Analyzing the effectiveness of advertising on Call Intent Targeting (CIT) Service in True Caller

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Abstract :

Intent marketing is a kind of marketing that aims to meet the prospect or end-user intent right at the moment when they really want a service or a product. It is a very important strategy in search marketing. True caller which is the fourth most downloaded app in India has launched a new intent marketing service called Call Intent Targeting (CIT). The targeted ads are served to the user the moment the user is searching for a phone number or a keyword. This work analyzes the effectiveness of CIT service from the perspective of advertiser. Quantitative analysis is done on the number of impressions and clicks rate data collected from business intelligence reports (BI) provided by True caller and qualitative analysis is conducted using questionnaire response collected via cold calling to the searched users in BI report.

I. INTRODUCTION:

Most of the traditional ads are created with a general demographic in mind and displayed to every customer exactly in the same way. Different from it, Intent ads are created with a specific customer in mind and shown only to customers who have shown interest in that content. Intent ads offer a significantly more return on investment compared to traditional ads. The intent is information about a person reason for visiting based on their behaviour and activity online. In-application or In-app advertising is currently the fastest growing form of mobile advertising on the market. In-app advertising offers a high click-through rate than web advertising. According to a recent study by Medialets, a mobile ad serving and tracking firm, the click-through rates (CTR) for apps is 0.58 per cent whereas mobile Web only has a 0.23 per cent CTR. In-app ads perform 11.4 times better than normal banner ads.

Truecaller is right now 4th most downloaded mobile app in India and commands over 250 million active users worldwide with 3 billion searchable number. More than 60 per cent of Truecaller's global user base is in India. From a phone number search application, it is now a full-blown social and communication offering. Last year, over 500 million calls were being made via Truecaller every month and 4.2 billion mobile searches are conducted every month. Truecaller provides two ways for brands to engage with customers – Brand ads and Call Intent Marketing.

In Brand ads, Brands can create themed notifications for incoming and missed calls. They can also tweak settings to reach users based on parameters like location and time of day. Brands can also add their own brand's element by tweaking the color of the Truecaller interface to help facilitate or create brand recall.

Call Intent Targeting (CIT) targets the appropriate audience to deliver the most appropriate content as an advertisement. CIT works on those users, who are present and engaged with Truecaller: Maybe searching for some phone numbers, or identifying an incoming call.This work analyses the effectiveness of Call Intent Targeting for MasterSkills, a leading provider of well-trained manpower in areas of Mobile

application development and web development. MasterSkills provides professional courses on various mobile platforms such as iOS, Android and Windows. Highly experienced industry consultants handle training programs with a practical approach. MasterSkills also conducts various customized programs for leading corporates & academic institutions. Founded in 2006, MasterSkills advertised through Brand ads from 2017 till date on Placementpapers.com and yet5.com. MasterSkills has been advertising through Truecaller CIT over the last 6 months. Quantitative and Qualitative analysis is conducted from the business intelligence reports and questionnaire collected via cold calling to searched users. The aim of the analysis to quantify the increase in impressions and CTR due to CIT and analyze the satisfaction level due to CIT qualitatively.

II. REVIEW OF LITERATURE :

The literature survey is done to understand the methods employed in existing works on the analysis of advertisement effectiveness.

