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(54) Title: LOCAL AD SYSTEM

(57) **Abstract:** A targeted internet advertising campaign can be defined through the use of one or more automated interfaces. Such interfaces can allow a business wishing to embark on such a targeted internet advertising campaign to input information such as a geographic area for the campaign, demographic attributes of targeted web users, and the amount which should be expended on the campaign. Such a campaign can then be executed and invoiced in an automated manner using the information provided by the business.



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LOCAL AD SYSTEM

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CROSS REFERENCE TO RELATED APPLICATIONS

- [0001] The present non-provisional application claims the benefit of U.S. Provisional Patent Application Ser. No. 60/805,032, LOCAL AD SYSTEM, filed June 16, 2006, which is hereby incorporated by reference in its entirety.

BACKGROUND

- [0002] Internet based advertising has historically suffered from two significant problems. First, internet advertising has been entirely inappropriate for businesses which have a local customer base, because, on the internet, all web pages are globally available. Second, internet advertising suffers from a problem of spurious clicks. Under commonly used payment models, entities which advertise on the internet pay a set amount each time an ad is clicked. Thus, if an ad is clicked multiple times by a single individual, or by an automated agent (e.g., a robot), the advertiser can become liable for significant charges without gaining any corresponding benefit. Certain embodiments of the invention disclosed herein can be used to address one or more of those problems, as well as being put to other uses which will be apparent to those of ordinary skill in the art in light of this disclosure.

SUMMARY

- [0003] Certain aspects of the disclosure of this application can be implemented as a method for providing content on a computer network. Such a method might include steps such as receiving an IP address from a web user visiting a web page, determining a location for said web user based on a lookup operation using said IP

address, calculating a distance between that location and a location associated with a content item, and comparing that distance with a radius associated with the content item. Further, in some such methods, if the distance is less than or equal to the radius, the content item might be presented to the web user via the web page.

[0004] For the sake of clarity, certain words used in the above description should be understood as having particular meanings in the context of this application. First, the term “receive” (and various forms thereof) should be understood to refer to the act of obtaining the thing “received.” Second, a “web user” should be understood to refer to an individual who utilizes a computer network, such as the internet (though other networks could also be used by a “web user”), to obtain information. A “web page” should be understood to refer to a document located on a computer network and identified by a unique identifier, such as a uniform resource locator (“URL”). In the context of a “web page,” the term “visit” (and various forms thereof) should be understood to refer to the act of accessing the web page, such as by navigating to that page using an internet browser. Similarly, the term “determine” (and various forms thereof) should be understood to refer to the act of generating, selecting or otherwise specifying something. For example, to obtain an output as the result of analysis would be an example of “determining” that output. As a second example, to choose a response from a list of possible responses would be a method of “determining” a response. Additionally, the term “location” should be understood to refer to a particular point or area in physical space. When a location is said to be “associated with a content item,” that statement should be understood to mean that there is a defined relationship between the particular content item and the location “associated” with it. Also, a “lookup operation” should be understood to refer to a procedure in which a table or other set of values stored in a computer is queried or searched until a specified value is found. The term “calculate” (and variations thereof) should be understood to refer to the act of determining or ascertaining a thing by mathematical, formal logical, or algorithmic methods. The term “compare” (and variations thereof) should be understood to refer to the act of determining a relationship between the things being “compared.” Additionally, the term “content item” should be understood as referring to a delimited and identifiable

piece of information represented as data, while the term “present” (and various forms thereof) should be understood to refer to the act of showing, demonstrating, or delivering something to a target audience or recipient.

[0005] Of course, it should be understood that the description of the method set forth above is not intended to be limiting on the types of methods which could be implemented by those of skill in the art in light of the disclosure of this application. Indeed, even within the class of methods which conform to the description above, variations are possible. For example, some methods of the type set forth above might include additional steps, such as determining an ISP associated with an IP address of a web user visiting a web page, and/or screening said IP address using a set of stored data indicating whether an accurate location can be determined for a customer of said ISP using said IP address.

[0006] For the sake of clarity, certain terms, as used in the above description should be understood as having particular meanings in the context of this application. For example, an “ISP” should be understood to refer to an internet service provider, which is a company that provides individuals and/or other companies access to the Internet, and might also provide related services (such as web page hosting). Similarly, an “IP address” should be understood to refer to a number identifying a sender or receiver of packets on the internet. When an IP address is “associated” with an ISP, it means that the IP address is one which is used by the ISP to provide computer network access to its customers. For example, if an individual accesses the internet using an internet connection provided by his or her employer using equipment owned by the employer, the IP address of that user would be associated with the employer acting as an ISP. Further, the term “screening” (and variations thereof) should be understood to refer to the act of performing an appraisal and selection of the things being “screened.” The term “data” should be understood to refer to information which is represented in a form which is capable of being processed, stored, and/or transmitted. The term “set” should be understood to refer to a number, group, or combination of one or more things of similar nature, design, or function. It should further be understood that a “set,” as used in this application, can refer to a number, group, or combination which has only one member. The term “store” (and variations thereof) should be understood

to refer to the act of preserving, maintaining, or setting down the things being “stored” in a form from which it can be retrieved at a subsequent time. A statement that data “indicates that an accurate location can be determined for a customer of an ISP using said IP address” should be understood to mean that the data shows that there is a predictable relationship between the IP address assigned to the customer of an ISP and the location of that customer which has a sufficient degree of accuracy to establish the customer’s location within an area used for some defined purpose (e.g., ad targeting).

[0007] As a further variation, it is also possible that, in addition to, or as an alternative to, the location comparisons described above, a method for providing content on a computer network might include comparing a set of demographic data for a web user with a set of demographic data associated with a content item. In some such methods the set of demographic data associated with the web user might be determined by performing a lookup operation using the IP address of the web user. For the sake of clarity, in this description, “demographic data” should be understood to refer to data representing vital or social statistics of individuals or communities. Also, it should be understood that, in some methods such as described herein, the content item might be an “ad” (used interchangeably with the term “advertisement”), which should be understood to refer to a notice designed to attract attention and/or patronage of a business.

[0008] It should be understood, of course, that this disclosure is not limited to enabling those of ordinary skill in the art to utilize methods such as described above. For example, in addition to methods, such as set forth above, those of ordinary skill in the art, in light of the disclosure of this application, could implement a variety of computer readable media having computer executable instructions stored thereon. Some such computer executable instructions might be operable to configure a computer to perform acts such as obtaining a plurality of records. In such a case, the plurality of records might comprise a current record, and a previously processed record. Further, in some instances, where a computer readable medium has stored thereon a set of computer executable instructions operable to configure a computer to obtain such a plurality of records, the computer executable

instructions might be further operable to configure the computer to determine if the previously processed record matches the current record.

