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# RESERVATION MODEL FOR REAL-TIME BIDDING BASED ADVERTISING SYSTEM

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## RESERVATION MODEL FOR REAL-TIME BIDDING BASED ADVERTISING SYSTEM

### TECHNICAL FIELD

This disclosure generally relates to advertising.

### BACKGROUND

The Internet provides access to a wide variety of resources. For example, video and/or audio files, as well as web pages for particular subjects or particular news articles, are accessible over the Internet. Access to these resources presents opportunities for other content (e.g., advertisements) to be provided with the resources. For example, a web page can include slots in which advertisements can be presented. These slots can be defined in the web page or defined for presentation with a web page, for example, along with search results. Slots can be allocated to advertisers through a reservation system or an auction. For example, advertisers can provide bids specifying amounts that the advertisers are respectively willing to pay for presentation of their ads. In turn, a reservation can be made or an auction can be performed, and the slots can be allocated to advertisers according, among other things, to their bids and/or the relevance of the advertisement to content presented on a page hosting the slot or a request that is received for the advertisement.

### SUMMARY

In general, a technique is provided to enable switching between a real-time bidding campaign and a reservation campaign. The technique can enable incorporating reservation

guarantees into a real-time bidding campaign, and switching between campaign delivery modes, with minimal changes to campaign management workflow.

## DESCRIPTION OF DRAWINGS

FIG. 1 is an example environment that enables switching between a real-time bidding campaign and a reservation campaign.

## DETAILED DESCRIPTION

FIG. 1 is a block diagram of an example environment 100 for providing advertisements to a user. The example environment 100 includes a network 102, such as a local area network (LAN), a wide area network (WAN), the Internet, or a combination thereof. The network 102 connects websites 104, user devices 106, advertisers 108, publishers 109, an advertisement management system 110, and a search system 112. The example environment 100 may include many thousands of websites 104, user devices 106, advertisers 108, and publishers 109. The advertisement management system 110 may be used for selecting and providing ads in response to requests for content.

