products and services to reach consumers. However, the World Wide Web is composed of a seemingly limitless number of web pages dispersed across millions of different computer systems all over the world in no discernible organization. Mechanisms, such as directories and search engines, have been developed to index and search the information available on the web and thereby help Internet users locate information of interest. These search services enable consumers to search the Internet for a listing of web sites based on a specific topic, product, or service of interest.

Search services are, after e-mail, the most frequently used tool on the Internet. As a result, web sites providing search services have offered advertisers significant reach into the Internet audience and have given advertisers the opportunity to target consumer interests based on keyword or topical search requests.

In a web-based search on an Internet search engine, a user enters a search term comprising one or more keywords, which the search engine then uses to generate, in real time, a listing of web pages that the user may access via a hyperlink. The search engines and web site directories of the prior art, however, rely upon processes for assigning results to keywords that often generate irrelevant search results. The automated search technology that drives many search engines in the prior art rely in large part on complex, mathematics-based database search algorithms that select and rank web pages based on multiple criteria such as keyword density and keyword location. The search results generated by such mechanisms often rely on blind mathematical formulas and may be random and even irrelevant. In

addition, search engines that use automated search technology to catalog search results generally rely on invisible web site descriptions, or "meta tags", that are authored by web site promoters. Web site owners may freely tag their sites as they choose. Consequently, some web site promoters or promoters insert popular search terms into their web site meta tags which are not relevant because by doing so they may attract additional consumer attention at little to no marginal cost. Finally, many web sites have similar meta tags, and the search engines of the prior art are simply not equipped to prioritize results in accordance with consumers' preferences.

Search engines and web site directories may also rely on the manual efforts of limited editorial staffs to review web page information. Since comprehensive manual review and indexing of an unpredictable, randomly updated database such as the web is an impossible task, search engine results are often incomplete or out-of-date. Moreover, as the volume and diversity of Internet content has grown, on many popular web search sites, consumers must frequently click-through multiple branches of a hierarchical directory to locate web sites responsive to their search request, a process that is slow and unwieldy from the consumer's standpoint. Thus, the prior art search engines are ineffective for web page owners seeking to target their web exposure and distribute information to the attention of interested users on a current and comprehensive basis.

Furthermore, current paradigms for generating web site traffic, such as banner advertising, follow traditional advertising paradigms and fail to utilize the unique attributes of the Internet. In the banner advertising model, web site promoters seeking to promote and increase their web exposure often purchase space on the pages of popular commercial web sites. The web site promoters usually fill this space with a colorful graphic, known as a banner, advertising their own web site. The banner may act a hyperlink a visitor may click on to access the site. Like traditional advertising, banner advertising on the Internet is typically priced on an impression basis with advertisers paying for exposures to potential consumers. Banners may be displayed at every page access, or, on search engines, may be targeted to search terms.

Nonetheless, impression-based advertising inefficiently exploits the Internet's direct marketing potential, as the click-through rate, the rate of consumer visits a banner generates to the destination site, may be quite low. Web site promoters are therefore paying for exposure to many consumers who are not interested in the product or service being promoted, as most visitors to a web site seek specific information and may not be interested in the information announced in the banner. Likewise, the banner often fails to reach interested individuals, since the banner is not generally searchable by search engines and the interested persons may not know where on the web to view the banner.

Thus, the traditional paradigms of advertising and search engine algorithms fail to effectively deliver relevant information via the World Wide Web to interested parties in a cost-effective manner. Internet advertising can offer a level of targetability, interactivity, and measurability not generally available in other media. With the proper tools, Internet advertisers have the ability to target their messages to specific groups of consumers and receive prompt feedback as to the effectiveness of their advertising campaigns.

Ideally, web site promoters should be able to control their placement in search result listings so that their listings are prominent in searches that are relevant to the content of their web site. The search engine functionality of the Internet needs to be focused in a new direction to facilitate an on-line marketplace which offers consumers quick, easy and relevant search results while providing Internet advertisers and promoters with a cost-effective way to target consumers. A consumer utilizing a search engine that facilitates this on-line marketplace will find companies or businesses that offer the products, services, or information that the consumer is seeking. In this on-line marketplace, companies selling products, services, or information bid in an open auction environment for positions on a search result list generated by an Internet search engine. Since advertisers must pay for each click-through referral generated through the search result lists generated by the search engine, advertisers have an incentive to select and bid on those search keywords that are most relevant to their web site offerings. The higher an

advertiser's position on a search result list, the higher likelihood of a "referral"; that is, the higher the likelihood that a consumer will be referred to the advertiser's web site through the search result list. The openness of this advertising marketplace is further facilitated by publicly displaying, to consumers and other advertisers, the price bid by an advertiser on a particular search result listing.

It is therefore an object of the present invention to provide a system and method for enabling promoters to influence a position on a search result listing generated by an Internet search engine for a specified set of search terms.

A further object of the present invention is to provide a system and method for enabling promoters to specify key search terms to the search engine so as to target their search result list placement to the search queries most relevant to their business.

A still further object of the present invention is to provide a system and method for enabling promoters to examine their current search term and placement couplings online and to make substantially instantaneous changes to their selected search terms, placements, and web site titles and descriptions.

It is also an object of the present invention to provide promoters with a search engine that permits such promoters to influence a higher placement in a search result list via a continuous, competitive online bidding process.

It is another object of the present invention to provide a cost-effective method of Internet advertising where the web site promoter is charged in direct proportion to the number of actual visits generated by the search engine.

It is still another object of the present invention to create a new system of advertising where advertisers target the most interested consumers by participating in a free market which attaches a monetary cost for an advertiser's listing in a search result list generated using advertiser-selected search terms.

It is yet another object of the present invention to create an open market for Internet advertising that is fair to consumers and advertisers, where advertiser-placed listings in a search result list are clearly labeled as paid advertising.

It is also an object of the present invention to allow a web site promoter to control a title or description associated with the promoters listing in a search result list generated by the search engine.

BRIEF SUMMARY OF THE INVENTION

The present invention seeks to address the aforementioned problems by providing a system and method for enabling a web site promoter using a computer network to influence a position within a search result list generated by an Internet search engine. More particularly, the present invention relates to a system and method to enable a web site promoter to define a search listing for a search result list, select a search term relevant to the promoter's web site, and influence a search result list position for the search listing on an Internet search engine. When an Internet user enters the search terms in a search engine query, the search engine will generate a search result list with the web site promoter's listing in a position influenced by one or more parameters defined by the promoter.

In a preferred embodiment of the present invention, a web site promoter selects a search term and influences a position within the search result list generated by that search term by participating in an online competitive bidding process. This online competitive bidding process is known as a "pay-for-performance" process and may be employed in conjunction with an Internet search engine. "Pay-for-performance" applies market principles to advertising on the Internet. Conventional Internet search engines do not provide a way for web site promoters to easily predict the position of their web site in search results or guarantee their appearance in search results containing their web site description. A tool enabling advertisers to target web search terms relevant to their business and to pinpoint the placement of their web site description within the search results

provides a powerful advantage to businesses and others seeking to increase their web exposure. Furthermore, a competitive bidding process and pricing based on number of web site referrals generated helps ensure that the pricing structure reflects the market and is accessible to advertisers of all budget sizes.

To participate in the process, an advertiser, such as a web site promoter, may access the advertiser's user account through a secure web site. The advertiser may use the account to place bids on search terms that are relevant to the advertiser's web site. Each bid is specific to a search term-web site combination and corresponds to a money amount that the advertiser will pay to the owner of the search engine each time a searcher clicks on the advertiser's hyperlinked listing in the search result list generated by the search engine. The searcher's click will result in an access request being sent to the advertiser's web site, which will respond by transmitting the advertiser's web page to the searcher's browser. The charge to the advertiser for the placement is therefore directly proportional to the benefit received, since the charge is based on the number of referrals to the advertiser's web site that were generated by the search engine.

