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Conditional Suppression of Advertisements Based on Data Cost

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ABSTRACT

Mobile app publishers earn revenue from serving ads to users on their devices. In some cases, the ad revenue from an ad served on a user device is smaller than the direct cost incurred by the user for having the ad served on their user device. This disclosure describes techniques to automatically suppress ad serving on mobile devices based on direct costs. With user permission, the direct cost to the user from an ad request and subsequent ad served is estimated. Ad revenue associated with an ad impression is estimated and compared to the estimated direct cost. Based on the comparison, the ad is suppressed. Further, the user can be billed a charge based on an agreed upon mechanism and the publisher is credited with a portion of the charge.

KEYWORDS

- Ad suppression
- Data plan
- Content publisher
- Roaming charge
- Mobile ad
- Mobile data
- Cellular data
- Online advertising

BACKGROUND

Mobile app and content publishers earn revenue from serving ads to their users on mobile devices. An ad SDK associated with a mobile ad network is commonly utilized by the app developer or publisher to integrate their app with mobile ad networks that serve ads.

A typical ad serve workflow is as follows. The publisher's app runs on the user device and invokes an ad request to the mobile ad network, e.g., a mobile ad network data center over the network connection of the device, e.g., via WiFi or a mobile 3G/4G/LTE data connection. The mobile ad network returns an ad to the user device over the network connection, which is served (rendered) on the user device. User interaction with the ad (e.g. if the user clicks on the ad) is reported to the mobile ad network. The mobile ad network bills the ad promoter (advertiser) and shares the generated revenue with the app publisher.

In some cases, the revenue generated from an individual ad can be smaller than the direct cost to the user for having the ad served on their user device. For example, if the user device is on a metered and expensive data connection, e.g., a cellular data connection while roaming out-of-country, and/or if the content of the ad has a large file size (e.g., includes a high-definition video), the charges incurred by the user device for the data traffic can be greater than the overall revenue of the ad itself.

As an illustrative example, the cost of data traffic incurred by a user for an ad request and response may be $0.05 (paid to the network provider), whereas the advertiser may be billed $0.03 for the ad, of which $0.02 is paid to the publisher (with a net revenue to the mobile ad network of $0.01). Similar considerations can arise for other end-user resources such as battery and/or electricity consumption of a user device when an ad is served that has a directly-measurable economic cost.

Some content publishers offer an option for users to make a direct payment towards an ad-free version of their app. However, the price for the app is set without taking into account the value-generation from ads or user costs incurred when being served ads. Some products and services provide users a mechanism for users to make micropayments to publishers based on

their use of publisher content. These products and services typically compute the transaction based on factors such as the user's time spent on a website, user's indication of which publishers to make payments to, etc. rather than incurred costs, and typically do not change the end experience of the user, e.g., suppression of ads. Some mobile ad network SDKs include features that allow a publisher to suppress the serving of ads on a user device based on the latency of ad serving or displaced content considerations, e.g.,, when the screen has more ads than content.

DESCRIPTION

User experience and economics can be enhanced by providing a feature that takes directly incurred user costs into account when serving ads. This disclosure describes techniques to customize ad serving on mobile devices based on direct user costs for having the ad served on their device. Per techniques of this disclosure, user's costs (e.g., data charges) are estimated and if the costs exceed the revenue from the serving of the ad, the ad is suppressed. In lieu of the ad being served, the user is directly billed an amount that is less than the cost of receiving the ad data. The resulting revenue is shared between the mobile ad network and the content publisher.
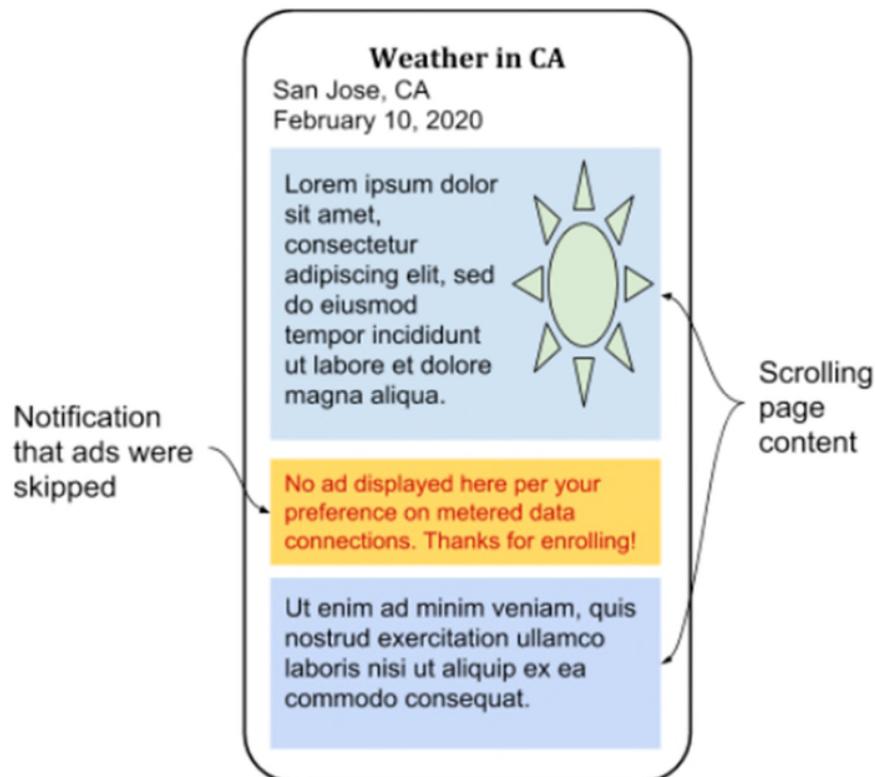
Fig. 1: Ads are suppressed based on comparison of user cost to a threshold