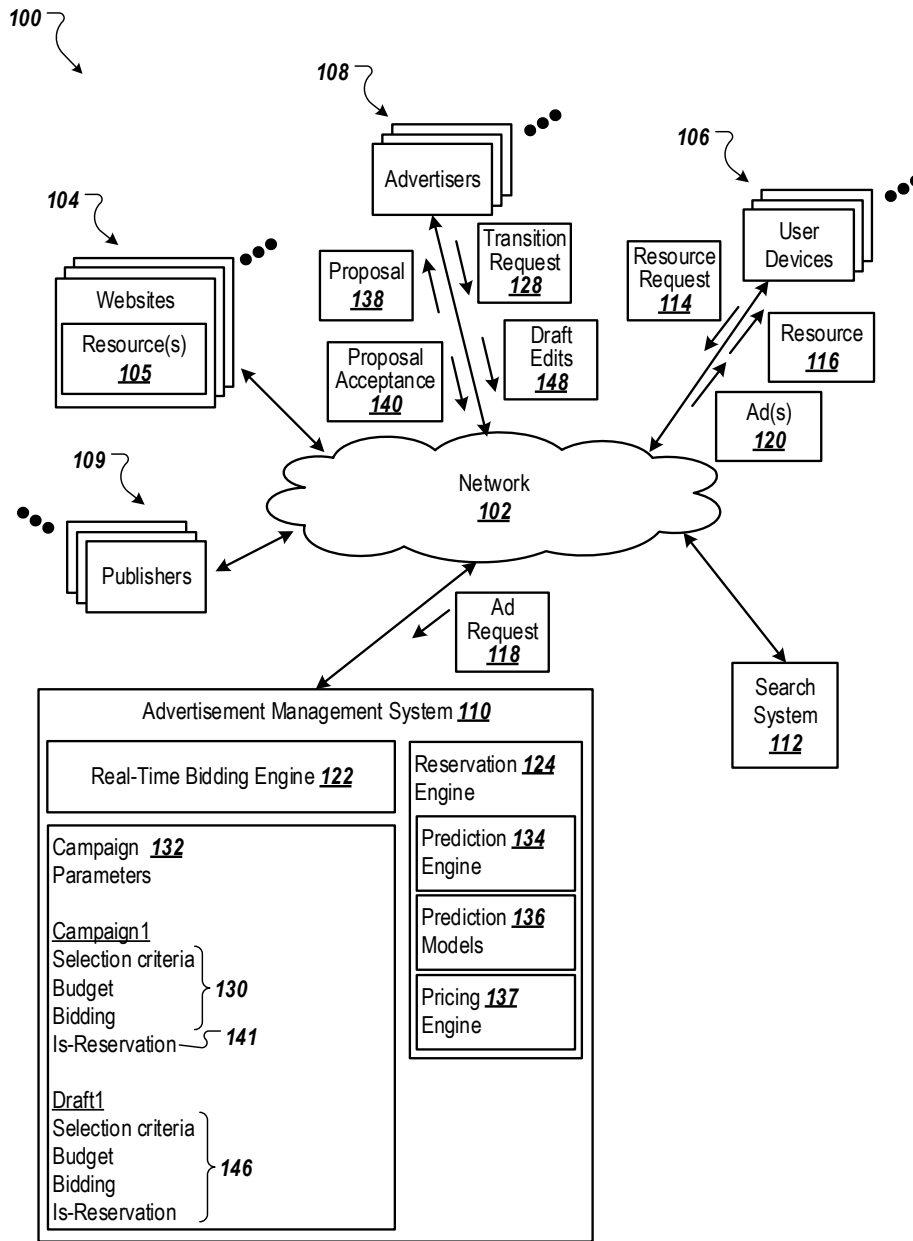


FIG. 1

A user device 106 can submit a resource request 114 for a resource 105 from a website 104. In turn, resource data 116 representing the requested resource 105 can be provided to the user device 106 for presentation by the user device 106. The resource request 114 can also be a search query submitted to the search system 112 for a search results page that is responsive to the search query. The resource data 116 representing the requested resource 105 or the search results page can include data specifying one or more advertisement slot portions of the resource 105 or search results in which advertisements can be presented.

When a resource 105 or search results are requested by a user device 106, the advertisement management system 110 may receive an ad request 118 for an ad to be provided with the resource 105 or search results 118, for display in an advertisement slot. The ad request 118 can include characteristics of the advertisement slot, such as a size of the slot, and/or media types that are available for presentation in the slot. The ad request 118 can also include keywords associated with a requested resource or a search query to facilitate identification of ads that are relevant to the resource or search query. The advertisement management system 110 can select ads that are eligible to be provided in response to the request, such as ads having characteristics matching the advertisement slot characteristics and/or ads that have selection keywords that match the resource keywords or the search query. One or more selected ads 120 can be provided to the user device 106 in association with providing an associated resource 105 or search results page.

The advertisement management system 110 can select ads based at least in part on results of a real-time bidding (RTB) auction. For example, for the eligible ads, a real-time bidding engine 122 can receive bids from advertisers 108 and allocate the slots, based at least in part on the received bids (e.g., based on the highest bidders at the conclusion of the auction). An auction system can work well for advertisers 108 who have a good understanding of a ROI (Return On Investment) that may result from additional spending. Such advertisers 108 may be willing to bid a certain amount for a new opportunity, with an assumption of receiving a positive return on investment. Some advertisers 108 may desire to make changes to campaign properties, such as selection criteria, budget, bidding, etc., on demand.

As another example, some advertisers 108, such as brand advertisers, prefer that the number of impressions allocated to their ads and the price paid for the number of impressions be more predictable than the predictability provided by an auction. An advertiser 108 can increase the likelihood that its ads receive a desired or specified number of impressions, for example, by entering into a reservation agreement with a publisher 109, where the agreement requires the publisher 109 to provide at least a threshold number of impressions (e.g., 1,000 impressions) for a particular ad provided by the advertiser 108 over a specified period (e.g., one week). In turn, the advertiser 108, publisher 109, or both parties can provide data to a reservation engine 124 that enables the advertisement management system 110 to facilitate satisfaction of the agreement. For example, an advertiser 108 can upload an ad and authorize the advertisement

management system 110 to provide the ad in response to requests for ads corresponding to the website 104 of the publisher 109. Similarly, the publisher 109 can provide the reservation engine 124 with data representing the specified time period as well as the threshold number of impressions that the publisher 109 has agreed to allocate to the ad over the specified time period. Over time, the reservation engine 124 can select ads based at least in part on a goal of allocating at least a minimum number of impressions to an ad in order to satisfy a delivery goal for the ad during a specified period of time.

Auction-based services and reservation-based services can be offered as separate products by the advertisement management system 110. However, an advertiser 108 may want to switch an ad campaign from a real-time bidding campaign to a reservation campaign. For example, an advertiser 108 may want to put a campaign on “auto-pilot,” and know that a campaign will receive a certain number of impressions without manual monitoring and maintenance of a campaign’s bids. Some advertisers 108 may want to switch a campaign back and forth between an auction-based system and a reservation-based system, and the advertisement management system 110 can provide a “mode switch” that enables such campaign switching. The advertisement management system 110 can enable advertisers 108 to incorporate reservation guarantees into a RTB campaign, with minimal changes to campaign management workflow. An advertiser 108 who may not have known whether to initially create a RTB campaign or a reservation campaign, can convert an existing RTB campaign to a reservation campaign after the RTB has been created.