The higher the bid, the more advantageous the placement in the search result list that is generated when the bidded search term is entered by a searcher using the search engine. The search result list is arranged in order of decreasing bid amount, with the search listing corresponding to the highest bids displayed first to the searcher. Preferably, each search listing corresponding to a bid is identified on the display as a paid listing. Most preferably, the bid amount is included on the identification. In addition, the search result list of the present invention is preferably combined with "non-paid" web site descriptions generated by a conventional Internet search engine, preferably including listings generated according to mathematics-based database search algorithms as discussed above. The combination of paid and unpaid listings helps ensure that the searcher will receive the most complete and relevant search results. Most preferably, the non-paid listings

are considered to have a bid amount of zero and are therefore underneath the paid results.

According to a first embodiment of the present invention, there is provided a system and method for enabling the web site promoters to influence a position for a search listing within a search result list generated by an Internet search engine. The web site promoter first selects a search term comprising one or more keywords relevant to the content of the web site to be listed. The web site promoter influences the rank position for the search listing through an ongoing online competitive bidding process with other web site promoters. The bidding process occurs when an advertiser enters a new bid amount for an existing search listing or enters a bid amount for a new search listing. Preferably, the promoter's bid is then processed in real time. This bid amount is compared with all other bid amounts from other promoters for the same search term, and generates new rank values for all search listings having that search term. The rank value determines the position where the promoter's web site description will appear on the search results list page that is generated when the search term is entered into the query box on the search engine by a searcher. A higher bid will result in a higher rank value and a more advantageous placement, which is preferably near the beginning of the search results list page. Preferably, the quantity used in the competitive bidding process is a money amount that the web site promoter will pay to an owner of the Internet search engine each time the advertiser's web site is referred by the search engine. Most preferably, this money amount will be deducted from an account balance that is retained in the promoter's account for each time the promoter's web site is referred by the search engine.

One embodiment of the system and method of the present invention provides a database having accounts for the web site promoters. Each account includes contact and billing information for a web site promoter. In addition, each account includes at least one search listing, each search listing having five components: a description of the web site to be listed, the Uniform Resource Locator (URL) of the web site, a search term comprising one or

more keywords, a bid amount, and a title for the search listing. Each account may also include the promoter's payment history and a history of search listings entered by the user. The promoter logs in to his or her account via an authentication process running on a secure server. Once logged in, the promoter may add, delete, or modify a search listing. The functions of adding or deleting a search listing, or modifying the bid amount of a search listing is to initiate the competitive bidding process described above. All search listing changes and modifications are processed substantially in real time to support the online competitive bidding process.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

FIG. 1 is a block diagram illustrating the relationship between a large network and one embodiment of the system and method for generating a pay-for-performance search result of the present invention;

FIG. 2 is a chart of menus, display screens, and input screens used in one embodiment of the present invention;

FIG. 3 is a flow chart illustrating the advertiser user login process performed in one embodiment of the present invention;

FIG. 4 is a flow chart illustrating the administrative user login process performed in one embodiment of the present invention;

FIG. 5 is a diagram of data for an account record for use with one embodiment of the present invention;

FIG. 6 is a flow chart illustrating a method of adding money to an account record used in one embodiment of the present invention;

FIG. 7 illustrates an example of a search result list generated by one embodiment of the present invention;

FIG. 8 is a flow chart illustrating a change bids process used in one embodiment of the present invention; and

FIG. 9 illustrates an example of a screen display used in the change bids process of FIG. 8.

DETAILED DESCRIPTION OF THE INVENTION

Methods and systems for generating a pay-for-performance search result determined by a site promoter, such as an advertiser, over a client/server based computer network system are disclosed. The following description is presented to enable any person skilled in the art to make and use the invention. For purposes of explanation, specific nomenclature is set forth to provide a thorough understanding of the present invention. Descriptions of specific applications are provided only as examples. Various modifications to the preferred embodiments will be readily apparent to those skilled in the art, and the general principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the invention. Thus, the present invention is not intended to be limited to the embodiments shown, but is to be accorded the widest scope consistent with the principles and features disclosed herein.

Referring now to the drawings, FIG. 1 is an example of a distributed system 10 configured as client/server architecture used in a preferred embodiment of the present invention. A "client" is a member of a class or group that uses the services of another class or group to which it is not related. In the context of a computer network, such as the Internet, a client is a process (i.e. roughly a program or task) that requests a service which is provided by another process, known as a server program. The client process uses the requested service without having to know any working details about the other server program or the server itself. In networked systems, a client process usually runs on a computer that accesses shared network resources provided by another computer running a corresponding server process. However, it should also be noted that it is possible for the client process and the server process to run on the same computer.

A "server" is typically a remote computer system that is accessible over a communications medium such as the Internet. The client process may be active in a second computer system, and communicate with the server process over a communications medium that allows multiple clients to take

advantage of the information-gathering capabilities of the server. Thus, the server essentially acts as an information provider for a computer network.

The block diagram of FIG. 1 therefore shows a distributed system 10 comprising a plurality of client computers 12, a plurality of advertiser web servers 14, an account management server 22, and a search engine web server 24, all of which are connected to a network 20. The network 20 will be hereinafter generally referred to as the Internet. Although the system and method of the present invention is specifically useful for the Internet, it should be understood that the client computers 12, advertiser web servers 14, account management server 22, and search engine web server 24 may be connected together through one of a number of different types of networks. Such networks may include local area networks (LANs), other wide area networks (WANs), and regional networks accessed over telephone lines, such as commercial information services. The client and server processes may even comprise different programs executing simultaneously on a single computer.

The client computers 12 can be conventional personal computers (PCs), workstations, or computer systems of any other size. Each client 12 typically includes one or more processors, memories, input/output devices, and a network interface, such as a conventional modem. The advertiser web servers 14, account management server 22, and the search engine web server 24 can be similarly configured. However, advertiser web servers 14, account management server 22, and search engine web server 24 may each include many computers connected by a separate private network. In fact, the network 20 may include hundreds of thousands of individual networks of computers.

The client computers 12 can execute web browser programs 16, such as the NAVIGATOR, EXPLORER, or MOSAIC browser programs, to locate the web pages or records 30 stored on advertiser server 14. The browser programs 16 allow the users to enter addresses of specific web pages 30 to be retrieved. These addresses are referred to as Uniform Resource Locators, or URLs. In addition, once a page has been retrieved, the browser programs

16 can provide access to other pages or records when the user "clicks" on hyperlinks to other web pages. Such hyperlinks are located within the web pages 30 and provide an automated way for the user to enter the URL of another page and to retrieve that page. The pages can be data records including as content plain textual information, or more complex digitally encoded multimedia content, such as software programs, graphics, audio signals, videos, and so forth.

In a preferred embodiment of the present invention, shown in FIG. 1, client computers 12 communicate through the network 20 with various network information providers, including account management server 22, search engine server 24, and advertiser servers 14 using the functionality provided by a HyperText Transfer Protocol (HTTP), although other communications protocols, such as FTP, SNMP, TELNET, and a number of other protocols known in the art, may be used. Preferably, search engine server 24, account management server 22, and advertiser servers 14 are located on the World Wide Web.

As discussed above, at least two types of server are contemplated in a preferred embodiment of the present invention. The first server contemplated is an account management server 22 comprising a computer storage medium 32 and a processing system 34. A database 38 is stored on the storage medium 32 of the account management server 22. The database 38 contains advertiser account information. It will be appreciated from the description below that the system and method of the present invention may be implemented in software that is stored as executable instructions on a computer storage medium, such as memories or mass storage devices, on the account management server 22. Conventional browser programs 16, running on client computers 12, may be used to access advertiser account information stored on account management server 22. Preferably, access to the account management server 22 is accomplished through a firewall, not shown, which protects the account management and search result placement programs and the account information from external tampering. Additional

security may be provided via enhancements to the standard communications protocols such as Secure HTTP or the Secure Sockets Layer.

The second server type contemplated is a search engine web server 24. A search engine program permits network users, upon navigating to the search engine web server URL or sites on other web servers capable of submitting queries to the search engine web server 24 through their browser program 16, to type keyword queries to identify pages of interest among the millions of pages available on the World Wide Web. In a preferred embodiment of the present invention, the search engine web server 24 generates a search result list that includes, at least in part, relevant entries obtained from and formatted by the results of the bidding process conducted by the account management server 22. The search engine web server 24 generates a list of hypertext links to documents that contain information relevant to search terms entered by the user at the client computer 12. The search engine web server transmits this list, in the form of a web page, to the network user, where it is displayed on the browser 16 running on the client computer 12. A presently preferred embodiment of the search engine web server may be found by navigating to the web page at URL http://www.goto.com/. In addition, the search result list web page, an example of which is presented in FIG. 7, will be discussed below in further detail.

