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Measurement of impact of product placement advertising

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ABSTRACT

Online content creators, e.g., video creators, earn revenue from product or brand in their content. However, there are no current techniques to measure the impact of such content. This disclosure describes techniques described to measure the impact of content viewership. For example, the techniques can be implemented to measure the search lift generated by such content. The content is selectively withheld from a subset of viewers. The difference in search volume for content related keywords from viewers in this group is compared with that from viewers that were exposed to the content. The advertiser is provided with the measurement and is charged based on a cost-per-incremental-search. Online content platforms can implement the techniques that provide benefits to advertisers (better measurement of impact of product placement advertising) and content creators (opportunities to increase revenue).

KEYWORDS

- Content creator
- Online video
- Product placement
- Brand sponsorship
- Online advertising
- Advertisement pricing
- Statistical segmentation
- Content platform
- Impact measurement

BACKGROUND

Online content creators, e.g., video publishers, derive revenue from product placement or brand sponsorship in their content. For example, video creators include a brand or product in video content in exchange for payment, e.g., a video creator can use and talk about the brand or product. In this arrangement, the price for the product placement is determined by the content creator and the advertiser that sponsors the product placement. The content hosting platform does not participate in setting the price for product placement. Since there is no available mechanism to determine the impact of such content, such product placement is risky for advertisers as compared to traditional digital advertising that has measurable impact and pricing, e.g., cost-per-click or cost-per-conversion,

DESCRIPTION

This disclosure describes techniques that can be implemented by a content hosting platform to provide measurement of the impact of product placement within content and to determine the price an advertiser pays for the product placement. The techniques enable advertisers to obtain metrics that indicate the impact of the creative content. Content creators also benefit by being able to offer measurable impact and charge a price accordingly. The online hosting platforms can derive revenue, e.g., a percentage of the price paid by the advertiser to the content creator.

The disclosed techniques are generally useful to quickly identify how related a video is to a particular search query without putting that video in the search results. This technology can be used to drive content recommendations on watch pages that the user landed on from a search result.

The described techniques automatically segment media distribution impressions into separate exposure groups. For example, the exposure groups may be implemented by selecting

different groups. For example, with the implementation of these techniques, a particular percentage, e.g., 1% of the audience of a content creator (e.g., subscribers to content generated by the creator) receive a push notification for a new video and that a separate 1% do not.

Further, the techniques measure a correlation between the exposure groups, content views, and determine an impact of the content on search lift for a specific subset of keywords. Search lift refers to the difference in search queries between the control and experimental groups. The keywords can be provided by an advertiser or content creator, and can also be automatically derived. A feedback mechanism is implemented to modify a heuristic based on the correlation.

When the techniques are utilized for content recommendation, the heuristic is an affinity score for recommendations. When the techniques are utilized for product placement monetization, the heuristic can be used to determine a monetary reward.

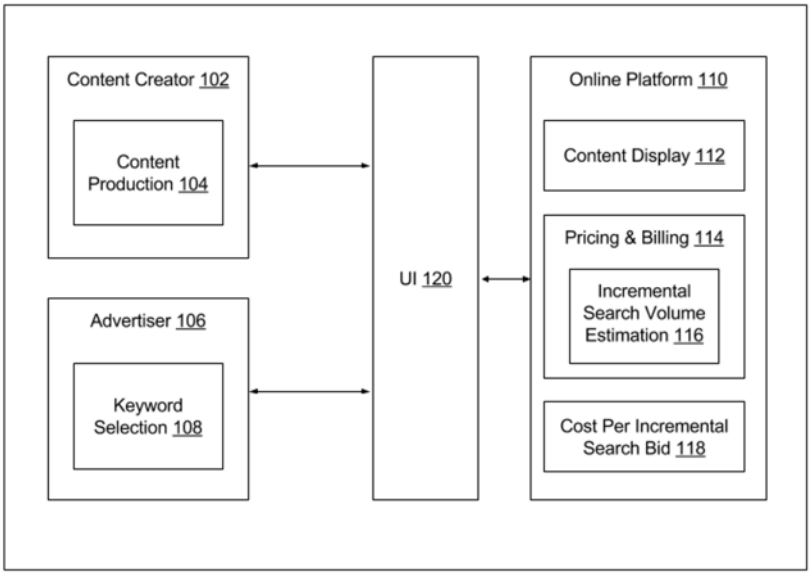

Fig. 1: Incremental search volume estimation

Fig. 1 illustrates determination of incremental search volume due to product placement in content, per techniques of this disclosure. A content creator (102) produces content (104), e.g., video content, that is hosted by an online platform (110). The content features a product or brand

from an advertiser (106). The matching of content creators with advertisers can be offline or may be facilitated by a user interface (120) provided by the online platform. For example, the content creators and advertisers can discover each other using a matching service, search, or filtering options, provided by the online platform. Creators and advertisers can work together to generate the content that features the product or brand. For example, the creator can produce a video that includes scenes that depict use of the product, a discussion of the product, etc.