[0009] For the sake of clarity, certain terms used in the above description should be understood as having particular meanings when used in this application. For example, the term “computer” should be understood to refer to a device or group of devices which is capable of performing one or more logical and/or physical operations on data to produce a result. Similarly, a “computer readable medium” should be read broadly to include any object, substance, or combination of objects or substances, capable of storing data or instructions in a form in which they can be retrieved and/or processed by a device. A “computer readable medium” should not be limited to any particular type or organization, and should be understood to include distributed and decentralized systems however they are physically or logically disposed, as well as storage objects of systems which are located in a defined and/or circumscribed physical and/or logical space. Additionally, “computer executable instructions” should be understood to refer to data which can be used to specify physical or logical operations which can be performed by a computer. The term “obtain” (and various forms thereof) should be understood to refer to the act of coming into possession of, getting, acquiring, or procuring, the thing “obtained.” For example, if a routine in a computer program is passed data as an argument, that routine could be described as having “obtained” the data. Similarly, if the routine requests the data, such as through an interface presented to a user, or from a database via a lookup operation, the routine could be said to have “obtained” any data received. Of course, such examples should be understood as being illustrative only, and should not be treated as limiting on the meaning of the term “obtain.” Similarly, the term “matching” (and various forms thereof) should be understood to refer to the relationship of two or more things being equal to each other, or having one or more attributes which are equivalent within some definition (e.g., within present tolerance limits).

[0010] Of course, it should be understood that computer readable media which could be implemented by those of ordinary skill in the art in light of this disclosure are not limited to storing computer executable instructions operable to configure a computer to perform only the acts set forth above. Additional (or alternative) acts

are also possible. For example, in some instances, computer executable instructions stored on a computer readable medium might configure a computer to, if a previously processed record matches a current record, determine if a timestamp for the previously processed record is within a first threshold period of a timestamp for the current record. In such a case, if the timestamp for the previously processed record is different from the timestamp for the current record by more than the first threshold period, the computer might determine if the timestamp for the previously processed record is different from the timestamp for the current record by more than a second threshold period. If such determinations are made, and the timestamp for the previously processed record is different from the timestamp for the current record by more than the second threshold period, or if the previously processed record does not match the current record, the computer might be configured to add a unique visit charge to an invoice amount.

[0011] For the sake of clarity, certain terms used in the above description should be understood as having particular meanings in the context of this application. For example, the term “timestamp” should be understood to refer to a representation of the time at which an event takes place, as recorded by a computer. A “threshold period” should be understood to refer to an interval of time which is used as a screening criteria for determining the appropriateness of a particular course of action. Additionally, a “unique visit charge” should be understood to refer to a price or fee assessed based on visits to a website which are not matched by other visits within specified criteria. Similarly, an “invoice amount” should be understood as an amount charged for goods provided or services rendered. It should be understood that an “invoice amount” could refer to amounts automatically deducted from a balance (e.g., in a prepay situation), or to an amount which is sent to a business in the form of a bill (e.g., in a postpay situation).

[0012] Still further variations on computer readable media as set forth above are also possible. For example, in some instances, such computer readable media might have stored thereon computer executable instructions operable to configure a computer to determine if a current record is associated with an ad campaign having a range value of zero. In some instances, if such a determination is made,

and a previously processed record does not match the current record, or the timestamp for the previously processed record is different from the timestamp for the current record by more than the first threshold period, the computer might be configured to add a cost per click charge to the invoice amount. Further, in some instances, computer executable instructions stored on a computer readable medium might be operable to configure a computer to determine a payment method for an ad campaign associated with the current record. Further variations are also possible in the details of the acts performed by an appropriately configured computer. For example, if a computer is configured to determine if a previously processed record matches a current record, that determination might be made by comparing the previously processed record and the current record in terms of the IP address of a web user, identification of an ad provided to the web user, and the website on which the ad was provided to the web user. Of course, such matching is described only to illustrate potential techniques which could be implemented by those of skill in the art based on this disclosure, and other matching techniques are also possible, and could be implemented without undue experimentation.

[0013] For the sake of clarity, certain terms used in the above description should be understood as having particular meanings in the context of this application. For example, the term “ad campaign” should be understood as referring to an organized program of advertisements. Additionally, a “cost per click charge” should be understood as a price or fee levied in response to a web user clicking on an advertisement (e.g., a banner ad). Further, a “payment method associated with an ad campaign” should be understood to refer to the type of payment specified for satisfying charges generated by the ad campaign (e.g., cost per click, payment per unique visit, cost per action, etc.).

[0014] It should be understood that the discussion of computer readable media set forth above is intended to be illustrative only of certain manners in which the teachings of this disclosure could be implemented, and is not intended to imply the existence of limitations on potential implementations for those teachings. Other implementations are also possible. For example, in light of the teachings of this application, one of ordinary skill in the art could implement a computer readable

medium having stored thereon computer executable instructions operable to configure a computer to perform acts such as obtaining a banner ad and associated clickthrough page, obtaining a geographic area for display of the banner ad, and obtaining a payment method for charges associated with displaying the banner ad and the clickthrough page. Such computer executable instructions might also be operable to configure a computer to combine the banner ad, the clickthrough page, the geographic area, and the payment method into an ad campaign, and to provide the banner ad and the clickthrough page to a plurality of web users in accordance with that ad campaign.

[0015] For the sake of clarity, certain terms used in the description above should be understood as having particular meanings when used in the context of this application. For example, a “banner ad” should be understood to refer to a graphical advertisement which is provided to a web user and which, when activated, transports the web user to a main advertising page (the “clickthrough page”). Similarly, a “geographic area for display of a banner ad” refers to a particular extent of space for which, if a web user accesses a page on the internet from that space, the banner ad could be displayed to that web user.

[0016] As further clarification, in some instances where a computer obtains a clickthrough page for a banner ad, obtaining the clickthrough page might comprise obtaining a URL for that clickthrough page (e.g., if a business creating an ad campaign wishes to use a previously existing web page). Alternatively, in some instances, obtaining a clickthrough page might comprise defining a virtual web page (i.e., a presence on the internet provided to a business which does not have a web page of its own). Such a virtual web page might comprise a coupon (i.e., a certificate which can be used to modify a cost associated with a transaction by presentation to a business), a business name, and a business location. Defining such a virtual web page might take place by obtaining information for inclusion in the virtual web page via a web-based interface (i.e., a collection of tools and information used to elicit and/or receive information) presented to a user.