Search engine web server 24 is connected to the Internet 20. In a preferred embodiment of the present invention, search engine web server 24 includes a search database 40 comprised of search listing records used to generate search results in response to user queries. In addition, search engine web server 24 may also be connected to the account management server 22. Account management server 22 may also be connected to the Internet. The search engine web server 24 and the account management server 22 of the present invention address the different information needs of the users located at client computers 12.

For example, one class of users located at client computers 12 may be network information providers such as advertising web site promoters or owners having advertiser web pages 30 located on advertiser web servers 14.

These advertising web site promoters, or advertisers, may wish to access account information residing in storage 32 on account management server 22. An advertising web site promoter may, through the account residing on the account management server 22, participate in a competitive bidding process with other advertisers. An advertiser may bid on any number of search terms relevant to the content of the advertiser's web site. In one embodiment of the present invention, the relevance of a bidded search term to an advertiser's web site is determined through a manual editorial process prior to insertion of the search listing containing the search term and advertiser web site URL into the database 40. In an alternate embodiment of the present invention, the relevance of a bidded search term in a search listing to the corresponding web site may be evaluated using a computer program executing at processor 34 of account management server 22, where the computer program will evaluate the search term and corresponding web site according to a set of predefined editorial rules.

The higher bids receive more advantageous placement on the search result list page generated by the search engine 24 when a search using the search term bid on by the advertiser is executed. In a preferred embodiment of the present invention, the amount bid by an advertiser comprises a money amount that is deducted from the account of the advertiser for each time the advertiser's web site is accessed via a hyperlink on the search result list page. A searcher "clicks" on the hyperlink with a computer input device to initiate a retrieval request to retrieve the information associated with the advertiser's hyperlink. Preferably, each access or "click" on a search result list hyperlink will be redirected to the search engine web server 24 to associate the "click" with the account identifier for an advertiser. This redirect action, which is not apparent to the searcher, will access account identification information coded into the search result page before accessing the advertiser's URL using the search result list hyperlink clicked on by the searcher. The account identification information is recorded in the advertiser's account along with information from the retrieval request as a retrieval request event. Since the information obtained through this mechanism conclusively matches an

account identifier with a URL in a manner not possible using conventional server system logs known in the art, accurate account debit records will be maintained. Most preferably, the advertiser's web site description and hyperlink on the search result list page is accompanied by an indication that the advertiser's listing is a paid listing. Most preferably, each paid listing displays a "cost to advertiser," which is an amount corresponding to a "price-per-click" paid by the advertiser for each referral to the advertiser's site through the search result list.

A second class of users at client computers 12 may comprise searchers seeking specific information on the web. The searchers may access, through their browsers 16, a search engine web page 36 residing on web server 24. The search engine web page 36 includes a query box in which a searcher may type a search term comprising one or more keywords. Alternatively, the searcher may query the search engine web server 24 through a query box hyperlinked to the search engine web server 24 and located on a web page stored at a remote web server. When the searcher has finished entering the search term, the searcher may transmit the query to the search engine web server 24 by clicking on a provided hyperlink. The search engine web server 24 will then generate a search result list page and transmit this page to the searcher at the client computer 12.

The searcher may click on the hypertext links associated with each listing on the search results page to access the corresponding web pages. The hypertext links may access web pages anywhere on the Internet, and include paid listings to advertiser web pages 18 located on advertiser web servers 14. In a preferred embodiment of the present invention, the search result list also includes non-paid listings that are not placed as a result of advertiser bids and are generated by a conventional World Wide Web search engine, such as the INKTOMI, LYCOS, or YAHOO! search engines. The non-paid hypertext links may also include links manually indexed into the database 40 by an editorial team. Most preferably, the non-paid listings follow the paid advertiser listings on the search results page.

FIG. 2 is a diagram showing menus, display screens, and input screens presented to an advertiser accessing the account management server 22 through a conventional browser program 16. The advertiser, upon entering the URL of the account management server 22 into the browser program 16 of FIG. 1, invokes a login application, discussed below as shown at screen 110 of FIG. 2, running on the processing system 34 of the server 22. Once the advertiser is logged-in, the processing system 34 provides a menu 120 that has a number of options and further services for advertisers. These items, which will be discussed in more detail below, cause routines to be invoked to either implement the advertiser's request or request further information prior to implementing the advertiser's request. In one embodiment of the present invention, the advertiser may access several options through menu 120, including requesting customer service 130, viewing advertiser policies 140, performing account administration tasks 150, adding money to the advertiser's account 160, managing the account's advertising presence on the search engine 170, and viewing activity reports 180. Context-specific help 190 may also generally be available at menu 120 and all of the above-mentioned options.

The login procedure of the preferred embodiment of the present invention is shown in FIGS. 3 and 4 for two types of user. FIG. 3 shows the login procedures 270 for an advertiser. FIG. 4 shows the login procedures 290 for an administrator managing and maintaining the system and method of the present invention. As discussed above, the advertiser or administrator at a client computer 12 must first use a browser program at steps 271 or 291 to access the account management server. After the advertiser navigates to the URL of the login page to start the login process at step 272 or 292, the processing system 34 of the account management server 22 invokes a login application at steps 274 or 294. According to this application, the processor provides an input screen 110 (FIG. 2) that requests the advertiser's or administrator's user name and password. These items of information are provided at steps 276 or 296 to a security application known in the art for the

purpose of authentication, based on the account information stored in a database stored in storage 32 of account management server 22.

According to FIG. 3, after the user has been authenticated as an advertiser, the advertiser is provided with the menu screen 120 of FIG. 2 and limited read/write access privileges only to the corresponding advertiser account, as shown in step 278. The advertiser login event 278 may also be recorded in step 280 in an audit trail data structure as part of the advertiser's account record in the database. The audit trail is preferably implemented as a series of entries in database 38, where each entry corresponds to an event wherein the advertiser's account record is accessed. Preferably, the audit trail information for an account record may be viewed by the account owner and other appropriate administrators.

However, if the user is authenticated as an administrator in step 295 of FIG. 4, the administrator is provided with specified administrative access privileges to all advertiser accounts as shown in step 296. The administrator login event 296 is recorded in step 297 in the audit trail data structure portion of the administrator's account record. This audit trail is preferably implemented as a series of entries in database 38, where each entry corresponds to an event wherein the administrator's account record is accessed. Most preferably, the administrator's audit trail information may be viewed by the account owner and other appropriate administrators.

Furthermore, instead of the general advertiser main menu shown to the authenticated advertiser users in step 282, the authenticated administrator is provided in step 298 with access to search the database 38 of advertiser accounts. Preferably, a database search interface is provided to the administrator that enables the administrator to select an advertiser account to monitor. For example, the interface may include query boxes in which the administrator may enter an account number or username or contact name corresponding to an account the administrator wishes to access. When the administrator selects an advertiser account to monitor in step 299, the administrator is then brought to the main advertiser page 120 of FIG. 2, which is also seen by the advertisers.

Access to the account information 32 located on the account management server 22 is restricted to users having an account record on the system, as only those users are provided with a valid login name and password. Password and login name information is stored along with the user's other account information in the database 38 of the account management server 22, as shown in FIG. 1. Account information, including a login user name and password, is entered in the database 38 of FIG. 1 via a separate online registration process that is outside the scope of the present invention.

FIG. 5 is a diagram showing the types of information contained in each advertiser account record 300 in the database. First, an advertiser account record 300 contains a username 302 and a password 304, used for online authentication as described above. The account record also contains contact information 310 (e.g., contact name, company name, street address, phone, e-mail address).

Contact information 310 is preferably utilized to direct communications to the advertiser when the advertiser has requested notification of key advertiser events under the notification option, discussed below. The account record 300 also contains billing information 320 (e.g., current balance, credit card information). The billing information 320 contains data accessed when the advertiser selects the option to add money to the advertiser's account. In addition, certain billing information, such as the current balance, may trigger events requiring notification under the notification option. The audit trail section 325 of an account record 300 contains a list of all events wherein the account record 300 is accessed. Each time an account record 300 is accessed or modified, by an administrator or advertiser a short entry describing the account access and/or modification event will be appended to the audit trail section 330 of the administrator or advertiser account that initiated the event. The audit trail information may then be used to help generate a history of transactions made by the account owner under the account.

