

## スマートフォンアプリの新規ユーザ獲得へのテレビCMの効果分析

趙漢哲†

NHN PlayArt 株式会社†

## 1. Introduction

Television advertisement (TV ad) is an effective way to market products and services. However, it is unclear whether TV ad is also effective for smartphone apps since young people, who account for the most portions of smartphone app users, watch less TV. Smartphone app companies often take different approaches to promote their products by using Web, SNS and even other apps (in-app ad).

This article introduces our experience in the use of TV ad for acquiring new users of a smartphone app. After a month of TV ad, we found that 1) TV ad is effective for smartphone apps, 2) it also triggers voluntary SNS marketing by app users and 3) its effectiveness is different by regions.

## 2. Specification

### i. TV ad

For the analysis, we used one of smartphone apps published by NHN PlayArt Corp<sup>1)</sup>. The TV ad for this app had been broadcasted during August 2014 in two periods as below.

- First period : 2014/08/01~10
- Second period : 2014/08/15~24

In addition, the number of the TV ads for the last few days is relatively smaller than the other days.

The TV ad had been done on four regions by five TV channels respectively. These regions are:

- Kanto region
- Three Tokai prefectures
- Kansai region
- Fukuoka

The amount of the TV ads broadcasted on each region is balanced based on the total household audience rating. The different between the maximum and minimum values is less than 10%.

### ii. User access information

We prepared user access logs during the TV ad, previous two weeks and next one week. This data involves a variety of information such as user-specific app id, connection information and device type.

## 3. Analysis Method

When a user downloads the app, it receives a unique id from the server so that user-oriented services such as recommendation can be realized. We use this id recorded in user logs to identify new users from existing ones.

Network information in user logs also allows us to identify the places from which the accesses come. We use a free geolocation<sup>2)</sup> DB for this purpose. While this DB does not provide precise location information at fine-grained level (e.g., city), it shows generally acceptable precision at coarse-grained level (e.g., prefecture).

## 4. Results

### i. The effectiveness of TV ad

Figure 1 shows the change of the number of daily new users in a base-10 log scale. The x-axis indicates date and the y-axis represents the amount of new users proportional to the average number of daily new users of all locations during two weeks before the TV ad (2014/07/18~31).

The black line at the top of the graph shows the change of the number of daily new users regardless of their locations. As the TV ad begins, the number increases almost three times. More precisely, the average number of daily new users during two TV ad periods is 1.9 times higher than that before the TV ad. Therefore, it is clear that TV ad is also an effective means for acquiring new users of smartphone apps.

Interestingly, the sudden increase appears a day before the beginning of the TV ad. By using referrer information in user logs, we

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Analysis of the Effect of TV Advertisement on a Smartphone App User Acquisition

†Cho, Han-Cheol · NHN PlayArt Corp.

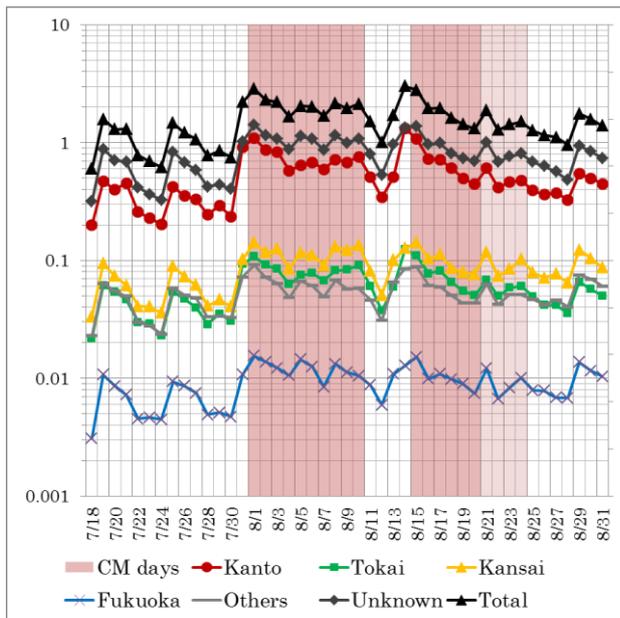


Figure 1 the change in the number of daily new users

found that existing app users voluntarily spread the information of the TV ad through their SNS and new users search this app by using the keywords related to the content of the TV ad such as the name of a female group appearing in it.

ii. The effect at different locations

Figure 1 also shows the change in the number of daily new users at five areas where TV ad is broadcasted (Kanto, Tokai, Kansai and Fukuoka) and not broadcasted (Others). About 40% of user logs are not resolved to locations at prefecture level (Unknown). While the absolute number is quite different from area to area, the trend of the change is almost identical. Even the “Others” area exhibits the similar trend.

However, this result does not take into account the population of different regions, which also affects TV ad pricing. To investigate the effect of TV ad at different locations, we normalized this result by using the population of these regions<sup>3)</sup>. The result is shown in Figure 2. The value at y-axis is the percentage of new users against the population of a specific area, which is also proportional to the average percentage of

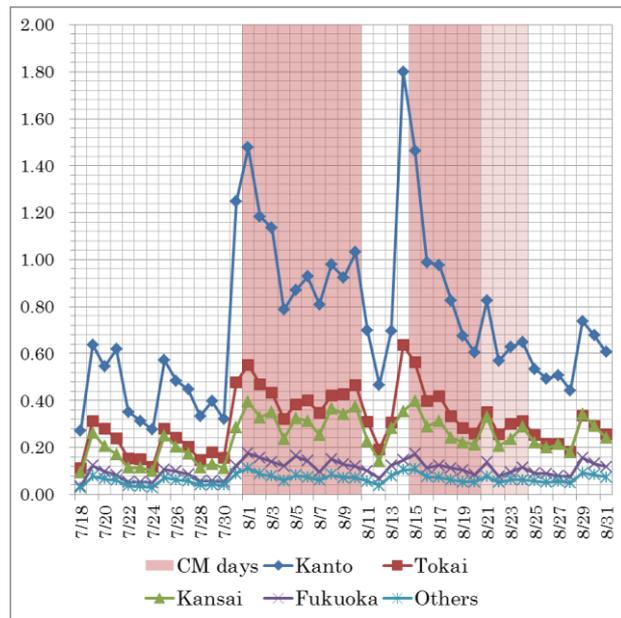


Figure 2 the result normalized by population

daily new users during two weeks before the TV ad.

In the figure, we can see that the effect of the TV ad in the “Others” area is very low, whereas its absolute number is similar to Tokai and Kansai in Figure 1. Second, the difference is also obvious at different locations. For example, TV ad at Kanto area is much more effective in both new user acquisition and costs than those at the other areas. Fukuoka, on the other hand, barely takes the advantage of the TV ad.

5. Conclusion

In this paper, we investigated the effect of TV ad in the promotion of smartphone apps. As a result, we found that 1) TV ad is an effective means for advertising smartphone apps, 2) it can trigger voluntary SNS marketing by existing app users and 3) its effectiveness is different from area to area.

The reason of the third conclusion is not obvious yet. It needs further investigation.

1) <http://www.nhn-playart.com/>  
 2) <https://github.com/fiorix/freegeoip>  
 3) <http://www.stat.go.jp/data/jinsui/2013np/index.htm>