[0017] Of course, it should be understood that additional variations are also possible. For instance, in some scenarios, computer executable instructions stored on a

computer readable medium might also be operable to configure a computer to obtain a limit for presentation of a banner ad to a user. Further variations, as well as additional methods, systems, and computer readable media could also be implemented based on the disclosure set forth herein. Consequently, this summary should be understood as being illustrative only, and not limiting on the scope of any claims included in this application, or any related applications.

BRIEF DESCRIPTION OF THE DRAWINGS

- [0018] FIG. 1 depicts a system which can be used for delivering targeted advertisements to a particular web user.
- [0019] FIG. 2 depicts a flowchart of steps which can be used when invoicing targeted internet advertisements.
- [0020] FIG. 3 depicts a computerized interface which a business can use to customize an advertising campaign.
- [0021] FIG. 4 depicts an interface which can be used to determine price for different geographic areas for an advertisement in a geographically targeted advertising campaign.
- [0022] FIGS. 5a and 5b depict interfaces which can be used in the creation of a virtual web page.

DETAILED DESCRIPTION

- [0023] This disclosure sets forth various techniques and tools which can be used in the context of advertising on the internet. While this disclosure, by way of illustration, sets forth the best mode contemplated by the inventors for utilizing the tools and techniques described herein, this disclosure is not intended to be limiting on claims which are included in this application, or on claims included in

other related applications. Consequently, the disclosure of this application should be understood to be illustrative only, and not limiting.

- [0024] Referring now to figure 1, that figure depicts a system which can be used for delivering targeted advertisements to a particular web user [101]. In some instances this delivery of targeted advertisements might incorporate the configuring of a website [102] such that, when a web user [101] accesses the website [102] (e.g., through an internet browser), the website [102] could provide information regarding the web user [101], along with a request for a targeted ad, to a targeting software application (referred to for convenience as “targeting software”) [103]. The targeting software [103] could then use the information provided by the website [102] in combination with a world database [104] to obtain a location for the web user [101]. For example, in some implementations, the world database [104] might comprise information to convert between IP addresses and locations. As a concrete example of such a conversion, the world database [104] might include a first table of IP addresses assigned to various internet service providers (ISPs), and a second table of the locations of the various ISPs included in the first table. In such a case, the conversion could be made by first determining the ISP associated with the web user [101], and then determining the location associated with the ISP.
- [0025] Once the targeting software [103] has obtained the location for the web user [101], the targeting software [103] would retrieve targeted ad content from a website content database [105] to be returned to the website [102] which was accessed by the web user [101]. As a concrete example of how such retrieval of targeted ad content might take place, consider a situation in which a business has decided that web users [101] located within a ten mile radius of the business’ primary location should receive a particular targeted advertisement. In such a case, the targeting software [103] might calculate the distance between the location for the web user [101] (as obtained using the world database [104]), and the primary location of the business. Only if the distance calculated was less than the ten mile radius specified by the business would the targeting software [103] retrieve the business’ advertisement from the website content database [105]. Once the appropriate advertisement is retrieved, the targeting software [103]

could return that advertisement to the website [102], where it would be displayed for the web user [101].

[0026] Of course, it should be understood that the description set forth above is intended to be illustrative only of how a system such as shown in figure 1 can be used to provide targeted advertisements to web users [101], and should not be treated as limiting on any claims, whether included in this application or any related applications. For example while the description set forth above focused on determining a location for a web user [101] and providing a targeted advertisement based on that location, the techniques such as described above can also be used to target advertisements based on other information. For example, in some instances, a business might wish to target advertisements based on demographic information, rather than based on location. In such a case, the targeting software [103] might be configured to correlate the information in the world database [104] with the demographic information used as a filter by the business. For instance, if the world database [104] indicated that a web user [101] was located in a location where the average age was 25, and the business wished to have its advertisements displayed to web users in the 18-36 age group, the targeting software [103] could select and retrieve the advertisement from the website content database [105] based on the determined age for the web user. Other attributes (e.g., median household income, home value, education level, or family size) could also be used to target advertisements. Of course, it should be understood that the description of the use of such alternative filters is not meant to imply that all such filters can be used in the alternative only. Indeed, some advertisers might wish to apply multiple filters to determine what content should be presented to a web user [101] (e.g., a business might wish to provide only advertisements to individuals living in a 25 mile radius of its primary location, and also to provide different advertisements to different web users [101] based on education level, and not to provide any advertisements at all to web users [101] with incomes greater than \$250,000/year). Also, it should be understood that, while the description above focused on deriving information from the IP address of a web user [101], that information could be derived using other techniques as well, such as cookies, logins, or user identifications. Thus, the discussion of alternate targeting criteria set forth above should be understood to be illustrative

only of various implementations of targeted advertising, and not limiting on the scope of claims included in this application or other related applications.

[0027] Further, it should be understood that there are numerous variations on the discussion set forth above even in the particular context of geographic targeting based on location interpreted from IP address. For example, in some implementations, there might be a filtering process performed by the targeting software [103] to avoid spurious location determinations. Concretely, to avoid identifying web users [101] who use America Online as an ISP as all being located in Virginia (the location of the server used by America Online for its customers in the eastern half of the United States), the targeting software [103] could filter IP addresses associated with America Online, and only allow the geographic targeting to take place for web users [101] having an IP address associated with an ISP which is known to have a client base with a location that can be accurately determined based on IP address. Further, different implementations of targeted advertising might utilize different formulae and techniques for performing their targeting matches. For example, the inventors have found that the code set forth below in table 1, when used for determining the distance between locations has unexpectedly superior results compared with other known algorithms in terms of speed of calculation when run on a PC using MSSQL. Such speed is important because any delay in providing a business' advertisement to a web user [101] (especially when multiplied by thousands of users who might view a website [102] in a day) could mean significant frustration for a user trying to access a page which includes the advertisement, and significant lost revenue for the business.

```

Begin
  -- dLong represents the differences in longitudes
  -- while dLat is the difference in latitudes
  declare @dLong float
  declare @dLat float
  -- To keep the calculation easier to understand,
  -- we have simplified it by computing it by parts.
  -- This value temporarily holds the value of the
  -- first calculation.
  declare @temp float
  -- Convert the decimal degrees to radians
  set @lat2 = radians(@lat2)
  set @lon1 = radians(@lon1)
  set @lat1 = radians(@lat1)
  set @lon2 = radians(@lon2)
  -- Compute the degree differences
  set @dLong = @lon2 - @lon1
  set @dLat = @lat1 - @lat2
  -- Compute the first part of the equation
  set @temp = (square(sin(@dLat/2.0))) + cos(@lat2) * cos(@lat1)
  *
  (square(sin(@dLong/2.0)))
  -- Return the approximate distance in miles
  -- Note that 3956 is the approximate median radius of the
  Earth.
  return (2.0 * atn2(sqrt(@temp), sqrt(1.0-@temp)))*3956.0
end

