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Providing Supplemental Content Related to a Keyword in a Conversation

ABSTRACT

Keywords are stored and supplemental content is associated with the stored keywords. Users conduct a conversation by exchanging messages with each other via an online messaging application. Keywords in a message are compared to the stored keywords to determine if related supplemental content is available. If available, the appearance of the keywords is modified to indicate the availability of the related supplemental content. If the keyword is selected by any user engaged in the conversation, the related supplemental content is displayed in a user interface of the online messaging application along with the messages in the conversation.

KEYWORDS

- Online messaging
- Supplemental content
- Targeted advertising
- Keywords
- Enhanced chat
- Texting

BACKGROUND

Online messaging applications allow users to engage in conversations with each other by exchanging messages that include text, images, video, audio, objects such as hyperlinks, and other type of content. For example, two users may use an online messaging application for texting each other about an upcoming vacation. One of the users might suggest going to the beach for vacation.

While conducting the text conversation about the vacation via the online messaging application, it is often the case that the users become interested in accessing supplemental content, e.g., content regarding the beach. For instance, users may wish to find popular beach destinations, airline flight schedules, hotel availability and prices, addresses and coupons for local stores that sell beach attire, and other types of supplemental content.

Typically, in order to locate and access such supplemental content, the user would need to exit the online messaging application, and launch some other application (such as a web browser) to submit a query for the supplemental content. After the user locates the desired supplemental content, the user would then need to exit the web browser and re-launch the online messaging application to resume the text conversation about the vacation. The user can thereafter paste information (e.g., paste a copy of a hyperlink) about the supplemental content within the text conversation, and/or can manually enter some of the information into the text conversation (e.g., manually type a description of the supplemental content, such as price ranges that the user remembers seeing while using the web browser).

The requirement for users of online messaging applications to interrupt their conversations in order to search for and access supplemental information associated with the content of their conversations as illustrated in the example above causes the user experience of the online messaging application to be inelegant or unsatisfactory.

DESCRIPTION

This disclosure describes an online messaging application that determines whether a keyword included in a messaging conversation has supplemental content associated with the keyword. If supplemental content is available, the appearance of the keyword in a user interface of the online messaging application is updated to indicate the availability of the supplemental

content. The user(s) engaged in the conversation can then select the keyword from the user interface, which causes the online messaging application to display the supplemental content along with other messages exchanged during the conversation. Thus, the conversation can continue via the online messaging application without interruption and without the user having to exit the online messaging application in order to launch some other application to search for and access supplemental content.