The advertising information section 330 contains information needed to conduct the online bidding process of the present invention, wherein a position is determined for a web site description and hyperlink within a search result list generated by a search engine. The advertising data 330 for each user account 300 may be organized as zero or more subaccounts 340. Each subaccount 340 comprises at least one search listing 344. Each search listing corresponds to a bid on a search term. An advertiser may utilize subaccounts to organize multiple bids on multiple search terms, or to organize bids for multiple web sites. Subaccounts are also particularly useful for advertisers seeking to track the performance of targeted market segments. The subaccount superstructure is introduced for the benefit of the advertisers seeking to organize their advertising efforts, and does not affect the method of operation of the present invention. Alternatively, the advertising information section need not include the added organizational layer of subaccounts, but may simply comprise one or more search listings.

The search listing 344 corresponds to a search term/bid pairing and contains key information to conduct the online competitive bidding process. Preferably, each search listing comprises the following information: search term 352, web site description 354, URL 356, bid amount 358, and a title 360. The search term 352 comprises one or more keywords which may be common words in English (or any other language). Each keyword in turn comprises a character string. The search term is the object of the competitive online bidding process. The advertiser selects a search term to bid on that is relevant to the content of the advertiser's web site. Ideally, the advertiser may select a search term that is targeted to terms likely to be entered by searchers seeking the information on the advertiser's web site, although less common search terms may also be selected to ensure comprehensive coverage of relevant search terms for bidding.

The web site description 354 is a short textual description (preferably less than 190 characters) of the content of the advertiser's web site and may be displayed as part of the advertiser's entry in a search result list. The search listing 344 may also contain a title 360 of the web site that may be

displayed as the hyperlinked heading to the advertiser's entry in a search result list. The URL 356 contains the Uniform Resource Locator address of the advertiser's web site. When the user clicks on the hyperlink provided in the advertiser's search result list entry, the URL is provided to the browser program. The browser program, in turn, accesses the advertiser's web site through the redirection mechanism discussed above. The URL may also be displayed as part of the advertiser's entry in a search result list.

The bid amount 358 preferably is a money amount bid by an advertiser for a listing. This money amount is deducted from the advertiser's prepaid account or is recorded for advertiser accounts that are invoiced for each time a search is executed by a user on the corresponding search term and the search result list hyperlink is used to refer the searcher to the advertiser's web site. Finally, a rank value is a value generated dynamically, preferably by the processing system 34 of the account management server 22 shown in FIG. 1, each time an advertiser places a bid or a search enters a search query. The rank value of an advertiser's search listing determines the placement location of the advertiser's entry in the search result list generated when a search is executed on the corresponding search term. Preferably, rank value is an ordinal value determined in a direct relationship to the bid amount 358; the higher the bid amount, the higher the rank value, and the more advantageous the placement location on the search result list. Most preferably, the rank value of 1 is assigned to the highest bid amount with successively higher ordinal values (e.g., 2, 3, 4, . . .) associated with successively lower ranks and assigned to successively lower bid amounts.

Once logged in, an advertiser can perform a number of straightforward tasks set forth in menu 120 of FIG. 2, including viewing a list of rules and policies for advertisers, and requesting customer service assistance. These items cause routines to be invoked to implement the request. For example, when "Customer Service" is selected, an input screen 130 is displayed to allow the advertiser to select the type of customer service requested. In addition, forms may be provided on screen 130 so that an advertiser may type a customer comment into a web-based input form.

When "View Advertiser Policies" is selected, a routine will be invoked by processing system 34 of the account management server 22 FIG. 1. As shown in FIG. 2, the routine will display an informational web page 140. The web page 140 sets forth the advertiser policies currently in effect (e.g., "All search listing descriptions must clearly relate to the search term").

Menu 120 of FIG. 2 also includes an "Account Administration" selection 150 which allows an advertiser, among other things, to view and change the advertiser's contact information and billing information, or update the advertiser's access profile, if any. Web-based forms well known in the art and similar to those discussed above are provided for updating account information.

The "Account Administration" menu also includes a selection enabling an advertiser to view the transaction history of the advertiser's account. Under the "View Transaction History" selection, the advertiser may invoke routines to view a listing of past account transactions (e.g., adding money to account, adding or deleting bidded search terms, or changing a bid amount). Additional routines may be implemented to permit advertisers to display a history of transactions of a specified type, or that occur within a specified time. The transaction information may be obtained from the audit trail list 325 of FIG. 5, described above. Clickable buttons that may be implemented in software, web-based forms, and/or menus may be provided as known in the art to enable advertisers to specify such limitations.

In addition, the "Account Administration" menu 150 of FIG. 2 includes a selection enabling an advertiser to set notification options. Under this selection, the advertiser may select options that will cause the system to notify the advertiser when certain key events have occurred. For example, the advertiser may elect to set an option to have the system send conventional electronic mail messages to the advertiser when the advertiser's account balance has fallen below a specified level. In this manner, the advertiser may receive a "warning" to replenish the account before the account is suspended (meaning the advertiser's listings will no longer appear in search result lists). Another key event for which the advertiser may wish notification is a change

in position of an advertiser's listing in the search result list generated for a particular search term. For example, an advertiser may wish to have the system send a conventional electronic mail message to the advertiser if the advertiser has been outbid by another advertiser for a particular search term (meaning that the advertiser's listing will appear in a position farther down on the search result list page than previously). When one of the system-specified key events occurs, a database search is triggered for each affected search listing. The system will then execute the appropriate notification routine in accordance with the notification options specified in the advertiser's account.

Referring back to FIG. 2, a selection also appears in menu 120 that permits an advertiser to add money to the advertiser's account, so that the advertiser will have funds in their account to pay for referrals to the advertiser's site through the search results page. Preferably, only advertisers with funds in their advertiser's accounts may have their paid listings included in any search result lists generated. Most preferably, advertisers meeting selected business criteria may elect, in place of maintaining a positive account balance at all times, incur account charges regardless of account balance and pay an invoiced amount at regular intervals which reflects the charges incurred by actual referrals to the advertiser's site generated by the search engine. The process that is executed when the "Add Money to Account" selection is invoked is shown in further detail in FIG. 6, beginning at step 602. When the "Add Money to Account" selection is clicked in step 604, a function is invoked which receives data identifying the advertiser and retrieves the advertiser's account from the database. The executing process then stores the advertiser's default billing information and displays the default billing information for the advertiser in step 606. The displayed billing information includes a default amount of money to be added, a default payment type, and default instrument information.

In the preferred embodiment of the present invention, an advertiser may add funds online and substantially in real time through the use of a credit card, although the use of other payment types are certainly well within the

scope of the present invention. For example, in an alternate embodiment of the present invention, advertisers may add funds to their account by transferring the desired amount from the advertiser's bank account through an electronic funds verification mechanism known in the art such as debit cards, in a manner similar to that set forth in U.S. Pat. No. 5,724,424 to Gifford. In another alternate embodiment of the present invention, advertisers can add funds to their account using conventional paper-based checks. In that case, the additional funds may be updated in the account record database through manual entry. The instrument information includes further details regarding the type of payment. For example, for a credit card, the instrument information may include data on the name of the credit card (e.g., MasterCard, Visa, or American Express), the credit card number, the expiration date of the credit card, and billing information for the credit card (e.g., billing name and address). In a preferred embodiment of the present invention, only a partial credit card number is displayed to the advertiser for security purposes.

The default values displayed to the advertiser are obtained from a persistent state, e.g., stored in the account database. In an embodiment of the present invention, the stored billing information values may comprise the values set by the advertiser the last (e.g. most recent) time the process of adding money was invoked and completed for the advertiser's account. The default billing information is displayed to the advertiser in a web-based form. The advertiser may click on the appropriate text entry boxes on the web-based form and make changes to the default billing information. After the advertiser completes the changes, the advertiser may click on a hyperlinked "Submit" button provided on the form to request that the system update the billing information and current balance in step 608. Once the advertiser has requested an update, a function is invoked by the system which validates the billing information provided by the advertiser and displays it back to the advertiser for confirmation, as shown in step 610. The confirmation billing information is displayed in read-only form and may not be changed by the advertiser.