Fig. 1 illustrates an example of ad suppression, per techniques of this disclosure. In this illustrative example, with user permission and express consent, the mobile ad network detects that the user is on a metered cellular data connection and that the user has previously indicated their preference to not be served ads when using cellular data and to instead be charged directly. The cost of data from an ad being served to the user device is estimated and based on the estimated cost, the ad is suppressed and optionally, an indication is provided to the user, as seen in the example of Fig. 1.
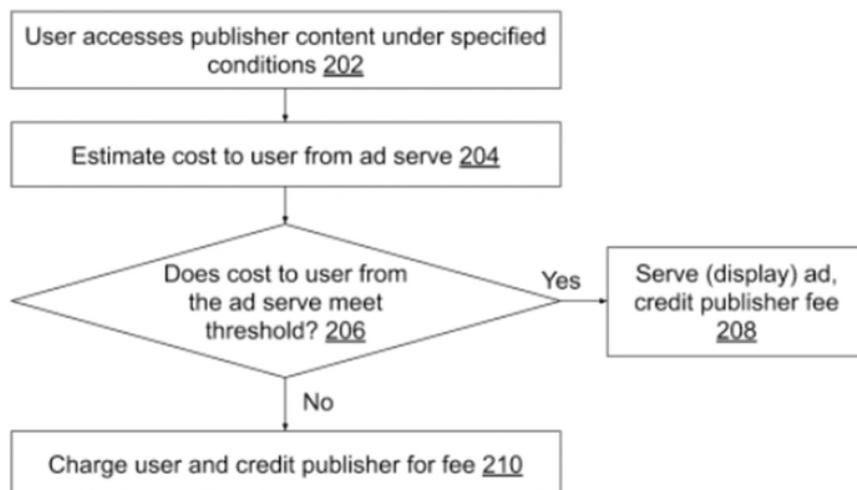
Fig. 2: Ad suppression based on cost

Fig. 2 is a flowchart that illustrates an example method to suppress ads based on direct user cost estimation, per techniques of this disclosure. A user accesses publisher provided content using their mobile device app under conditions specified by the user (202). The app additionally enables end-users to provide direct payment to the mobile ad network and/or direct payment to the publishers under the specified conditions. The conditions can relate to the nature of data connection, e.g., WiFi vs. Cellular, home vs. roaming, metered vs. unmetered, prepaid vs. postpaid, etc.

A direct cost to the user from an ad request and subsequent ad serve is estimated (204). The estimation can be performed based on user specified costs for metered data connections, e.g., details of cellular data plan, publicly available information about mobile device data rates, user device conditions and properties (e.g., cellular carrier, roaming status, data connection status, etc.), and server-side data obtained from the mobile ad network.

Revenue associated with an ad impression is estimated based on information available with the mobile ad network and used as a threshold. The estimated direct cost to the user from

being served the ad is compared against the threshold (206). If the direct cost meets the threshold - e.g., the user is on a WiFi connection and has no additional direct cost - the ad is served (208), the advertiser is billed, and the content publisher is credited with a portion of the revenue associated with the ad.

If the direct cost to the user does not meet the threshold - e.g., when the user is on an expensive data plan and their estimated direct cost exceeds the ad revenue- the ad is suppressed (210) and no ad is served on the user device. The user is billed based on the agreed upon rates and the publisher is credited with a portion of the charges paid by the user.

Ad suppression can be implemented in several ways. For example, the mobile ad network SDK can retain control over the user experience and for example, display a note to the user that an ad is not being served. Further, the mobile ad network can provide a signal to the content publisher that no ad is being served but that the publisher will instead receive a portion of the revenue from the suppression of the ad. The content published can suitably modify the user experience with such information.

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

Mobile app publishers earn revenue from serving ads to users on their devices. In some cases, the ad revenue from an ad served on a user device is smaller than the direct cost incurred by the user for having the ad served on their user device. This disclosure describes techniques to automatically suppress ad serving on mobile devices based on direct costs. With user permission, the direct cost to the user from an ad request and subsequent ad served is estimated. Ad revenue associated with an ad impression is estimated and compared to the estimated direct cost. Based on the comparison, the ad is suppressed. Further, the user can be billed a charge based on an agreed upon mechanism and the publisher is credited with a portion of the charge.

REFERENCES

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