

## Introduction

According to classical economic commentary, it is said that credit is the lifeblood of the economy. It serves as the lubricating oil which accelerates the wheel of economic development. However, in an age of Big Data and ubiquitous computing, information has become the holy grail and beacon for economic activity. Contemporary economists argue that we currently live in a knowledge-based economy where data analytics has profoundly transformed the interactions between an institution and an individual. Nowadays, data is being used purposefully to influence relationships between universities and students, governments and voters, hospitals and patients, and even businesses and customers. In fact, many institutions today invest heavily in business intelligence (BI) practices to make better informed decisions about their current and future operations. According to an American research and advisory company, Gartner Inc., global revenue in BI and analytics software market is forecasted to reach \$22.8 billion in 2020 (Gartner, 2017). One common business intelligence practice used by companies is data mining - an essential process used to discover patterns from large datasets. More practically, data mining is used by businesses to amass and analyze online behavioral data in order to deliver customized advertisements to their customers. In this paper, we will discuss the benefits of data mining for targeted advertisements in relation to both customers and businesses. Additionally, we will briefly address concerns surrounding data mining practices and offer plausible recommendations to ultimately help defend our belief in the importance of data mining to serve personalized advertisements.

# **Benefits of Targeted Advertising**

Targeted advertising promotes a win-win situation for both consumers and businesses. In this section, we elaborate on the benefits for each stakeholder.

### **Consumers**

Behavioural targeting is a powerful technique employed by businesses to provide an enhanced customer experience tailored to the clientele's needs. By collecting information on the browsing behaviour of consumers online, companies are better able to serve them with the right products and services based on their individual preferences. For example, if a user is searching for cars on Google with the intention to buy one, then the company's ad network, AdSense, can quickly match him or her with the right advertising content from local car dealerships promoting their best deals. Moreover, the common misconception that people hate ads is not necessarily true. In most cases, users dislike irrelevant and annoying advertisements that are of no use to them (Winsauer, 2016). This is where targeted advertising comes into play. It solves this problem by analyzing consumers' browsing history and filtering out ads that do not match their liking.

Adlucent, an analytics and digital advertising agency, recently conducted a survey regarding online publicity where 71% of the respondents affirmed preferring ads tailored to their interests and shopping behaviour while 44% of them were also willing to provide personal information in order to get more of such advertising (Kirkpatrick, 2016). Hence, if there is to be advertising online, it is more efficient to have relevant ones that can be helpful to users.

Moreover, customized advertisements reduce search costs for consumers and enable them to discover new products and services aligning with their interests. The second-largest retailer in the United States, Target, has been employing behavioural advertising in a more traditional form since 2002 by mailing advertisements directly to consumers' houses using their in-store information such as purchase history and frequency (Harlynking, 2014). With online targeted advertising, such an activity becomes more effective to the recipient as they are not only presented with ads from a single store but from other brands that can fulfil their specific shopping requests. Adlucent also found that users are twice as likely to click on ads from unknown brands if they pertain to their interest, giving them the opportunity to explore new products and suppliers (Kirkpatrick, 2016). Additionally, instead of spending hours browsing online for a desired item in the presence of generic ads, a website with advertisements tailored to the needs of the user does not only increase the efficiency and the speed of the search but it also reduces frustration and the likelihood of not finding the required service or product. Thus, customized advertising largely benefits customers by expanding their range of selection while also shortening their time to purchase.

#### **Businesses**

For businesses, the rationale behind mining information for ad targeting is pragmatic - people are more likely to make a purchase if the product or service is relevant and intended to fit their specific needs and interests. Historically, businesses have struggled with collecting accurate and timely data on their customers. It was simply ineffective to rely on traditional market research strategies like user surveys and focus groups to precisely identify a potential customer. Moreover, with print and television advertising, businesses would reach thousands of viewers, however, many of which included those who had no need or desire for the advertised product. To put it differently, businesses were essentially gambling by deploying traditional advertising methods to sell their products. Consequently, companies would incur larger costs often for marginal sales figures.