The validation step functions as follows. If payment is to be debited from an advertiser's external account, payment may be authenticated, authorized and completed using the system set forth in U.S. Pat. No. 5,724,424 to Gifford. However, if the payment type is by credit card, a validating algorithm is invoked by the system, which validates the credit card number using a method such as that set forth in U.S. Patent No. 5,836,241 to Stein et al. The validating algorithm also validates the expiration date via a straightforward comparison with the current system date and time. In addition, the function stores the new values in a temporary instance prior to confirmation by the advertiser.

Once the advertiser ascertains that the displayed data is correct, the advertiser may click on a "Confirm" button provided on the page to indicate that the account should be updated in step 612. In step 612, a function is invoked by the system which adds money to the appropriate account balance, updates the advertiser's billing information, and appends the billing information to the advertiser's payment history. The advertiser's updated billing information is stored to the persistent state (e.g., the account record database) from the temporary instance.

Within the function invoked at step 612, a credit card payment function may be invoked by the system at step 614. In an alternate embodiment of the present invention, other payment functions such as debit card payments may be invoked by defining multiple payment types depending on the updated value of the payment type.

If the payment type is credit card, the user's account is credited immediately at step 616, the user's credit card having already been validated in step 610. A screen showing the status of the add money transaction is displayed, showing a transaction number and a new current balance, reflecting the amount added by the just-completed credit card transaction.

In an alternate embodiment of the present invention, after the money has been added to the account, the amount of money added to the account may be allocated between subaccounts the end of the add money process at step 616. If the advertiser has no subaccounts, all of the money in the

account is a general allocation. However, if the advertiser has more than one subaccount, the system will display a confirmation and default message prompting the advertiser to "Allocate Money Between Subaccounts".

The menu selection "Allocate Money Between Subaccounts" may be invoked when money is added to the advertiser account after step 616 of FIG. 6, or it may be invoked within the "Account Management" menu 170 shown in FIG. 2. The "Account Management" menu 170 is accessible from the Advertiser Main Page 120, as shown in FIG. 2. This "Allocate Money Between Subaccounts" menu selection permits an advertiser to allocate current and any pending balances of the advertiser's account among the advertiser's subaccounts. The system will then update the subaccount balances. The current balance allocations will be made in real time, while the pending balance allocations will be stored in the persistent state. A routine will be invoked to update the subaccount balances to reflect the pending balance allocations when the payment for the pending balance is processed. Automatic notification may be sent to the advertiser at that time, if requested. This intuitive online account management and allocation permits advertisers to manage their online advertising budget quickly and efficiently. Advertisers may replenish their accounts with funds and allocate their budgets, all in one easy web-based session. The computer-based implementation eliminates time consuming, high cost manual entry of the advertiser's account transactions.

The "Allocate Money Between Subaccounts" routine begins when an advertiser indicates the intent to allocate money by invoking the appropriate menu selection at the execution points indicated above. When the advertiser indicates the intent to allocate, a function is invoked by the system to determine whether there are funds pending in the current balance (i.e., unactivated account credits) that have not yet been allocated to the advertiser's subaccounts, and displays the balance selection options. In a preferred embodiment of the present invention, an account instance is created and a pending current balance account field is set from the persistent state.

If there are no unallocated pending funds, the system may display the current available balances for the account as a whole as well as for each subaccount. The advertiser then distributes the current available balance between subaccounts and submits a request to update the balances. A function is invoked which calculates and displays the current running total for subaccount balances. The current running total is stored in a temporary variable which is set to the sum of current balances for all subaccounts for the specified advertiser. The function also validates the new available subaccount balances to make sure that the total does not exceed the authorized amount. If the new advertiser-set available subaccount balances does not exceed the authorized amount, a function is invoked which will update all of the subaccount balances in the persistent state and display the update in read-only format.

If there are pending funds in the current account balance, the pending funds must be allocated separately from the available current balance. The pending funds will then be added into the available current balance when the funds are received. The function must therefore prompt the advertiser to choose between allocating pending funds or allocating available funds. The allocating pending funds selection works in much the same manner as the allocating available funds selection outlined above. After the advertiser chooses to allocate pending funds, a routine is invoked to display current pending balances for the account and the subaccounts. The advertiser distributes the pending subaccount balances between campaigns and submits a request to update the balances. A function is invoked which calculates and displays the current running totals for the pending subaccount balances. This function also validates the new pending subaccount allocations to make sure that the allocations do not exceed any authorized amount. The current running total of pending allocations is set to the sum of current pending balances for all subaccounts for the advertiser. If the new user-set pending subaccount balances or the total of such balances do not exceed any authorized amount, the function will update all of the pending subaccount

allocations in the persistent state, e.g. the advertiser's account in the database, and display the update in read-only format.

As indicated above and shown in FIG. 2, a routine displaying the account management menu 170 may be invoked from the advertiser main menu 120. Aside from the "Allocate Money Between Subaccounts" selection described above, the remaining selections all use to some extent the search listings present in the advertiser's account on the database, and may also affect the advertiser's entry in the search result list. Thus, a further description of the search result list generated by the search engine is needed at this point.

When a remote searcher accesses the search query page on the search engine web server 24 and executes a search request according to the procedure described previously, the search engine web server 24 preferably generates and displays a search result list where the "canonicalized" entry in search term field of each search listing in the search result list exactly matches the canonicalized search term query entered by the remote searcher. The canonicalization of search terms used in queries and search listings removes common irregularities of search terms entered by searches and web site promoters, such as capital letters and pluralizations, in order to generate relevant results. However, alternate schemes for determining a match between the search term field of the search listing and the search term query entered by the remote searcher are well within the scope of the present invention. For example, string matching algorithms known in the art may be employed to generate matches where the keywords of the search listing search term and the search term query have the same root but are not exactly the same (e.g., computing vs. computer). Alternatively a thesaurus database of synonyms may be stored at search engine web server 24, so that matches may be generated for a search term having synonyms. Localization methodologies may also be employed to refine certain searches. For example, a search for "bakery" or "grocery store" may be limited to those advertisers within a selected city, zip code, or telephone area code. This information may be obtained through a cross-reference of the advertiser

account database stored at storage 32 on account management server 22. Finally, internationalization methodologies may be employed to refine searches for users outside the United States. For example, country or language-specific search results may be generated, by a cross-reference of the advertiser account database, for example.

An example of a search result list display used in an embodiment of the present invention is shown in FIG. 7, which is a display of the first several entries resulting from a search for the term "zip drives". As shown in FIG. 7, a single entry, such as entry 710a in a search result list consists of a description 720 of the web site, preferably comprising a title and a short textual description, and a hyperlink 730 which, when clicked by a searcher, directs the searcher's browser to the URL where the described web site is located. The URL 740 may also be displayed in the search result list entry 710a, as shown in FIG. 7. The "click through" of a search result item occurs when the remote searcher viewing the search result item display 710 of FIG. 7 selects, or "clicks" on the hyperlink 730 of the search result item display 710. In order for a "click through" to be completed, the searcher's click should be recorded at the account management server and redirected to the advertiser's URL via the redirect mechanism discussed above.

Search result list entries 710a – 710h may also show the rank value of the advertiser's search listing. The rank value is an ordinal value, preferably a number, generated and assigned to the search listing by the processing system 34 of FIG. 1. Preferably, the rank value is assigned through a process, implemented in software, that establishes an association between the bid amount, the rank, and the search term of a search listing. The process gathers all search listings that match a particular search term, sorts the search listings in order from highest to lowest bid amount, and assigns a rank value to each search listing in order. The highest bid amount receives the highest rank value, the next highest bid amount receives the next highest rank value, proceeding to the lowest bid amount, which receives the lowest rank value. Most preferably, the highest rank value is 1 with successively increasing ordinal values (e.g., 2, 3, 4, . . .) assigned in order of successively

decreasing rank. The correlation between rank value and bid amount is illustrated in FIG. 7, where each of the paid search list entries 710a through 710f display the advertiser's bid amount 750a through 750f for that entry. Preferably, if two search listings having the same search term also have the same bid amount, the bid that was received earlier in time will be assigned the higher rank value. Unpaid listings 710g and 710h do not display a bid amount and are displayed following the lowest-ranked paid listing. Preferably, unpaid listings are displayed if there are an insufficient number of listings to fill the 40 slots in a search results page. Unpaid listings are generated by a search engine utilizing objective distributed database and text searching algorithms known in the art. An example of such a search engine may be operated by Inktomi Corporation. The original search query entered by the remote searcher is used to generate unpaid listings through the conventional search engine.