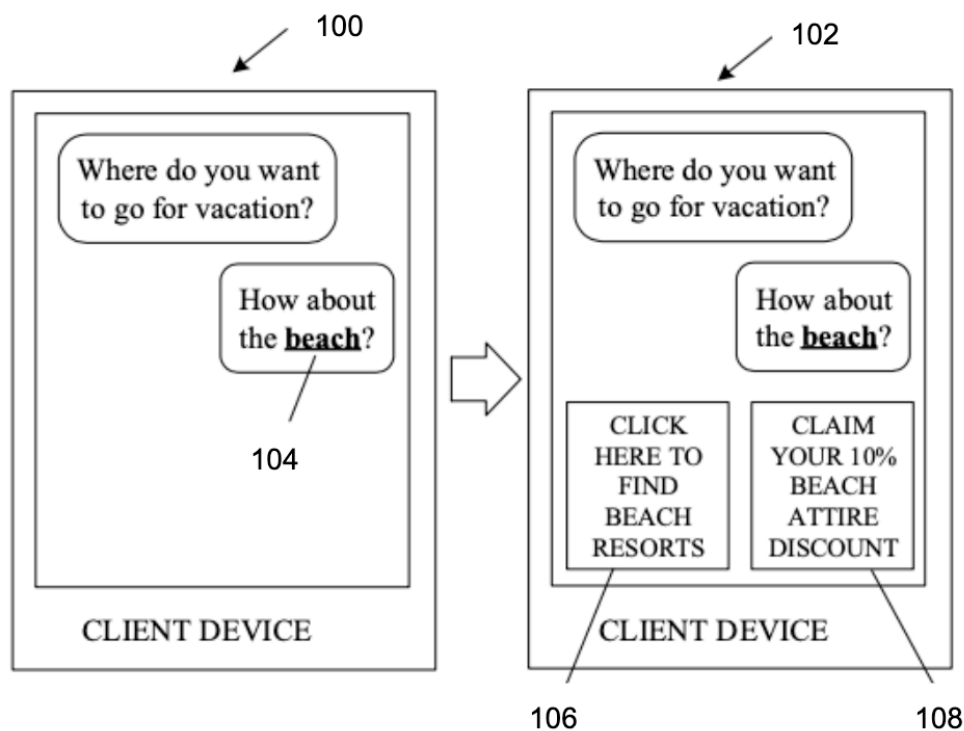


Fig. 1: Highlighting keywords and providing supplemental content

FIG. 1 shows an example use scenario for the online messaging application. In this example, a user of the client device is engaged in a conversation with another user at another client device about a vacation to the “beach.” In a first screenshot (100), a keyword “beach” (104) has been highlighted in the text of a message from one of the users, thereby indicating that supplemental content pertaining to a “beach” is available.

In a subsequent second screenshot (102), one of the users has selected (e.g., by tapping or clicking) the highlighted keyword “beach”, thereby resulting in the online message application displaying first supplemental content (106) and second supplemental content (108) on the user interface, along with the messages exchanged during the conversation. The first supplemental content shown in FIG. 1 is a hyperlink to a list of beach resort web pages, and the second supplemental content is an electronic coupon for a local store that sells beach attire. The first and second supplemental contents can be presented on both users’ client devices or on just one of client devices. If the user(s) select the first supplemental content or the second supplemental content, an application (such as a web browser) is launched to enable the user(s) to view further details of the supplemental content(s).

FIG. 2 is a flowchart of an example process to provide supplemental content associated with keywords in a conversation conducted via the online messaging application.

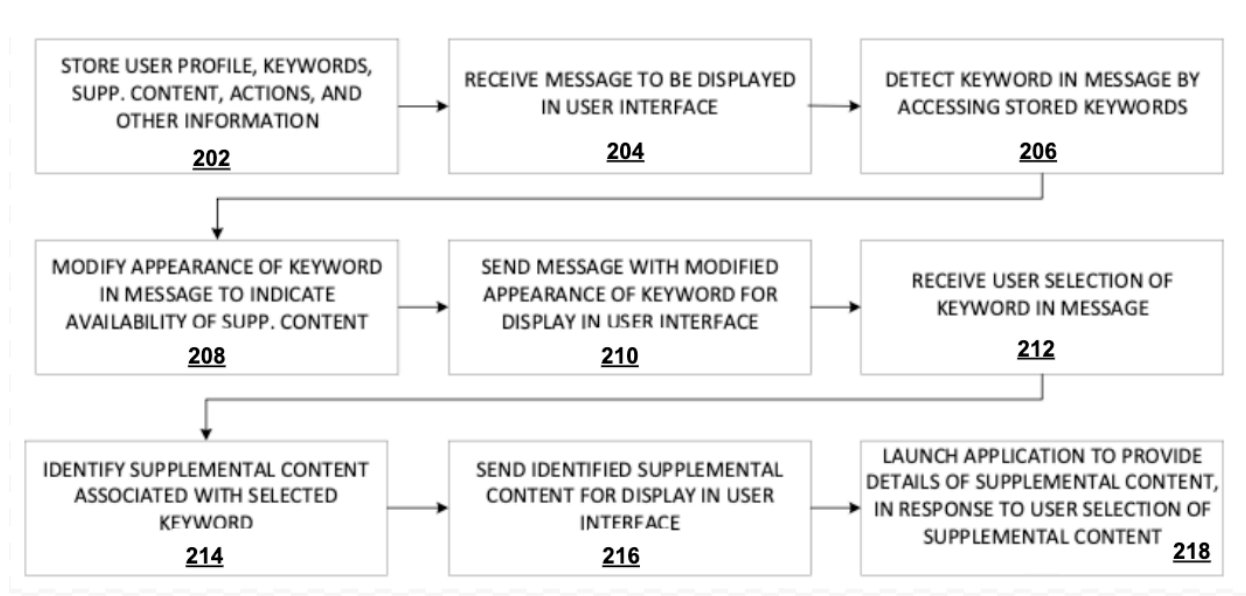


Fig. 2: Process to provide supplemental content in a conversation

Each user of the online messaging application has a user profile, which is stored (202) by the online messaging application. A user profile includes information about the user (such as demographic information etc.) that was provided by the user, and also may include profile information inferred by the online messaging application such as relationships with other persons, frequency or amount of interaction with other users or with business entities, a level of interest in a piece of content, etc.