A descriptive research study was conducted in [1] to research the attitude and purchase intentions of Gen Y with respect to in-app advertising on mobiles. Statistical analysis was done using Cronbach Alpha, Factor Analysis (EFA and CFA) using SPSS and AMOS 21.0. The hypothesis was verified with the help of structural equation modelling using AMOS 21.0. Work in [2] studied the Click-through Rate of banner ads on mobile devices vis-à-vis that of banner ads displayed on non-mobile devices. The results established that there is a higher click-through rate of banner ads on mobile devices. Technology Acceptance Model (TAM) and the uses and gratifications theory are used to compare the mobile banner ads to non-mobile banner ads on a local newspaper's website. A methodology to analyze the effectiveness of a targeted advertisement campaign is proposed in [3]. The work introduced a difference-in-differences estimator to evaluate the effectiveness of targeting that controls for the selection bias and using a large-scale natural field experiment involving several online advertising campaigns and a specific interest-based targeting product. Authors estimated a model of targeted CTRs that decomposes the effect of the advertisement, clickiness (the propensity to click on any ad) of users, and brand and category interest of users on targeted CTRs. Various online advertisement variables that motivate consumers to recall online advertisement were studied in [4]. One-way ANOVA was carried out to test the hypothesis whether the mean of various online advertising factors influencing customers advertisement recall differ significantly across the age of respondents, for this null hypothesis was assumed to mean of various online advertising factors influencing customers advertisement recall does not differ significantly across the age of respondents. Effect of online advertising on consumer buying behaviour is studied in [5]. The method used was a quantitative analysis using the technique of purposive sampling method. The hypothesis was tested using structural equation modelling (SEM). Work in [6] studied the question of "How significant are the measures of advertising effectiveness in terms of (1) attitude towards the ad, (2) ad recall, and (3) click-through rates in explaining online purchase decision". All the three measures of advertising effectiveness were found to be significant predictors, with the ability to recall online ads being the most important predictor, followed by the frequency of clicking online ads and attitudes toward online advertising. Work in [7] identifies the different ways of measuring the effectiveness of online advertising. Apart from clickthrough rate, other metrics such as the number of incremental sales generated, the campaign ROI, the brand's reputation and the engagement on the Web were experimented to measure the effectiveness of online advertising. Work in [8] introduced eight mediating variables and six moderating variables to examine the impact between exogenous variables and online digital media advertising (endogenous). The researchers have taken 910 responses through a modified questionnaire and employed quantitative research methods, such as the structural equation modelling, exploratory factor and confirmatory factor analyses, and Hayes process approach for examining the mediation and moderation amongst the variables.

The results of direct impact have demonstrated that all of the channels of digital media advertising have a positive and significant influence on the effectiveness of online digital media that creates brand sustainability for fast-moving consumer goods (FMCG) and services sectors of Pakistan. The outcomes of hypotheses pertaining to the mediating and moderating effects of different variables have shown the significant influence between exogenous variables and endogenous variable. A new method called prospective meta-analysis in marketing (PMM) is proposed in [9] to estimate consumer response to online advertising on a large and adaptive scale. The authors show how consumers respond differently to the same ad depending on how distant they are from purchase, and uncover which channels are most appropriate to which user at different stages of the funnel. They also show how engagement and attention strengthen consumer response to advertising. The authors show how PMM produces exploratory findings, confirmatory findings, and replications by systematically organizing the incremental exploration of complex phenomena with cycles of discovery and validation.

III.   RATIONALE OF THE STUDY:

As seen from the survey, there are no well-established methods to measure the advertisement effectiveness of Call Intent Targeting (CIT). The methods like impression and click rate in web banner advertisements don't suit particularly for Truecaller in-app, as users' attention is split between call and advertisement and the duration of the contact is very low compared to web advertisements. This necessitates new methods to measure the effectiveness of advertisement through Call Intent Targeting.

Aim:
  ➢ The aim of this work is to analyze the effectiveness of advertisement through Call Intent Targeting service of Truecaller for an education trainer company in Bangalore.

Scope:
  ➢ The study compares the advertisement effectiveness based on the customer turnout due to banner ads and call intent targeting.

Objectives:
  ➢ To design qualitative and quantitative methods for the analysis of the effectiveness of Call Intent Targeting ads.
  ➢ Test the designed method for a case study of educational trainer company – MasterSkills.

IV.   METHODOLOGY:

This study is explorative involving both qualitative and quantitative data. The primary data for analysis is obtained through data collected from a valid questionnaire and secondary data is obtained through business intelligence (BI) reports of Truecaller.

Following parameters are extracted from the BI reports available at Truecaller's Self-service platform.
  1. Number of impressions
  2. Click rate
  3. Total Number of searches in this category
  4. Total Number of clicks in this category

To measure the advertising effect of targeted advertisement a new estimator called Targeted Impact (TI) is proposed. It measures the outcome of treatment called companies advertisement for the related search.