As shown in the campaign management menu 170 of FIG. 2, several choices are presented to the advertiser to manage search listings. First, in the "Change Bids" selection, the advertiser may change the bid of search listings currently in the account. The process invoked by the system for the change bids function is shown in FIG. 8. After the advertiser indicates the intent to change bids by selecting the "Change Bids" menu option, the system searches the user's account in the database and displays the search listings for the entire account or a default subaccount in the advertiser's account, as shown in step 810. Search listings may be grouped into subaccounts defined by the advertiser and may comprise one or more search listings. Only one subaccount may be displayed at a time. The display should also preferably permit the advertiser to change the subaccount selected, as shown in step 815. The screen display will then show the search listings for the selected subaccount, as indicated in step 820.

An example of screen display shown to the advertiser in step 810 is shown in FIG. 9 and will be discussed below. To change bids, the advertiser user may specify new bids for search terms for which the advertiser already has an existing bid by entering a new bid amount into the new bid input field

for the search term. The advertiser-entered bid changes are displayed to the advertiser at step 820 of FIG. 8 as discussed above. To update the bids for the display page, the advertiser requests, at step 830 of FIG. 8, to update the result of changes. The advertiser may transmit such a request to the account management server by a variety of means, including clicking on a button graphic.

As shown in step 840 of FIG. 8, upon receiving the request to update the advertiser's bids, the system calculates the new current bid amounts for every search listing displayed, the rank values, and the bid amount needed to become the highest ranked search listing matching the search term field. Preferably, the system then presents a display of changes at step 850. After the user confirms the changes, the system updates the persistent state by writing the changes to the account in the database.

The search listing data is displayed in tabular format, with each search listing corresponding to one row of the table 900. The search term 902 is displayed in the leftmost column, followed by the current bid amount 904, and the current rank 906 of the search listing. The current rank is followed by a column entitled "Bid to become #1" 907, defined as the bid amount needed to become the highest ranked search listing for the displayed search term. The rightmost column of each row comprises a new bid input field 908 which is set initially to the current bid amount.

As shown in FIG. 9, the search listings may be displayed as "subaccounts." Each subaccount comprises one search listing group, with multiple subaccounts residing within one advertiser account. Each subaccount may be displayed on a separate display page having a separate page. The advertiser should preferably be able to change the subaccount being displayed by manipulating a pull-down menu 910 on the display shown in FIG. 9. In addition, search listing groups that cannot be displayed completely in one page may be separated into pages which may be individually viewed by manipulating pull-down menu 920. Again, the advertiser should preferably be able to change the page displayed by clicking directly on a pull-down menu 920 located on the display page of FIG. 9. The

advertiser may specify a new bid for a displayed search listing by entering a new bid amount into the new bid input field 908 for the search listing. To update the result of the advertiser-entered changes, the advertiser clicks on button graphic 912 to transmit an update request to the account management server, which updates the bids as described above.

Many of the other selections listed in the "Account Management" menu 170 of FIG. 2 function as variants of the "Change Bid" function described above. For example, if the advertiser selects the "Change Rank Position" option, the advertiser may be presented with a display similar to the display of FIG. 9 used in the "Change Bid" function. However, in the "Change Rank Position" option, the "New Bid" field would be replaced by a "New Rank" field, in which the advertiser enters the new desired rank position for a search term. After the advertiser requests that the ranks be updated, the system then calculates a new bid price by any of a variety of algorithms easily available to one skilled in the art. For example, the system may invoke a routine to locate the search listing in the search database having the desired rank/search term combination, retrieve the associated bid amount of said combination, and then calculate a bid amount that is N cents higher; where N=1, for example. After the system calculates the new bid price and presents a read-only confirmation display to the advertiser, the system updates the bid prices and rank values upon receiving approval from the advertiser.

The "Modify Listing Component" selection on Account Management menu 170 of FIG. 2 may also generate a display similar to the format of FIG. 9. When the advertiser selects the "Modify Listing Component" option, the advertiser may input changes to the URL, title, or description of a search listing via web-based forms set up for each search listing. Similar to the process discussed above, the forms for the URL, title, and description fields may initially contain the old URL, title and description as default values. After the advertiser enters the desired changes, the advertiser may transmit a request to the system to update the changes. The system then displays a read-only confirmation screen, and then writes the changes to the persistent

state (e.g., the user account database) after the advertiser approves the changes.

A process similar to those discussed above may be implemented for changing any other peripheral options related to a search listing; for example, changing the matching options related to a bidded search term. Any recalculations of bids or ranks required by the changes may also be determined in a manner similar to the processes discussed above.

In the "Delete Bidded Search Term" option, the system retrieves all of the search listings in the account of the advertiser and displays the search listings in an organization and a format similar to the display of FIG. 9. Each search listing entry may include, instead of the new bid field, a check box for the advertiser to click on. The advertiser would then click to place a check (X) mark next to each search term to be deleted, although any other means known in the art for selecting one or more items from a list on a web page may be used. After the advertiser selects all the search listings to be deleted and requests that the system update the changes, the system preferably presents a read-only confirmation of the requested changes, and updates the advertiser's account only after the advertiser approves the changes. The "deleted" search listings are removed from the search database 36 and will not appear in subsequent searches. However, the search listing will remain as part of the advertiser's account record for billing and account activity monitoring purposes.

In the "Add Bidded Search Term" option, the system provides the advertiser with a display having a number of entry fields corresponding to the elements of a search listing. The advertiser then enters into each field information corresponding to the respective search listing element, including the search term, the web site URL, the web site title, the web site description, and the bid amount, as well as any other relevant information. After the advertiser has completed entering the data and has indicated thus to the system, the system returns a read-only confirmation screen to the advertiser. The system then creates a new search listing instance and writes it into the

account database and the search database upon receiving approval from the advertiser.

Preferably, the "Account Management" menu 170 of FIG. 2 provides a selection for the advertiser to “Get Suggestions On Bidded Search Term”. In this case, the advertiser enters a bidded search term into a form-driven query box displayed to the advertiser. The system reads the search term entered by the advertiser and generates a list of additional related search terms to assist the advertiser in locating search terms relevant to the content of the advertiser's web site. Preferably, the additional search terms are generated using methods such as a string matching algorithm applied to a database of bidded search terms and/or a thesaurus database implemented in software. The advertiser may select search terms to bid on from the list generated by the system. In that case, the system displays to the advertisers the entry fields described above for the “Add Bidded Search Term” selection, with a form for entering a search listing for each search term selected. Preferably, the selected search term is inserted as a default value into the form for each search listing. Default values for the other search listing components may also be inserted into the forms if desired.

The "Account Management" menu 170 of FIG. 2 also preferably provides advertisers with a “Project Expenses” selection. In this selection, the advertiser specifies a search listing or subaccount for which the advertiser would like to predict a “daily run rate” and “days remaining to expiration.” The system calculates the projections based on a cost projection algorithm, and displays the predictions to the advertiser on a read-only screen. The predictions may be calculated using a number of different algorithms known in the art. However, since the cost of a search listing is calculated by multiplying the bid amount by the total number of clicks received by the search listing at that bid amount during a specified time period, every cost projection algorithm must generally determine an estimated number of clicks per month (or other specified time period) for a search listing. The clicks on a search listing may be tracked via implementation of a software counting mechanism as is well known in the art. Clicks for all search listings may be tracked over time, this

data may be used to generate estimated numbers of clicks per month overall, and for individual search terms. For a particular search term, an estimated number of searches per day is determined and is multiplied by the cost of a click. This product is then multiplied by a ratio of the average number of clicks over the average number of impressions for the rank of the search listing in question to obtain a daily run rate. The current balance may be divided by the daily run rate to obtain a projected number of days to exhaustion or "expiration" of account funds.

