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Load balancing of phone traffic generated from web interactions

ABSTRACT

Click-to-call actions, e.g., provided in online advertisements, enable users to call businesses by clicking on a link. When a number of users simultaneously perform click-to-call actions, such simultaneous requests can outstrip the capacity of a business to respond to queries. The techniques of this disclosure detect click-to-call attempts in excess of the capacity of a business and distribute caller load amongst multiple businesses that offer similar goods or services.

KEYWORDS

- Load balancing
- Click-to-call
- Click-to-chat
- Phone traffic
- Online ads

BACKGROUND

When a user searches for goods or services using a search engine, aggregator, or other application, the names of relevant businesses or service providers are returned as results, including click-to-call or click-to-chat buttons. When a number of users simultaneously attempt click-to-call (or click-to-chat) actions, such requests can outstrip the capacity of a business to respond to queries. This results in poor customer experience, impacting both the business/service provider as well as the search engine.

DESCRIPTION

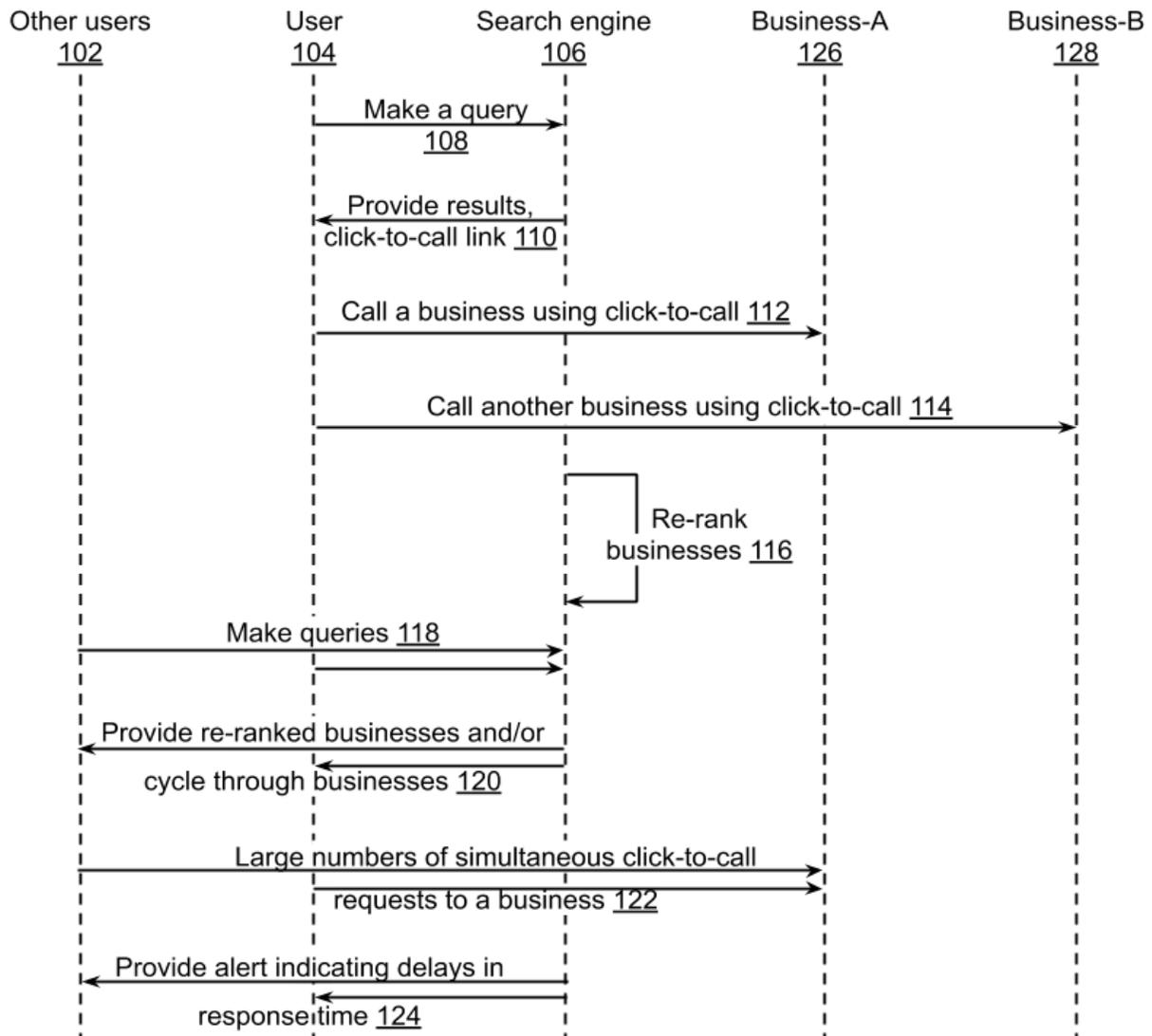


Fig. 1: Load balancing of phone traffic generated from web interactions

Fig. 1 illustrates load balancing of phone (or chat) traffic generated from web interactions, per techniques of this disclosure. A user (104) makes a query (108) using a search engine (106). The user can also make a query using an application, a virtual assistant, an aggregator service, a third-party mediator, etc. The search engine provides results (110) that include names of businesses or service providers (126, 128) that can fulfill the user’s query. The

search engine also provides click-to-call or click-to-chat action buttons that the user can use to directly communicate with the service provider.

The user calls a first business or service provider (112) using the corresponding click-to-call button. If the user calls another (similar) business (114) within a predefined time window, e.g., due to not getting a response from the first business, it is an indication that the first business was unreachable. Further, the call to the other business is an indication that the capacity of the first business to respond to queries has been exceeded. Over time, a model is generated for the demand-versus-capacity of a service provider as a function of time, day, season, etc. based on such data. Such a model can be used to determine the level of availability and to predict the likelihood that a service provider is unavailable for a particular click-to-call action.

The lack of response from a business being a signal of demand in excess of the capacity of that business, the search engine re-ranks search results based on the availability of businesses (116). The re-ranking of businesses distributes the caller load amongst businesses offering similar goods and services. When the user or other users (102) make further queries (118), the search engine provides the businesses in re-ranked order (120), such that the calls are directed to businesses that are able to respond to user queries at the time of the call. The search engine can also cycle the order of businesses within the search results to reduce hold time and more evenly distribute caller load amongst the businesses. When a high volume of click-to-call requests occur with a specific service provider (122), an alert can be provided to users informing them that a large number of users are currently interacting with the service provider and that the response time may be longer than usual (124).

In this manner, the techniques of this disclosure distribute user demand amongst multiple similar businesses. The techniques generally apply to marketplaces that are indexed by search

engines, especially in situations where multiple service providers can fulfill user demand and/or there is little or no service provider affinity. Examples of such marketplaces include event or movie tickets, customer service numbers, ride hailing services, contest entry, etc.

CONCLUSION

When a number of users simultaneously perform click-to-call actions, such simultaneous requests can outstrip the capacity of a business to respond to queries. The techniques of this disclosure detect click-to-call attempts in excess of the capacity of a business and distribute caller load amongst multiple businesses that offer similar goods or services.