The online platform manages the pricing and billing (114) and disbursement of revenue to the content creator. Per techniques described herein, the online platform estimates incremental search volume (116) for the product or brand, based on the product placement in the content. The advertiser provides a keyword selection (108), e.g., that includes keywords associated with the product/brand featured in the content using the UI. For example, if brand A provides sponsorship for video content that is related to skincare to feature a product “bodywash B”, the associated keywords include “brand A” and “bodywash B.” The advertiser also specifies submit a cost-per-incremental-search bid (118) via the UI for each keyword (118). The cost-per-incremental-search, determined by the online platform, is the amount that an advertiser pays per additional search for the specified keywords that can be attributed to the content from the content creator. The online platform provides the content for display (112) to viewers.

Per techniques of this disclosure, the determination of the cost-per-incremental search is done through statistical comparison, e.g., between a control group vs. experimental group. The online platform runs a holdback experiment where the content is automatically held back from a small randomly selected group of users. Holding back of content can be performed in different ways, e.g.,

- The content is held back from a subset of locations where content is normally provided. For example, if the online platform includes a recommended content feed for viewers, the content is suppressed a small amount of the time the recommended content feed is provided. With the suppression, viewers who otherwise would have the particular content featured in their feed, do not see the content. For example, the content is replaced with other content.
- The content can be hidden across other more deterministic parts of the online content platform, e.g., the content may be suppressed such that it does not appear on the creator's list of content, push notifications of the content to subscribers of the content creator may be suppressed, etc.

While both the above approaches are valid, the former approach generates more predictable user experience of viewers that view content on the online platform, e.g., by eliminating the possibility of confusion, e.g., when content from their favorite creator fails to appear due to being hidden. The different suppression mechanisms enable the online platform to measure the control vs. experiment impact of not seeing vs. seeing the particular content, by segmenting the viewer population.

The content platform can then compare searches for the advertiser's specified measurement keywords between the group of users that were exposed to the content (e.g., in their recommended content feed, on the page of the content creator, via push notification, etc.) and the holdback group of users that were not exposed (due to suppression of content). The total number of incremental searches for any of the advertiser's listed brand keywords, generated by the content, is calculated by comparing the exposed users with the holdback users. At predetermined interval after the content is made available on the online platform, advertisers are

billed at the cost--per-incremental search. Such billing can be time-limited. The online content platform then provides a share of the revenue to the content creator.

In practice, the statistical comparison between the groups may not provide an exact number of incremental searches, but rather a confidence range. For example, in studying the baseline rate of searching for brand A and bodywash B among the audience for the content, based on segmenting the audience into two groups, a 95-percent confidence interval of incremental searches produced in the exposed group might be [1000,1500].

The advertisers may be billed based on the low end of the confidence interval, e.g., in the example above, the advertiser would only pay for 1000 incremental searches, such that if the cost-per-incremental-search bid is 25 cents, the advertiser would pay $250. Alternatively, another suitable point in the range, e.g., the midpoint of the range, can be used. It is possible to gain greater statistical confidence (a narrower confidence interval) in the search uplift, e.g., by holding back a larger portion of users from the content. However, this can cause the content creator to lose viewership and revenue from other types of advertising on their content. For example, the other types of advertising for video content can include in-stream video ads that play before or during the video.

Sizing of the holdback can be handled as follows:

- The online platform provides the creator and/or the advertiser tools that estimate the size of holdback needed to detect different amounts of search uplift.
- The online platform can handle sizing dynamically to optimize revenue for the content creator. In this example, the advertiser is charged only for the low-end of the confidence interval estimate of the number of incremental brand keyword searches produced by the content.

Running a larger holdback (larger group size) can narrows the confidence interval, and provide the advertiser with a more accurate measurement, which can lead to the advertiser bidding a higher cost-per-incremental search. However, running a larger holdback also decreases viewership of the content and can lead to the content creator reduce revenue for the content creator from other types of advertising. The described techniques estimate each of these using modeling, and choose an optimally-sized holdback to maximize revenue for the content creator. The dynamic optimization is done at intervals. For example, the online platform can run statistical analysis, determine the confidence interval in the keyword search uplift generated, and then adjust the size of the holdback.

The described techniques can be utilized by any online content platform. For example, such online platforms can include social network websites and applications, messaging applications, live game streaming etc.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure describes techniques described to measure the impact of content viewership. For example, the techniques can be implemented to measure the search lift generated by such content. The content is selectively withheld from a subset of viewers. The difference in search volume for content related keywords from viewers in this group is compared with that from viewers that were exposed to the content. The advertiser is provided with the measurement and is charged based on a cost-per-incremental-search. Online content platforms can implement the techniques that provide benefits to advertisers (better measurement of impact of product placement advertising) and content creators (opportunities to increase revenue).