One embodiment of the present invention bases the cost projection algorithm on a simple predictor model that assumes that every search term performs in a similar fashion. This model assumes that the rank of the advertiser's search listing will remain constant and not fluctuate throughout the month. This algorithm has the advantages of being simple to implement and fast to calculate. The predictor model is based on the fact that the click through rate, e.g. the total number of clicks, or referrals, for a particular searcher listing, is considered to be a function of the rank of the search listing. The model therefore assumes that the usage curve of each search term, that is, the curve that result when the number of clicks on a search listing is plotted against the rank of the search listing, is similar to the usage curve for all search terms. Thus, known values extrapolated over time for the sum of all clicks for all search terms, the sum of all clicks at a given rank for all search terms, and the sum of all clicks for the selected search term may be employed in a simple proportion to determine the total of all clicks for the given rank for the selected search term. The estimated daily total of all clicks for the selected search term at the selected rank is then multiplied by the advertiser's current bid amount for the search term at that rank to determine a daily expense projection. In addition, if particular search terms or classes of search terms are known to differ markedly from the general pattern, correction values specific to the search term, advertiser, or other parameter may be introduced to fine-tune the projected cost estimate.

Finally, the "Account Management" menu 170 of FIG. 2 provides several selections to view information related to the advertiser's campaigns.

The "View Subaccount Information" selection displays read-only information related to the selected subaccount. The "View Search Term List" selection displays the list of the advertiser's selected search terms along with the corresponding URLs, bid price, and rank, with the search terms preferably grouped by subaccount. The advertiser may also view current top bids for a set of search terms selected from a list of search terms from a read-only display generated by the system upon receiving the requested search terms from the advertiser.

For an advertiser who requires a more comprehensive report of search listing activity, the "View Report" option may be selected from the Advertiser Main Page 120 of FIG. 2. In an embodiment of the present invention, the "View Report" options generate reports comprehensive for up to one year preceding the current date. For example, daily reports are available for the each of the immediately preceding 7 days, weekly reports for the preceding four weeks, monthly reports for the preceding twelve months, and quarterly reports for the last four quarters. Additional reports may also be made available depending on advertiser interest. Other predefined report types may include activity tracked during the following time periods: Since Inception of the Account, Year To Date, Yearly, Quarter To Date, Month To Date, and Week to Date. Report Categories may include a Detail Report, viewable by Advertiser Account, by Search Listing, and by URL, and a Summary Report, viewable by Advertiser Account and by Subaccount. The reports may include identification data such as advertiser account and subaccount name, the dates covered by the report and the type of report. In addition, the reports may include key search listing account data such as current balance, pending current balance, average daily account debit, and run rate. Furthermore, the reports may also include key data, such as: search terms, URLs, bids, current ranks, and number of clicks, number of searches done for the search term, number of impressions (times that the search listing appeared in a search result list), and click through rate (defined as Number of Clicks/Number of Impressions). Preferably, the report is available in at least HTML view options for viewing via a browser program, printing, or downloading. Note, however,

that other view options may be made available, such as Adobe Acrobat, PostScript, ASCII text, spreadsheet interchange formats (e.g., CSV, tab-delimited), and other well-known formats.

When the advertiser has selected the "View Report" option, the system invokes a function which displays a list of available report types, dates, categories, and view options. The system preferably creates a report instance with the following fields, all of which are initially set to null: report type, report date, report category, and view option. Once the advertiser has defined the parameters described above, the system invokes a function to generate the requested report, based on the advertiser-set parameters, and to display the report, based on the view option parameter. .

Finally, a preferred embodiment of the present invention implements an option for context specific help that the advertiser may request at any time the advertiser is logged in. The help option may be implemented as a small icon or button located on the system generated display page. The advertiser may click on the icon or button graphic on the display page to request help, upon which the system generates and displays a help page keyed to the function of the particular display the user is viewing. The help may be implemented as separate display pages, a searchable index, dialog boxes, or by any other methods well known in the art.

The foregoing detailed description should be regarded as illustrative rather than limiting and the appended claims, including all equivalents, are intended to define the scope of the invention.

CLAIMS

1. A method of generating a search result list substantially in real time in response to a search request from a searcher using a computer network, comprising:

maintaining a database including a plurality of search listings, wherein each search listing is associated with a bid amount and a search term;

receiving a search request from the searcher;

identifying the search listings having search terms generating a match with the search request;

ordering the identified search listings into a search result list in accordance with the values of the respective bid amounts for the identified search listings, including search listings, if any, having a bid amount of zero;

receiving a retrieval request from the searcher to retrieve information associated with a search listing in the search result list; and

recording a retrieval request event in database corresponding to the searcher's apostrophe retrieval request.

2. The method of claim 1, further comprising the step of updating a search listing in the search listing database in response to a request from a network information provider.

3. The method of claim 1, wherein the account database comprises at least one account record for each of a plurality of network information providers, said account record including

at least one search listing having a search term and a bid amount,

an account balance; and

a unique account identifier.

4. The method of claim 3, wherein the search listings in the account record are organized into at least one subaccount within the account record.

5. The method of claim 3, wherein the retrieval request event comprises the search term and the bid amount of the search listing, and an account identifier associated with the search listing.

6. The method of claim 5, wherein the retrieval request event further includes a rank value.

7. The method of claim 5, wherein the retrieval request event is linked to the account record having an account identifier that corresponds to the account identifier listed on the retrieval request event.

8. The method of claim 7, wherein the bid amount of the retrieval request event is charged to the account balance of the account record having an account identifier that matches the account identifier of the retrieval request event.

9. A method of generating a search result list substantially in real time in response to a search request from a searcher using a computer network, comprising:

maintaining a database including a plurality of search listings, wherein each search listing is associated with a bid amount and a search term;

receiving a search request from the searcher;

identifying the search listings having search terms generating a match with the search request;

ordering the identified search listings into a search result list in accordance with the values of the respective bid amounts for the identified search listings;

receiving a retrieval request from the searcher to network information associated with a search listing in the search result list; and

estimating the cost of a search listing for a specified time period upon receiving a request from a web site promoter.

10. The method of claim 9, wherein the estimated cost of a search listing for the specified time period is calculated as a product of the current bid

amount of the search listing and a projected number of times the search listing is selected by a searcher within a specified time period.

11. A method of enabling a network information provider to update information relating to a search listing on a search result list generated by a computer network search engine, comprising the steps of:

maintaining an account database having at least one account record for each of a plurality of network information providers, said account record including

at least one search listing having a search term and a bid amount; and

an account identifier;

receiving from a network information provider a change request for a bid amount of a search listing in the network information provider's account;

updating the bid amount of the search listing in the network information provider's account record in response to the change request; and

determining a position substantially in real time for the updated search listing in a search result list generated by the search engine in response to a search request received from a searcher using the computer network, where the search term of the updated search listing generates a match with the search request and the position of the updated search listing in the search result list is determined using the bid amount.

12. The method of claim 11, where the search term of each search listing in the search result list generates a match with the search request.

13. The method of claim 12, wherein the search listings in the search result list are sorted in order of decreasing bid amount.

14. The method of claim 13, further comprising the step of assigning an ordinal rank value to each search listing in the search result list in order of decreasing bid amount, with the smallest rank value assigned to the search listing in the search result list having the highest bid amount, and the largest rank value assigned to the search listing having the lowest bid amount.

15. The method of claim 13, further comprising the steps of

determining creation time value for each search listing in the account database;

identifying search listings within a search result list having equivalent bid amounts; and

within a group of search listings within a search result list that have equivalent bid amounts, sorting the search listings in order from earliest to most recent creation time value.

16. The method of claim 11, wherein the account record further includes an account balance.

17. The method of claim 16, wherein the account balance is positive.

18. The method of claim 16, further comprising the step of subtracting the bid amount from the account balance substantially in real time when a search listing is selected by the searcher from the search result list.

19. The method of claim 16, where the search listing further comprises a web site title, a web site description, and a web site Uniform Resource Locator (URL).

20. The method of claim 19, further comprising the step of recording a retrieval request event substantially in real time when a search listing is selected by a remote searcher from the search result list.