```

Table 1: Distance Calculation Code

[0028] Of course, it should be understood that the variations and specific techniques discussed above are intended to be illustrative only.. For example, while the code set forth in Table 1 has been found to have unexpectedly superior results compared to other distance calculation algorithms, that code, and the techniques included therein, should not be treated as limiting on the scope of claims included in this or related applications. Thus, while the best way known to the inventors at this time for practicing the invention does include the calculation set forth above, other calculations could be substituted, or entirely different methods of screening (e.g., demographic screening based on determined location or cookies) are contemplated by the inventors and could be implemented by those of ordinary skill in the art without undue experimentation. Further, other methods of targeting advertisements could also be used. For example, if a business wishes to ensure that only web users [101] who are interested in the products or services provided by the business see advertisements paid for by the business, the business might, either in addition to, or as an alternative to, the techniques set forth above, have its advertisements restricted to display on related websites. For example, if a business sells linens, then that business might wish to have its advertisements

displayed only on websites which feature related products or services (e.g., bedroom furniture, or cleaning services). Thus, by incorporating information on the website [102] being visited by a web user [101], the targeting software [103] could add a new dimension of targeting to the techniques described above. Of course, other different and obvious variations are contemplated and could be implemented by those of ordinary skill in the art without undue experimentation.

[0029] While the discussion of figure 1 focused on the potential for a system as shown in that figure to be used for providing targeted internet advertising, it is also possible that a system as shown in figure 1 could be used to support a variety of methods for determining payment for such advertising. For example, as set forth in figure 1, when a web user [101] accesses a website [102], the website [102] provides information regarding the web user [101] to the targeting software [103], and the targeting software [103] then uses that information to obtain an appropriate ad which is returned to the website [102]. It is possible that, during this process, the information transferred between the components depicted in figure 1 (e.g., the website [102], targeting software [103], and website content database [105]) might be stored in a record which could then be logged for invoicing purposes. Such a record might include the IP address of the web user [101], an ID of the ad which was retrieved from the website content database [105], the time the ad was provided to the web user [101], any payment plans associated with the ad retrieved from the website content database [105], the uniform resource locator (URL) of the website [102], any actions taken by the web user [101] with the ad (e.g., clicking), or other information as might be appropriate to a particular scenario. With such a record, it is possible to create an appropriate charge for each ad access.

[0030] One technique which can be used to charge for ad accesses using a record of the type described above is set forth in figure 2. On a high level, figure 2 depicts a process which can be deployed in the context of a business which allows ads to be specifically purchased and provided in a variety of manners, such as targeted provision of ads, which are displayed only to web users within a specific geographic region, as well as general provision of ads, in which ads are provided to web users regardless of the web users' geographic location. Further, as set

forth in figure 2, not only are ad accesses potentially purchased differently (i.e., geographically targeted, versus generally available), they are charged differently as well (i.e., non-geographically targeted ads are charged on a payment per click basis, while geographically targeted ads are charged on a payment per unique visitor basis). When examining the process set forth in figure 2, it should be understood that those methods of charging, as well as the associated methods of purchasing advertisements are provided for the sake of illustration only, and that other methods of charging and purchasing advertisements, as well as other relationships between provisioning of advertisements and invoicing of advertisements are contemplated by the inventors and could be implemented by those of ordinary skill in the art without undue experimentation. Consequently, the discussion of figure 2 should not be treated as limiting on the scope of claims included in this application, or any related application.

[0031] Turning now to the specific steps depicted in figure 2, that figure shows a process for invoicing advertisements which starts [201] with running a check of the payment method for a particular ad access [202]. As set forth previously, the process of figure 2 can be used for payment methods including payment per unique visit (PPUV) and cost per click (CPC). However, a business utilizing the process of figure 2 to generate charges might wish to also offer other types of payment scheme, such as cost per thousand clicks (CPM), or cost per action (CPA) for advertisements. In such a scenario, if an ad was purchased using a scheme which is not supported by the particular steps shown in figure 2, the payment method check [202] would have a no match result, and the process of figure 2 would return to the start [201], and proceed to calculate the charge for the next ad access, if any. Thus, if a particular business wishes to have a first ad invoiced on a PPUV basis, and a second ad invoiced on a CPM basis, such variation can be accommodated in the process shown in figure 2 by setting the payment method for the different ads accordingly.

[0032] Continuing with the description of the invoicing method depicted in figure 2, if the ad access being processed is associated with an invoicing method supported by figure 2, the method proceeds to check previously processed ad accesses to see if there is a match with the access being invoiced [203]. Such a check might

comprise examining if a previously processed ad access and the ad access being invoiced match in terms of IP address of user who accessed the ad, website from which the ad was accessed, and ID of the ad which was accessed, though it should be understood that different types of checks to determine a match could also be used (e.g., some methods might check for a match based only on the ID of the ads). Once the check [203] is completed, if there is a match between the ad access being invoiced and a previously processed ad access, the method shown in figure 2 continues by checking the difference in time between the ad access being invoiced, and the previously processed matching access(es) [204]. If there was a matching ad access within a threshold period of the ad access being invoiced, then the process shown in figure 2 returns to the start [201] and does not add any charge for the duplicate ad access. Alternatively, if there is no matching ad access (or no matching ad access which was not discarded as a duplicate) within the threshold period, then the invoicing process continues as if no match had been found in the initial check for a match [203].

[0033] If no match is found when comparing the ad access being invoiced with the previous ad accesses [203], or if the step of checking the time difference [204] revealed no previous access within the threshold, the process of figure 2 continues with a check of the range [205] set by a business when purchasing the ad associated with the ad access being invoiced. As an explanation of the significance of this range checking step [205], recall that figure 2 depicts a process which can be used by a business which sells geographically targeted internet advertisements on a payment per unique viewer basis, and non-geographically targeted internet advertisements on a cost per click basis. As a technique for accommodating this, in the method of figure 2, if the range chosen by the business at the time of ad purchase is zero, then the ad is determined to be chargeable on a cost per click basis [208], rather than on a payment per unique visit basis [207]. Consequently, the process shown in figure 2 can be used to directly determine charges for two types of payment method, rather than requiring invocation of a separate process for separate payment (though such a separate process could also be used if the payment method check [202] showed no match).