Targeted Impact (TI) is measured by measuring the different outcome between the treated and untreated. Targeted Impact (TI) estimator can be written as

$$TI = E(Y_i|D_i == 1) - E(Y_i|D_i == 0)$$

$$D_i = \{1, \quad i\ recives\ the\ treatment\ 0, `i\ doesn'\ t\ recieve\ the\ treatment$$

Y_i is the response of the individual.

Considering Y_{i1} as the response of the user after receiving the treatment and Y_{io} as the response of the user when the user is not treated [The response is clicking the web link of the advertisement or making a call to the advertiser] the equation of TI can be rewritten as

$$TI = \{E(Y_{i1}|D_1) - E(Y_{i0}|D_1)\} - \{E(Y_{i0}|D_1) - E(Y_{i0}|D_o)\}$$

TI has two factors the first factor is the impact of treatment on the treated and is the difference in response between the selected and unselected populations after being untreated.

The first factor can be calculated as

$$\{E(Y_{i1}|D_1) - E(Y_{i0}|D_1)\} = number\ of\ clicks - (number\ of\ impressions - number\ of\ clicks)$$

Second factor can be calculated as

$$\{E(Y_{i0}|D_1) - E(Y_{i0}|D_o)\} = -(number\ of\ impressions - number\ of\ clicks) - Total\ number\ of\ searches - Total\ number\ of\ clicks$$

Higher the value of TI, more effective is the advertisement.

Two hypotheses were designed to measure the effectiveness of advertising impact due to CIT

S.NO	Null Hypothesis	Alternate Hypothesis
1	Brand awareness did not increase due to CIT	Brand awareness increased due to CIT
2	Advertisement impact is not satisfactory	Advertisement impact is satisfactory

Table 1 Hypothesis

Hypothesis 1 was tested by calculating the TI across all the advertisement platform deployed by MasterSkills including Truecaller. Hypothesis 2 is tested based on the questionnaire response from the leads provided by Truecaller. The sampling design was probability sampling and the sampling method adopted was simple random sampling. Following is the questionnaire provided to leads to collect the information. The feedback on satisfaction levels are collected in Likert five-point scale.

1	Name of the Customer	
2	Were you able to find our service easily in Truecaller ?	A. Highly Agree B. Moderately Agree C. No comment D. Moderately Disagree

		E. Highly Disagree
3	Was our business relevant to you?	A. Highly Agree B. Moderately Agree C. No comment D. Moderately Disagree E. Highly Disagree
4	Was our business ad appealing?	A. Highly Agree B. Moderately Agree C. No comment D. Moderately Disagree E. Highly Disagree
5	Do you think our advertisement look can be improved?	A. Highly Agree B. Moderately Agree C. No comment D. Moderately Disagree E. Highly Disagree
6	Was our advertisement appeal better compared to others?	A. Highly Agree B. Moderately Agree C. No comment D. Moderately Disagree E. Highly Disagree
7	Do you think search keyword are apt?	A. Highly Agree B. Moderately Agree C. No comment D. Moderately Disagree E. Highly Disagree
8	Did you able to view us in retargeting after searched	A. Highly Agree B. Moderately Agree C. No comment

| | | D.   Moderately Disagree |
| | | E.   Highly Disagree |

Table 2 Questionnaire

V. **RESULTS:**

A. Hypothesis 1

The brand awareness is measured in terms of TI estimator proposed in methodology section. From the secondary data collected from the Truecaller'sself-service platform, the following parameters were collected for 11 weeks

1. Number of impressions
2. Click rate
3. Total Number of searches in this category
4. Total Number of clicks in this category

Also, the same parameters were collected for Banner ads from the BI reports of Placement Papers.com and Yet5.com for the same 11 weeks.