21. The method of claim 20, wherein the retrieval request event comprises an account identifier, and a bid amount.

22. The method of claim 21, wherein the retrieval request event further comprises a search term.

23. The method of claim 21, wherein the retrieval request event further comprises a web site URL.

24. The method of claim 21, further comprising the step of applying a charge to an account balance, where the charge corresponds to a bid amount recorded in a retrieval request event having an account identifier that matches the account identifier corresponding to the account balance.

25. A method of enabling a web site promoters using a computer network to update information relating to a search listing within a search result list generated by a search engine substantially in real time in response to a search request received from a remote computer over the computer network, comprising the steps of:

maintaining an account database having at least one account record for each of a plurality of web site promoters of the computer network, said account record including an account identifier, and at least one search listing having a search term and a bid amount;

providing the web site promoter with authenticated login access, wherein the web site promoter's login access permits the web site promoter to modify the web site promoter's account record;

modifying a search listing of the account record upon receiving a request from said web site promoter;

generating a search result list including search listings wherein the search term for each search listing generates a match with the search request, the search listings in the search result list arranged in an order corresponding to the bid amounts of the search listings; and

estimating a cost of a search listing for a specified time period upon receiving a request from a web site promoter.

26. The method of claim 25, wherein the search result list further includes at least one search listing having a bid amount of zero.

27. The method of claim 25, wherein the search result list further includes at least one search listing that is not included in the account database.

28. The method of claim 25, wherein the step of modifying the search listing of the account record upon receiving a request from the web site promoter is performed substantially in real time.

29. The method of claim 25, wherein the search listing further includes a title, a description, and a Uniform Resource Locator (URL).

30. The method of claim 25, further comprising the step of adding a search listing substantially in real time to an account record of a web site promoter upon receiving a request from said web site promoter.

31. The method of claim 25, further comprising the step of deleting a search listing substantially in real time from an account record of a web site promoter upon receiving a request from said web site promoter.

32. The method of claim 25, wherein the account record further comprises an account balance.

33 The method of claim 32, wherein the account balance is positive.

34. The method of claim 32, further comprising the step of adding a money amount to the account balance of the web site promoters upon receiving a request from the web site promoter.

35. The method of claim 34, wherein the money amount has been verified by an external financial authorization network.

36. The method of claim 25, wherein the search term and the search request each comprise at least one character string.

37. The method of claim 25, further comprising the step of generating an activity report for a web site promoter upon receiving a request from said web site promoter.

38. The method of claim 37, wherein the estimated cost of a search listing for the specified time period is calculated as a product of the current bid amount of the search listing and a projected number of times the search

listing is selected by a searcher at a remote computer in a specified time period.

39. The method of claim 25, wherein the bid amount of a web site promoter's search listing comprises a money amount that is deducted from the account balance of said web site promoter's account each time the search is selected by a remote searcher.

40. The method of claim 25, wherein the search listings of the web site promoters in the search result list are sorted in decreasing order from highest to lowest bid amounts.

41. The method of claim 40, wherein an ordinal rank value is assigned in ascending order to each search listing of the search result list in the sorted order starting at the search listing with the highest bid amount, which is assigned the smallest rank value, and ending with the search listing with the lowest bid amount, which is assigned the largest rank value.

42. The method of claim 25, further comprising the step of displaying data from the search result list at the remote computer.

43. The method of claim 25, further comprising the step of generating a search listing activity report.

44. The method of claim 25, further comprising the step of suggesting alternative search terms for the creation of new search listings upon the request of the web site promoter.

45. The method of claim 25, wherein said computer network is the Internet.

46. A method of enabling a web site promoter using a computer network to update information relating to a search listing within a search result list generated by an Internet search engine, said method comprising the steps of:

maintaining a database having at least one account record for at least one web site promoter using the computer network, said account record including:

at least one search listing, where each search listing includes a search term field having at least one keyword, a bid amount, a Uniform Resource Locator (URL) corresponding to the address of a document residing on a network web server, a description, and a title ;

an account balance;

payment processing information for the web site promoter, said payment processing information maintained isolated from public access via the computer network;

payment histories of the web site promoter; and

search listing histories of the web site promoter;

providing the web site promoter with login access in response to authentication, wherein the web site promoter's login access permits the web site promoter access to modify the web site promoter's account record, the web site promoter not being provided with access to modify account records of others;

modifying substantially in real time the search listing of a web site promoter upon receiving a request from said web site promoter;

receiving a search request, the search request including at least one keyword, the search request being received over the Internet from a searcher at a remote computer;

generating a search result list in response to the search request, the search result list including search listings of the account records on the computer network, wherein the search term field for each search listing in the search result list generates a match with the search request, the search listings in the search result list arranged in an order determined using the bid amounts of the search listings and

deleting a search listing substantially in real time from the account record of a web site promoter upon receiving a request from said web site promoter.

47. The method of claim 46, further comprising the step of adding a search listing to an account of web site promoter upon receiving a request from said web site promoter.

48. The method of claim 46, further comprising the step of adding a money amount to the account balance of a web site promoter upon receiving a request from said web site promoter.

49. The method of claim 46, wherein the money amount has been verified by an external financial authorization network.

50. The method of claim 46, wherein the keyword comprises a character string.

51. The method of claim 46, further comprising the step of generating an account activity report for a web site promoter upon receiving a request from said web site promoter.

52. The method of claim 46, further comprising the step of estimating a cost of a search listing for a specified time period upon receiving a request from a web site promoter.

53. The method of claim 46, wherein the estimated cost is calculated as a product of the bid amount of the search listing and a projected number of times the search listing is selected in the specified time period.

54. The method of claim 46, wherein the bid amount of a web site promoter's search listing comprises a money amount that will be deducted from the account balance of said web site promoter's account each time the search listing is selected.

55. The method of claim 46, wherein the rank value is an ordinal value.

56. The method of claim 46, wherein the search listings of the search result list are sorted in decreasing order from highest to lowest bid amounts.

57. The method of claim 56, wherein a rank value is assigned to each search listing of the search result list in the sorted order starting at the search listing with the highest bid amount, which is assigned the smallest rank value, and ending with the search listing with the lowest bid amount, which is assigned the largest rank value.

58. The method of claim 57, further comprising the step of displaying data from the search result list at the remote computer.

59. The method of claim 46, further comprising the step of generating a search listing activity report.

60. The method of claim 46, further comprising the step of suggesting alternative search terms upon the request of the web site promoter.

61. A system for enabling an advertising web site promoter using a computer network to update information relating to a search listing within a search result list generated by an Internet search engine comprising:

a computer system having stored thereon

a database having at least one account record for each of a plurality of advertising web site promoters using the computer network, the account record including:

at least one search listing including a search term having at least one keyword, a bid amount, a Uniform Resource Locator (URL) corresponding to the address of a document residing on a network server, a description, and a title;

an account balance;

a history of search listings included in the advertising web site promoter's account record;

payment processing information, wherein said payment processing information is accessible to the computer system and isolated from public access via the computer network; and

a payment history;

programming code for providing the advertising web site promoter with login access in response to authentication, wherein the advertising web site promoter's login access grants the advertising web site promoter access to modify the advertising web site promoter's account, the advertising web site promoter not being provided with access to modify the accounts of others;

programming code on said computer system for adding money to the account of an advertising web site promoter in substantially real time upon receiving a request from said advertising web site promoter;

programming code on said computer system for adding a search listing to an account of an advertising web site promoter in substantially real time upon receiving a request from said advertising web site promoter;

programming code on said computer system for deleting a search listing to an account of an advertising web site promoter in substantially real time upon receiving a request from said advertising web site promoter;

programming code on said computer system for modifying in substantially real time the search listing of an advertising web site promoter upon receiving a request from said advertising web site promoter;

programming code for generating in substantially real time an activity report for an advertising web site promoter upon receiving a request from said advertising web site promoter;

programming code for receiving a search request from a remote computer, the search request including at least one keyword, the search request being received over the computer network from the remote computer through a web site that is publicly accessible without authentication; and

programming code for generating in substantially real time a search result list in response to the search request, the search result list including search listings from the accounts on the database, wherein the search term for each search listing in the search result list generates a match with the search request, the search listings in the search result list arranged in an order determined using the bid amounts of the search listings.