[0034] Accordingly, if the range check step [205] shows that the business purchased the ad on a cost per click basis, the ad is invoiced as such [208], and the process returns to the start [201] with the next ad to be invoiced. Alternatively, if the range check step [205] shows that the ad being invoiced was purchased on a PPUV basis (i.e., has a range greater than zero), the process continues by checking for a match in the uniqueness period of the ad [206]. This check for a match during the uniqueness period [206] actually includes two conceptually separate comparisons. First, there is a comparison to determine whether the ad access being invoiced is identical to an ad access which was previously invoiced. This comparison could mirror the match check performed previously [203] (in which case a separate check might not be performed at all, but instead a match flag might be set based on the results of the previous check [203]), or could be based on different or additional criteria (e.g., if the previous match check was based only on the ID of the ad served, the check included in the check for a match within the uniqueness period [206] might be based on additional information such as the website the ad was served to, and the IP address of the user who accessed the ad). In addition to the check to see if any of the ad accesses previously processed match the ad access for which a charge is generated, the check for match within the uniqueness period [206] also verifies that no matching ad accesses had taken place within a specified time frame. If there is not a match within the specified time frame, the process treats the ad access being processed as a unique visit, and charges the advertiser accordingly [207]. Otherwise, the ad access being processed is determined to be a non-unique visit, and the process returns to the start [201], so that the charge for the next ad access can be calculated.

[0035] Of course, it should be understood that the description of a technique for invoicing ad accesses as depicted in figure 2 is provided for the purpose of illustration only, and that many variations, both from and within that method are contemplated by the inventors and could be implemented by those of ordinary skill in the art without undue experimentation. For example, within the context of the method depicted in figure 2, a variety of times could be used for the time threshold in the initial check [204] ("threshold time"). For instance, in some scenarios, the threshold time might be set at a relatively short duration, such as a period of a few

seconds (or less, such a period of a few microseconds), which would result in more ad accesses being potentially chargeable, but could also result in charges for spurious accesses (e.g., those generated by automated agents, or “bots”). Alternatively, the threshold time might be set at a longer interval (e.g., four hours), which would result in fewer ad accesses being potentially chargeable, but would also avoid charging for spurious accesses. Similarly, the period used for checking a uniqueness match [206] (“uniqueness period”) could also be customized according to the requirements of a particular scenario (e.g., the uniqueness period could be relatively large (e.g., one or two weeks), or small compared to the threshold time, or could even be the same as the threshold time). Similarly, variations on the relationships of payments could also be made (e.g., in the case where a match is found within the uniqueness period, that ad access could be charged as a click, rather than not charged for at all, as is depicted in figure 2). Additional variations could also be made. Consequently, figure 2, and the discussion thereof, should be understood as being illustrative only of a potential method for generating invoices.

[0036] As an example of some additional variations which could be made on the method depicted in figure 2, and as a demonstration of how they could be specified in an automated manner, consider the interface set forth in figure 3. Figure 3 shows a computerized interface which a business can use to customize an advertising campaign. In the interface of figure 3, the user is presented with a plurality of forms which can be used to specify information regarding the campaign. For example, figure 3 includes a name form [301] which can be used to specify a name for the ad campaign, such that the business purchasing an advertisement can later identify the particular campaign for purposes such as reporting or modification. Figure 3 also includes a types form [302] which can be used to specify the type (e.g., CPC, PPUV, CPA, CPM, etc) of campaign a business wishes to purchase.

[0037] Figure 3 also includes forms which allow a business to limit the numbers of ads which will be served as part of the campaign. The first of these forms, a maximum impression form [303], allows a business to determine how many times an advertisement will be displayed in the course of a campaign. The second of

these forms, a maximum clickthrough form [304] allows a business to specify that, after an advertisement has been clicked on a certain number of times, that advertisement will no longer be served in the campaign. Similarly, the interface of figure 3 also allows a business more fine-grained control of who an ad will be presented to. For example, there are forms [305][306] which allow a business to specify that an ad will not be presented more than a set number of times within a given period (e.g., after a user has seen the ad three times in a given week, do not present the ad to that user again during that week). To provide a concrete example of how such forms could be used by a business to control the cost of a particular ad campaign, consider a scenario in which a business is purchasing advertisements which are to be charged at a first rate if a user simply views a website containing the ad, or a second rate if a user actually clicks on an ad. In this type of a situation, the business might use the maximum impression form [303] and maximum clickthrough form [304] to make sure that the charges for the campaign do not exceed a specified budget. Similarly, to maximize the impact of the campaign, the business might use the fine tuning forms [305][306] to ensure that a user will not be presented with an ad more than 3 times in a week, on the theory that the user is unlikely to make multiple purchases in a week, and that, if the user is going to be inspired by the ad to make a purchase, he or she will likely be so inspired within the first three times the ad is presented. Thus, an interface such as shown in figure 3 can be used to both limit expenditures, as well as to potentially maximize the effect of an ad campaign.

[0038] Of course, it should be understood that such limitations on clickthroughs, views and impressions are not intended to be treated as limitations on claims included in this application, or in any related application. For example, the inventors contemplate that, in some situations, a business would seek to place no limit on the number of views, clickthroughs or impressions (as shown in the fine tuning forms [305][306]), in which case the charges would simply accumulate during the ad campaign. In such a scenario, the charges could be paid on a prepay basis (i.e., the advertiser would provide an initial amount for the ad campaign, and charges would be automatically deducted from that amount as the campaign progressed), or on a postpay basis (i.e., the advertiser would be provided with invoices which would reflect costs already incurred in the campaign). Of course, other payments

methods (e.g., initial prepay combined with subsequent invoices) could also be used. Consequently, the discussion of fine tuning, and associated payment techniques, should be understood as being illustrative only of one possible method for automating an aspect of an ad campaign, and not limiting on any claims included in this application, or any related application.

[0039] Continuing with the discussion of figure 3, the interface shown in that figure can be used, not only to automatically define limits on an ad campaign, but also to define other parameters of a campaign. For example, as shown in figure 3, a business can use start and stop date forms [307][308], to control the duration of a campaign. Similarly, a business can limit the geographic region in which an ad campaign will be presented by using the country form [309], or radius and location forms [310][311], thereby providing additional control of internet users who will potentially view ads in the context of the campaign. Also, as set forth previously, in some cases, a business might wish not only to control who views an ad on the internet, but also what sites that ad is placed on (e.g., a linen store might wish its ad to only be placed on sites which sell home furnishings). The interface of figure 3 allows such preferences to be automatically expressed and accommodated using a category form [312], which allows a business to limit the categories of web pages on which an advertisement will be shown. Of course, it should be understood that the interface shown in figure 3 is not intended to be limiting on the types of interfaces which could be utilized to define a campaign based on this disclosure. Other options, such as filtering based on additional constraints (e.g., household income of viewers, time of day for ad display), or even different types of identification technologies (e.g., cookies, user sign ins, IP based location determination) could also be chosen using such interfaces. Such an option for choosing alternative identification technologies could be useful for a business which has a privacy policy that forbids the use of technologies which could be blocked by web browsers or considered intrusive by web users (e.g., cookies), and which therefore would require the use of technologies which would not suffer those drawbacks (e.g., IP based location and/or demographic determination). Thus, the interface depicted in figure 3 should be understood as being illustrative only, and not limiting.