From these values, TI estimator is calculated for 11 weeks. The TI values of Placepapers.com and Yet5.com are averaged to a single column of TI due to banner ads.
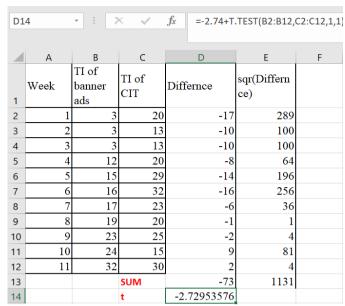
Week	TI of banner ads	TI of CIT
1	3	20
2	3	13
3	3	13
4	12	20
5	15	29
6	16	32
7	17	23
8	19	20
9	23	25
10	24	15
11	32	30

Table 3 TI over 11 weeks

Paired Samples T test is done to calculate the score using the formula

$$t = \frac{\sum D / N}{\sqrt{\frac{\sum D^2 - (\frac{\sum D^2}{N})}{(N-1)N}}}$$

Where N is the number of weeks and D is the difference between TI of banner ads and CIT.
The t value is -2.73, as calculated below:

	A	B	C	D	E	F
1	Week	TI of banner ads	TI of CIT	Differnce	sqr(Differnce)	
2	1	3	20	-17	289	
3	2	3	13	-10	100	
4	3	3	13	-10	100	
5	4	12	20	-8	64	
6	5	15	29	-14	196	
7	6	16	32	-16	256	
8	7	17	23	-6	36	
9	8	19	20	-1	1	
10	9	23	25	-2	4	
11	10	24	15	9	81	
12	11	32	30	2	4	
13			SUM	-73	1131	
14			t	-2.72953576		

Figure 1 Paired T-Test

Taking the degree of freedom as 10 (11 weeks-1), the p-value observed from t table is 0.01. The p-value is the less than the standard alpha value of 0.05 thereby we can reject the null hypothesis that brand awareness did not increase due to CIT.

B. Hypothesis 2

The questionnaire response was collected from 100 random leads provided by Truecaller. The responses for each question were distributed across the 100 respondents as below

Question	Highly Agree	Mod. Agree	No Comment	Mod. Disagree	Highly Disagree
2	40	20	10	20	10
3	40	40	0	10	10
4	20	40	20	10	10
5	20	20	20	10	30
6	40	30	10	5	15
7	30	40	0	10	20
8	30	20	10	20	20

Table 4 Questionnaire response

Total responses in Likert five-point scale is as below

Highly Agree	220
Moderately Agree	210

No comment	70
Moderately Disagree	85
Highly Disagree	115

Table 5 Response category

Chi-Square test is done on the above response by combining responses categories in the Likert scale. Highly agree and Moderately agree is combined to Agree. Moderately disagree and Highly disagree are combined to Disagree.

Responses	Frequency		Actual	Expected
Highly agree	220			
Moderately agree	210			
No comment	70	Agree	430	307.5
Moderately disagree	85	Disagee	200	307.5
Highly disagree	115			
Total	700	Chi Square value		1.4832E-20

Figure 2 Chi-Square result

The chi-square value is almost close to 0, rejecting the null hypothesis and proving the alternate hypothesis that "Advertisement impact is satisfactory".

VI. DISCUSSION:

The study confirmed that brand awareness has increased and the advertisement impact is satisfactory due to CIT. But almost 40% of clients did not find the advertisement during the retargeting stage. Numerous studies have confirmed that retargeting in online advertisement helps to increase the client turnout ratio. So suitable action must be discussed with Truecaller to increase the retargeting rate. About 30% of turnout clients still view that search keywords were not sufficient to locate MasterSkills. This requires adding additional keywords for targeting in the campaign. About 40% of clients feel that advertisement look can be improved. So, the advertisement theme must be revisited and improve further for an appealing atheistic look.

VII. CONCLUSION :

In this work, advertisement effectiveness of Call Intent Targeting in Truecaller is analyzed for a case study of an educational trainer – MasterSkills. The study involved both quantitative and qualitative angle. A new estimator called TI was proposed to model the brand awareness. Based on this estimator, statistical T-Test was done to prove that brand awareness has increased due to CIT.

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