Chapter 12
Big Data Analytics in Advertising

12.1 Introduction

Traditionally, advertising was nothing but communicating to a whole set of target audience. But with the advent of internet, everything changed, especially behaviorally targeted advertisements. Since 2000, the internet became the primary advertising and marketing channel for all the businesses in all sectors. But even then, the click-through rates (CTRs) flattened s after a point of time. CRTs increased 62% in 2013 and much later. Today, brands have access to a huge quantity of data in the form of reviews, tweets, followers, click, likes, etc. which offer great untapped potential. Thus, when this kind of unstructured data is combined with macro-level data from the advertising agencies, it can prove to be a valuable communication opportunity. The companies can see how they can analyze the data to gain insights on and to predict consumer behavior and also conclude how they can align new unstructured disparate data sources with their existing data to derive actionable decisions [1–3]. With the recent advances in mobile computing and wireless networking, mobile advertising is now becoming popular because of the effective platform that the mobile devices can offer. Thus, mobile-based Big Data Analytics provides new opportunities of inputs to advertising.

Presently, the approaches involved in advertising processes use behavior targeting (BT) technology to provide static services. This is obsolete and very poor scenario as compared to the fast and real-time expectation and requirements in the upcoming scenario of Big Data Analytics. It is the need of the hour to develop a new service in advertising based on Big Data Analytics techniques. The objective of such initiatives will be to provide, real time and static on-demand services for advertisers and publishers on 'when,' 'what,' 'how,' to advertise, identify customer behavior patterns that are collected by data. This becomes essential to develop models for advertising recommendations and trend-setting statements.

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12.2 What Role Can Big Data Analytics Play in Advertising?

Targeted personalized campaigns can be created to save money and increase efficiency by targeting the right people with the right product by gathering data and learning user behavior [3].

The digital footprint of a customer is highly valuable in today's era of personalized marketing and advertising. There is so much valuable information available with every Google search, every Facebook or Twitter posting, all online actions, a consumer's social media and digital world will be flooded with advertisements of various products that the customer may be willing or be interested to buy.

The information about live online communities can be targeted after due understanding of the patterns in user behavior. The customer motivations can be better understood with the details of such behavior. Advertising agencies can obtain information and thereby measure accurately the customer interests, and with subgroups level analysis, they will be able to track and measure the customers' impressions about specific latest trends or products.

12.3 BOTs

We already know that about a quarter of all advertisements are being shown only to Bots, not humans. Therefore, advertisement frauds can be seen with humans being not exposed to advertisements.

12.4 Predictive Analytics in Advertising

Huge advertisement fraud can be overcome by applying predictive analytics techniques for Big Data problems. Big Data Analytics techniques make it possible to define accurately the types of customers being targeted, thus enabling effective, efficient and least cost mechanism to have reach and impact on specific targets. Optimove is a platform for marketing automation that uses predictive analytics to prioritize within the existing customers instead of acquiring new customers by additional investment. For achieving customer retention, targeted deals and services are offered to specific customer groups based on their requirements as understood by using this predictive analytics platform.

12.5 Big Data for Big Ideas

New and big ideas can be conceived and delivered by advertisers by working with Big Data companies, at a pace fast than conventional methods of working with ideas and pitches through various departments. Today, advertisers can provide new ideas and campaign very fast, deploying Big Data technologies.

12.6 Innovation in Big Data—Netflix

Netflix advertises TV shows and movies based on what the customers have previously watched by collecting data on TV shows watched, time spent on each show, preferences of actors, etc. With all this, Netflix is able to calculate the worthiness of a customer for advertisers.

12.7 Future Outlook

Since the fact that a lot of business are sitting on a lot of data of their customers but lack infrastructure or capability to understand analyze it, the need for better and new technology infrastructure and analytics will continue to grow.

Thus, by using the power of data analytics, advertisers can identify emerging trends and provide real-time live options of advertisements: Predictive analytics based on Big Data technology can help reach the right audience at the right time, the goal of all advertising.

This provides an opportunity for companies to mine their data to improve both bottom level and customer service, instead of blindly sitting on a gold mine of data of customers.

12.8 Conclusion

In this chapter, we have analyzed the possible role of the Big Data Analytics in advertising. We have presented the role of predictive analytics in advertising with the example of Netflix. We finally concluded by providing the future outlook for a role of Big Data Analytics in advertising.

12.9 Review Questions

1. Explain Internet advertising in contrast to traditional advertising.
2. How existing advertising approaches use Behavior Targeting. What is their drawback?
3. How Big Data Analytics will beneficial?
4. What is the role Big Data Analytics can play in Advertising?
5. How predictive analytics can help in advertise?
6. Explain how Netflix functions?
7. What is the future outlook for Big Data Analytics in Advertising?

References

1. Y. Freund, R. Iyer, R.E. Schapire, Y. Singer, An efficient boosting algorithm for combining preferences. J. Mach. Learn. Res. **4**, 933–969 (2003)
2. C. Schmitt, D. Dengler, M. Bauer, Multivariate preference models and decision making with the MAUT machine, in *Proceedings of the 9th International Conference on User Modeling (UM 2003)*, pp. 297–302 (2003)
3. J.L. Herlocker, J.A. Konstan, L.G. Terveen, J.T. Riedl, Evaluating collaborative filtering recommender systems. ACM Trans. Inf. Syst. **22**(1), 5–53 (2004)