[0040] Other interfaces could also be used in the creation of ad campaigns for targeted internet advertising. For example, consider the price calculation interface as shown in figure 4, and the virtual website interfaces as shown in figure 5a and 5b. Specifically, figure 4 shows an interface, including a rate table [401] which can be used to determine price for different geographic areas for an advertisement in a geographically targeted advertising campaign. Similarly, figure 5a shows a virtual website creation interface, including a coupon creation form [501], a map generation template [502], and a banner display section [503], while figure 5b shows a coupon creation interface which could be used, either in conjunction with, or as an alternative with, the interface of figure 5a to create a virtual website. As shown in figure 5b, a coupon creation interface can include a plurality of forms, such as business location forms [504], and coupon duration forms [505]. Using an interface such as shown in figure 5, information can be entered into the coupon duration [505] and business location forms [504], then automatically incorporated into a coupon [501], which could be made part of a virtual website. Similarly, information entered into a form such as shown in figure 5b could also be utilized in conjunction with other utilities (e.g., a map creation utility), and used for automatically creating a virtual web page. Of course, other interfaces, which obtain the information shown in figures 5a-5b, or interfaces which obtain other information for incorporation into a virtual website (e.g., flash files such as movies or games) are also contemplated by the inventors and could be utilized by those of ordinary skill in the art without undue experimentation.

[0041] Once a virtual website has been created, it can then be provided to internet users using a system such as depicted in figure 1. For example in some instances, the same entity which provides the interfaces as discussed previously might also provide hosting for virtual web pages created using those interfaces. In such a case, when a web user [101] clicks on an ad from the website content database [105] which is associated with a virtual web page, the web user [101] might be transported to a page on a site owned and maintained by the entity which provided the interfaces used to create the virtual web page. Thus, by use of the interfaces shown in figures 5a-5b, it is not only possible for a business to eliminate the costs associated with hiring a web designer to create a page, it is also possible to eliminate (or minimize, in the instance where the hosting entity charges a fee) the

costs associated with hosting and maintaining a page. Of course, use of a virtual website is not mandatory in a system such as shown in figure 1, or in an ad campaign such as described herein. It is also possible that a business might host its own web page, or contract with an external entity to host a web page, and, when a web user [101] clicks on an ad from the website content database [105], that user [101] could be transported to the web page hosted by the business or external entity, rather than to a virtual website. Accordingly, the discussion of virtual websites set forth herein should be understood to be illustrative only, and not limiting on the scope of claims included in this application, or other related applications.

[0042] Similarly, the other features, uses, and techniques set forth herein are intended to be illustrative only. Various modifications or divergences on the techniques set forth herein are contemplated by the inventors, and could be implemented by those of ordinary skill in the art without undue experimentation. Thus, the scope of the claims set forth in this and related applications should be interpreted to extend to the entire literal scope of the claims, and their equivalents. Accordingly, we claim:

CLAIMS:

1. A computer readable medium having stored thereon computer executable instructions operable to configure a computer to perform a method for providing content on a computer network comprising the steps of:
 - a) receiving an Internet Protocol ("IP") address of a web user visiting a web page;
 - b) determining a location for said web user based on a lookup operation using said IP address;
 - c) calculating a distance between said location for said web user, and a location associated with a content item;
 - d) comparing said distance with a radius associated with said content item; and
 - e) if said distance is less than or equal to said radius, providing said content item to said web user via said web page.
2. The computer readable medium of claim 1 wherein the computer executable instructions stored thereon are further operable to configure a computer to perform the steps of:
 - a) determining an Internet Service Provider ("ISP") associated with said IP address; and
 - b) screening said IP address using a set of stored data indicating whether an accurate location can be determined for a customer of said ISP using said IP address.
3. The computer readable medium of claim 1 wherein calculating a distance comprises utilizing the following equations:
 - a)
$$I = (\sin((\text{lat}_1 - \text{lat}_2)/2))^2 + \cos(\text{lat}_2) * \cos(\text{lat}_1) * (\sin((\text{lon}_2 - \text{lon}_1)/2))^2;$$
 - b)
$$D = 2 * \text{atn2}(\text{sqrt}(I), \text{sqrt}(1-I)) * R;$$

wherein lat_1 is the radian measure of the latitude of the geographic location for said web user, lon_1 is the radian measure of the longitude of the geographic location for the web user; lat_2 is the radian measure of the latitude of the geographic location associated with said content item; lon_2 is the radian measure of the geographic location associated with said content item; R is the radius of the earth; and D is the distance between the geographic location for the web user and the geographic location associated with the content item.
4. The computer readable medium of claim 1, wherein the computer executable instructions are further operable to configure a computer to compare a set of

demographic data associated with said web user with a set of demographic data associated with said content item.

5. The computer readable medium of claim 4 wherein said set of demographic data associated with said user is determined by performing a second lookup operation using said IP address.
6. The computer readable medium of claim 1 wherein said content item comprises an advertisement.
7. A computer readable medium having computer executable instructions stored thereon operable to configure a computer to:
 - a) obtain a plurality of records, said plurality of records comprising:
 - i) a current record; and
 - ii) a previously processed record;
 - b) determine if said previously processed record matches said current record;
 - c) if said previously processed record matches said current record, determine if a timestamp for the previously processed record is within a first threshold period of a timestamp for the current record;
 - d) if the timestamp for the previously processed record is different from the timestamp for the current record by more than the first threshold period, determine if the timestamp for the previously processed record is different from the timestamp for the current record by more than a second threshold period; and
 - e) if the timestamp for the previously processed record is different from the timestamp for the current record by more than both the first threshold period and the second threshold period, or if the previously processed record does not match the current record, add a unique visit charge to an invoice amount.
8. The computer readable medium of claim 7 wherein the first threshold period is four hours.
9. The computer readable medium of claim 8 wherein the second threshold period is one week.