The online messaging application also stores information to track/log user actions. Examples of actions include adding a connection to another user, sending a message to another user, uploading an image, reading a message from another user, viewing content associated with another user, joining a group or event, providing a review of a product or service, shopping patterns and history, etc.

Data about the user's actions is used to infer interests/preferences of the user, thereby augmenting the information included in the user profile and enabling a more complete understanding of the user preferences for purposes of identifying supplemental content that is more closely customized to the user. For example, if the user is female and has a history of making purchases from a favorite online store, supplemental content in the form of targeted advertising can be presented to the user (e.g., coupons for discounted women's beach attire at the user's favorite online store).

Keywords are also stored. Examples of keywords or other objects that are treated as keywords and that are stored include text data (e.g., words or phrases), image data (e.g., emojis, stickers, photos, GIFs, etc.), video data, audio data (e.g., voice messages, music, etc.), and so forth.

Each stored keyword is associated with supplemental content that is also stored. For instance, a storage arrangement can include keyword fields that each contain a keyword, and content fields that contain supplemental content and that are pointed to by or otherwise linked with corresponding keywords in the keyword fields. In the continuing example herein of the female user planning a vacation to the “beach” (keyword), the supplemental content can include links to web pages of beach resorts, coupons for women’s beach attire, addresses of merchants where the coupons can be redeemed, weather reports, airline tickets that are within the user’s budget, and other supplemental content that is associated with the keyword “beach” and which is more closely tailored/targeted to the user based on the profile information, action history, etc. of the user.

The user-related stored information is redacted, obfuscated, or otherwise made anonymous in some circumstances, e.g., to remove personally identifying information, address or credit card information, etc. Users or business entities are given options to specify whether or how their information is stored and used by the online messaging application. For instance, a user can disallow certain types of information from being stored, limit the storage duration of the information, and also specify conditions under which the information is permitted to be used.

The online messaging application receives (204) a message that has been composed by a user for display during the course of conducting a conversation. The online messaging application detects (206) a potential keyword in the message by accessing the stored keywords, and comparing each potential keyword in the message with the stored keywords to determine whether there is a match. Natural language techniques, machine-learning techniques, convolutional neural network techniques, etc. may be used to parse through the message to identify potential keywords to compare against the stored keywords.

If the online messaging application detects a keyword in the message that matches one or more of the stored keywords, then the online messaging application modifies (208) an appearance of the keyword in the message so as to indicate the availability of the associated supplemental content. The modification can be underlining, bolding, font size/style differences, color differences, animation, or other highlighting techniques that distinguish the keyword from other words in the message.

The online messaging application sends (210) the message with the modified appearance of the keyword to the client device(s) for display in the user interface. The user(s) of the client device(s) is thus able to view the message and recognize that supplemental content for the keyword is available. The online messaging application then receives (212) user selection of the keyword in the message, such as if the user operates the user interface to tap or click on the keyword. The user that composed the message and/or the user that received the message can perform the user selection of the keyword.

Responsive to the user selection of the keyword, the online messaging application identifies (214) the stored supplemental content that is associated with the selected keyword and that can be presented to the user(s). Multiple candidates for supplemental content can be identified and one or more of these candidates are selected for presentation based on relevancy rankings, targeting criteria thresholds, user criteria (e.g., user profile information, user action history and affinities, etc.), financial considerations (e.g., compensation to a third party for presentation of their supplemental content), and other factors.

The supplemental content that has been identified for presentation is sent (216) by the online messaging application for display in the user interface. The online messaging application sends the supplemental content to the user that selected the keyword, and can also send the

supplemental content to other users engaged in the conversation. Multiple pieces of supplemental content can be presented concurrently, such as shown in FIG. 1.

If the user wishes to view further details regarding the presented supplemental content, the user can select (e.g., by tapping or clicking) the presented supplemental content to launch (218) an application such as a web browser. The web browser then accesses a corresponding web page or other resource, so as to present the user with further specific details that pertain to the supplemental content.

CONCLUSION

The techniques described herein enable an online messaging application to present supplemental content that is associated with a keyword that is included in a messaging conversation, without having to interrupt the conversation in order for a user to access and view the supplemental content. Availability of supplemental content is indicated by highlighting the keyword. The supplemental content can be selected based on information related to user, thereby providing supplemental content that is both associated with the keyword and more closely tailored for the user.