The advertisement management system 110 can enable an advertiser 108 to enter into a mutually guaranteed delivery contract based on a current state of a RTB campaign. For example, an advertiser 108 can send a transition request 128 to the advertisement management system 110 to transition a campaign (e.g., Campaign1) from a real-time bidding setup to a reservation setup. The reservation engine 124 can identify real-time bidding campaign parameters 130 (e.g., selection criteria, budget, bidding) for the campaign in a campaign parameters data store 132.

The reservation engine 124 can determine whether the campaign qualifies for conversion to a reservation campaign. A RTB campaign can qualify if, for example, a prediction engine 134 of the reservation engine 126 is able to make a satisfactory prediction regarding whether the advertisement management system 110 can deliver on terms of a proposed contract.

Contract terms can be determined, for example, by the prediction engine 134 and can include a promised goal of, for example, a certain number of impressions and/or a promised unit cost (e.g., cost per thousand impressions (CPM)).

The prediction engine 134 can use statistical prediction models 136 to determine a probability of meeting the promised goals. The RTB campaign can qualify if the probability is greater than a threshold, for example. The comparing of the determined probability to the threshold is a risk assessment for determining a confidence of meeting promised goals. A campaign can qualify, for example, if selection criteria for the campaign is broad enough that the prediction engine 134 can determine a satisfactory probability of identifying a promised number of impressions during a campaign period. Selection criteria can include, for example, criteria of interest to brand advertisers, such as country or other geographic areas, demographic criteria, or other criteria of an audience the advertiser 108 would like to reach. In some implementations, selection criteria includes keyword criteria.

The reservation engine 124 includes a pricing engine 137 that can determine pricing terms for a proposed reservation campaign. The pricing engine 137 can, for example, use static price lists (e.g., rate cards) or can be a dynamic pricing engine that sets pricing based on current and/or forecasted supply and demand.

The advertisement management system 110 can provide proposed reservation terms 138, including the determined pricing, to the advertiser 108. The reservation terms 138 can be terms for which a proposed reservation campaign can deliver 100% of its budget. If the terms are acceptable to the advertiser 108, the advertiser 108 can provide an acceptance 140 to the advertisement management system 110. The reservation engine 126 can create a reservation campaign based on the accepted terms.. An “is-reservation” flag 141 in the campaign parameters data store 132 can be set to “true” for the campaign, to signify that the campaign is now a reservation campaign and not a real time bidding campaign. The other campaign parameters 130 can be made immutable while the contract for the reservation campaign is in force. The creation of the reservation campaign from the real-time bidding campaign serves as a switch of a campaign delivery mode from real-time bidding to an active reservation.

The advertiser 108 can submit a new transition request 128 to switch the reservation campaign back to a RTB campaign. In response to the new transition request 128, the reservation campaign can be reverted back to a real-time bidding status using the previous RTB



campaign parameters 130, with the RTB campaign parameters 130 now being editable by the advertiser 108. The is-reservation flag 141 can be set to “false”, to signify that the campaign is once again a real-time bidding campaign and not a reservation campaign.

As another example, the advertiser 108 can submit a request to edit an active reservation campaign. A campaign can be edited by creating (e.g., forking) a copy of the active campaign. For example, in response to an edit request, the reservation engine 124 can create a draft campaign by creating a copy of the campaign parameters 130 of the active reservation campaign, as shown by draft campaign parameters 146. The advertiser 108 can provide draft edits 148 to the draft campaign parameters 146, which can be applied to the draft campaign parameters 146 to create edited draft campaign parameters. The prediction engine 134 can determine proposed terms for a new campaign using the edited draft campaign parameters. The proposed terms for the new campaign can be provided to the advertiser 108 (e.g., as a new proposal 138). The advertiser 108 can accept the new proposal 138 (e.g., by providing a new acceptance 140). In response to the new acceptance 140, the edited draft campaign parameters can be folded into the campaign parameters 130, and the draft campaign parameters 146 can be discarded. If the advertiser 108 rejects the new proposal 138, the campaign parameters 130 can be maintained.

## ABSTRACT OF THE DISCLOSURE

An advertisement management system can enable an advertiser to switch between real-time bidding and reservation delivery modes. A request is received to transition a campaign from a real-time bidding mode to a reservation mode. A reservation engine determines proposed terms for a reservation contract. An acceptance of the proposed terms is received from the advertiser. The campaign is transitioned from the real-time bidding mode to the reservation mode and a reservation contract is established between the advertisement management system and the advertiser, with campaign parameters made immutable for the duration of the contract.