10. The computer readable medium of claim 7 wherein the computer executable instructions are further operable to configure a computer to:
 - a) determine if the current record is associated with an ad campaign having a range value of zero; and
 - b) if the current record is associated with an ad campaign having a range value of zero, and
 - i) the previously processed record does not match the current record, or
 - ii) the timestamp for the previously processed record is different from the timestamp for the current record by more than the first threshold period;

add a cost per click charge to the invoice amount.
11. The computer readable medium of claim 7 wherein the computer executable instructions are further operable to configure a computer to determine a payment method for an ad campaign associated with the current record.
12. The computer readable medium of claim 7 wherein determining if said previously processed record matches said current record comprises comparing said previously processed record and said current record in terms of:
 - a) IP address of a web user;
 - b) identification of an ad provided to a web user; and
 - c) website on which said ad was provided to said web user.

13. A computer readable medium having stored thereon computer executable instructions operable to configure a computer to:
 - a) obtain a banner ad and associated clickthrough page;
 - b) obtain a geographic area for display of said banner ad, said geographic area comprising:
 - i) a location; and
 - ii) a radius;
 - c) obtain a payment method for charges associated with the display of said banner ad and said clickthrough page;
 - d) combine said banner ad, said clickthrough page, said geographic area and said payment method into an ad campaign;
 - e) provide said banner ad and said clickthrough page to a plurality of web users in accordance with said ad campaign.
14. The computer readable medium of claim 13, wherein obtaining an associated clickthrough page comprises obtaining a URL for said clickthrough page.
15. The computer readable medium of claim 13, wherein obtaining an associated clickthrough page comprises defining a virtual web page, said virtual web page comprising:
 - a) a coupon;
 - b) a business name; and
 - c) a business location.
16. The computer readable medium of claim 15 wherein defining a virtual web page comprises obtaining information for inclusion in said virtual web page via a web-based interface presented to a user.
17. The computer readable medium of claim 13 wherein the computer executable instructions are further operable to configure a computer to obtain a limit for presentation of said banner ad to a user.

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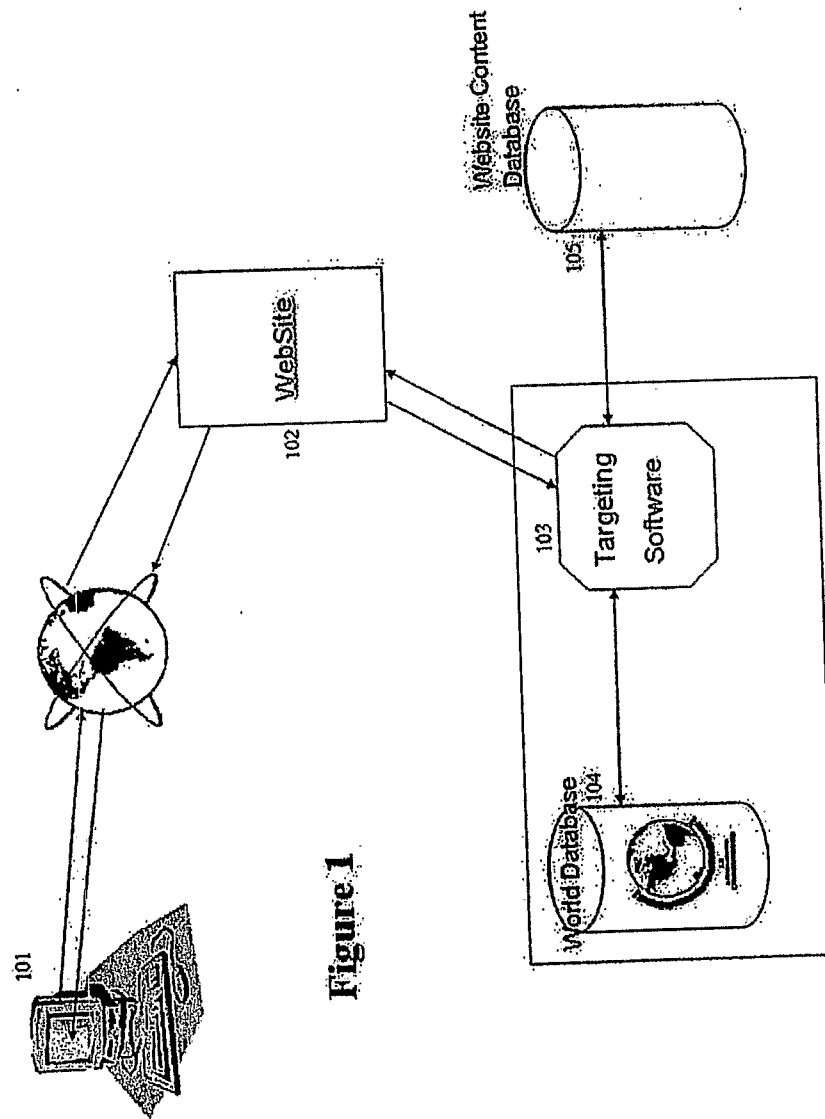
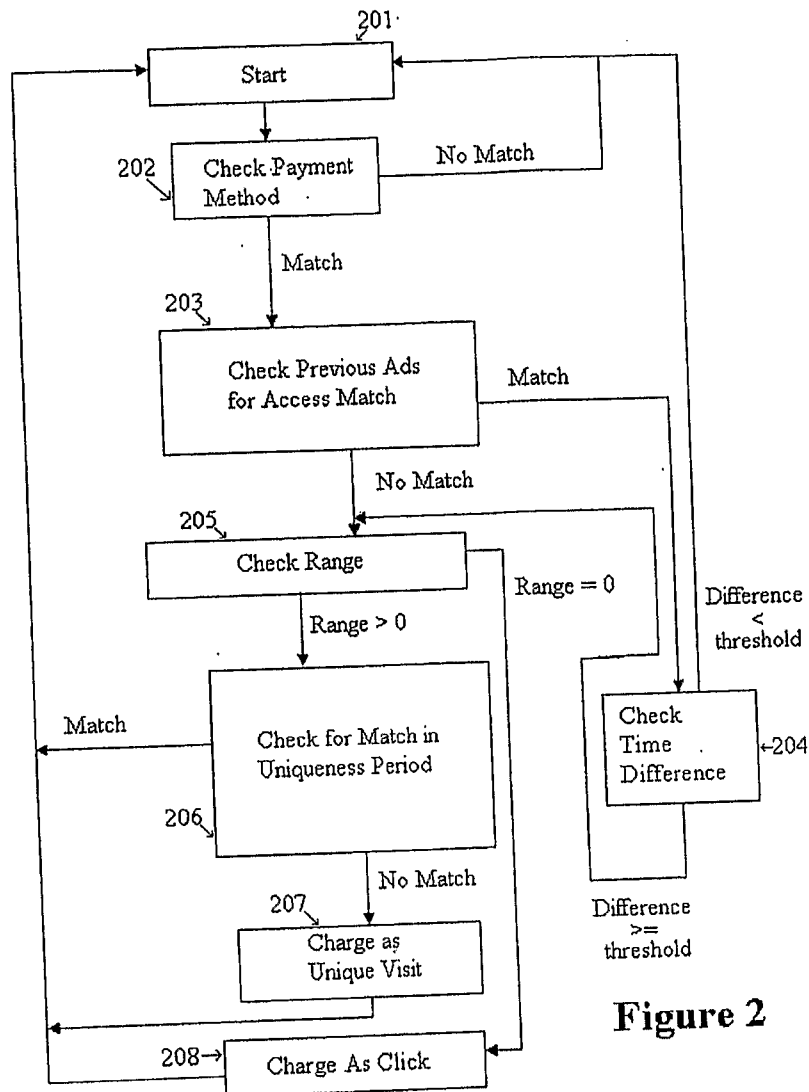


Figure 1

**Figure 2**

Ad Campaign Name

Ad Campaign Type

Max Impressions

Max Click Throughs

Limit Ad Views By Same User To: 305

Pay Per Unique Visitor Mileage Campaign

Pay Per Click - \$/Click

1000000

100000

No Limit ☐ per ☐ No Time Limit ☐

Select Users Countries you want your ads shown to.

If you only select 1 country you will have the option of choosing a city and defining the radius in miles to display the AD to.

AFGHANISTAN
ALBANIA
ALGERIA
AMERICAN SAMOA
ANDORRA
ANGOLA
ANGUILLA
ANTARCTICA
ANTIGUA AND BARBUDA

Range In Miles From City (Min 10) SET 25

Campaign Start Date 9/1/2006

Campaign End Date 12/30/2006

From Location: LOS ANGELES CA US

Clear

310

307

308

309

306

311

312

Update Campaign

Run of Network

Ads and Entertainment
Automotive
Business
Career & Jobs
Collectibles
Dining
Digital Photography
Education
Electronics & Photo

Figure 3

128 bit encryption), or via fax or postal mail, and start your campaign. The ad will run until your balance reaches zero. You can reactivate it by making another deposit. The minimum deposit is \$100. The rate charged will be dependent upon the radius in miles/km you select and the size of the ad. The wider the radius the lower the cost per unique visitor.

BILL TO: ☒ Same as Above
C/O Name:

ABC Company
Address:
123 Main Street
Address:
Address:
Address:

City: Los Angeles
State: California
or Province:
Zip Code: 90009
Country: UNITED STATES
Notes: Client would like to be invoiced.

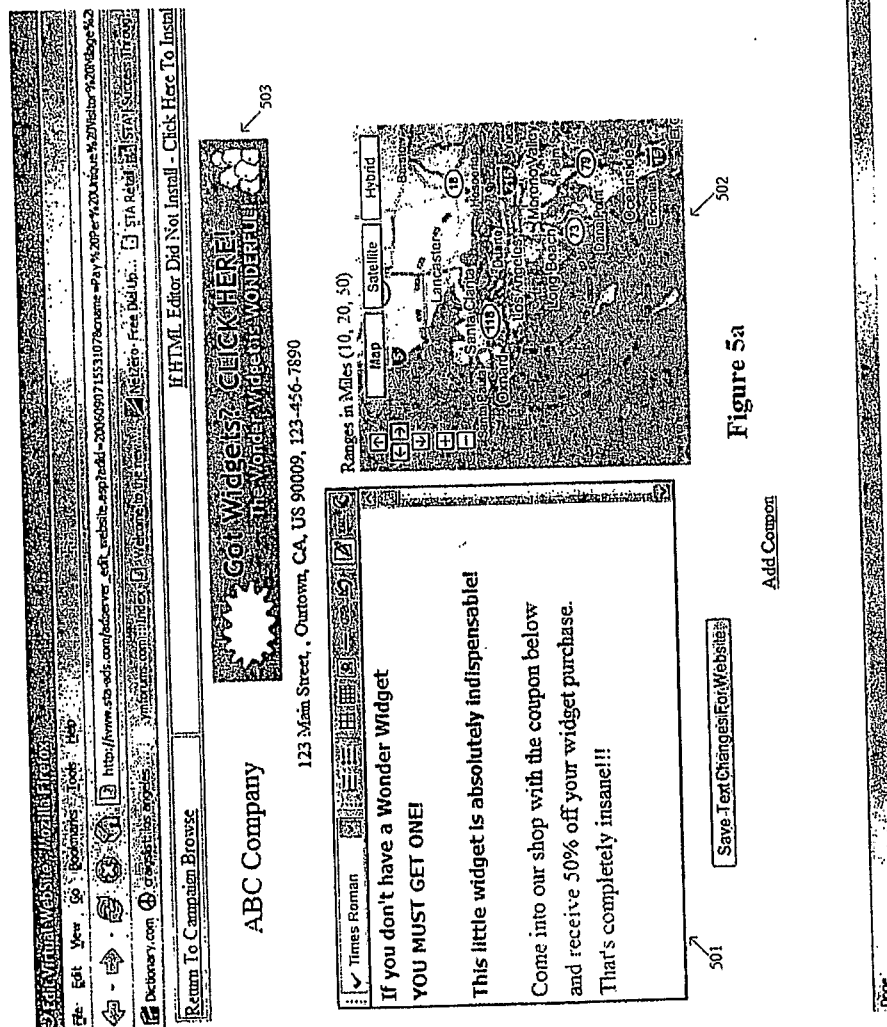
Display Table in Currency: US: Dollar (USD)

Ad Size/ Miles Radius Rate Table - Cost Per Unique Visitor Based on Ad Size

Miles Size	10	25	50	75	100	125	150	200	300	400	500	750	1000
120x60	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
120x90	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
180x150	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
240x60	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
480x60	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
300x250	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
180x600	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
300x200	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
480x60	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
180x150	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
720x300	1.5	1.25	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1

Figure 4

SUBSTITUTE SHEET (RULE 26)



STA
the next generation of advertising

Advertisers
Publishers
Advertisers
Advertisers

Complete the information requested below to create a coupon. Once you have entered the information - click on PREVIEW to view and edit the coupon.

Please inform your staff to honor the coupon you submit.

Coupon Designer

Company Name: ABC Company
Address: 123 Main Street
City: Los Angeles
State: CA
Zip: 90009
Phone: 123-456-7890
Fax: 123-456-7890

Your Company Name
Valid 6/12/2006 - 7/1/2006
What the coupon is for, a detailed description of what you want views to see

50% OFF WIDGET COUPON

Bring this coupon into our shop, and receive 50% off your widget purchase!

Coupon Code: 505
Coupon End Date: 7/1/2006

Figure 5b