With customer intelligence collected from data mining, businesses can now anticipate the needs and interests of users, enabling them to stay ahead of the curve. As a result, targeted ads allow companies to transition from mass-marketing to personalized-marketing at scale, often at lower costs. Typically, traditional advertising campaigns allocate large budgets to compensate for distribution of the creative and

the personnel conducting in-person market research for the advertisement itself. However, by outsourcing most of the research to mining algorithms, businesses realize significant cost-savings. Furthermore, since targeted ads increase the likelihood of purchase, businesses on average pay lower impression costs and lower costs per click. For instance, a recent cross-channel media cost comparison revealed that to reach 1000 people it would cost about \$28 via TV ads, \$16 via newspaper ads and only \$2.50 through online targeted advertisements (LYFE Marketing, 2018). By lowering costs, targeted ads also empower small & medium-sized businesses to market their products and compete with those of multinational corporations.

Lastly, by actively mining and evaluating customer information, businesses can attract recurrent customers. Since the cost of acquiring a new customer is extremely high for any business, deploying targeted ads not only helps discover new leads but also serve previous customers. Over time, targeting past shoppers fosters a level of familiarity between the business and the customer. This familiarity is vital for ensuring long-term customer retention and loyalty which in turn safeguards a predictable stream of revenues for the business.

## **Concerns Regarding Targeted Advertising**

Over the years, more and more user information, including geolocation, banking records, online purchases, publicly-available or government records, has become transparent for web applications to use. Numerous consumers are increasingly becoming alarmed that their browsing behaviour online is being tracked and used by businesses. To address this issue, we propose the arguments below.

Firstly, internet advertising is the primary source of revenue for many businesses online. Major companies such as Twitter, Yahoo, Google, and Facebook rely heavily on advertising revenue. In order to provide a free service, such firms depend on ads to sustain their business. As a result, businesses need to understand users' desires and preferences to support their ad-based business model. Without targeted advertising, online companies would be compelled to implement alternative payment methods such as charging users a premium for their products and services. This sudden charge can subsequently upset and deter many customers.

Secondly, users tend to feel more concerned about their privacy when advertisements are aggressively targeted to them, making it obvious that their information is being collected. Some businesses persistently spam customers through emails and pop-ups, in turn scaring away customers. Targeted advertising does not have to be this way. A more passive form can be promoted to ensure that users do not feel tracked or that their privacy is threatened. We believe that to encourage the desired win-win situation for both customers and businesses, a compromise must be reached. Businesses need to adapt their marketing

strategies to be engaging and not intrusive by regulating the frequency and intensity of their advertisements. Customers should be willing to trade some of their personal information so as to allow businesses to reach their audience through regulated yet relevant advertisements.

Finally, there is often a lack of customer awareness regarding the privacy policies of the services they use. For instance, Facebook clearly states in its Privacy Policy the type of information it collects from users, why the data is gathered, and how it is used and shared (Facebook, 2016). Netflix states that "We collect information about your use of our websites and applications. This may include your activities, your IP address, your browser type, your Internet service provider (ISP), referring/exit pages, your operating system or device type, date/time stamps, and related metadata" (Netflix, 2018). By utilizing the product provided by the company, users are implicitly agreeing to the terms and conditions outlined by the provider. Customers are free to opt-out if they are uncomfortable with the policies. However, we do not believe that it should be a take it or leave it situation. Instead, we suggest that online businesses should try their best to increase awareness of their privacy policies and address concerns users may have regarding the use of their sensitive information. This will favor a more trustful customer-business relationship and promote a win-win situation.

## **Conclusion**

The mining of information about potential customers from their browsing behaviour online is a crucial part of online marketing. Both players, customers and businesses, benefit largely from customized advertising. Consumers gain from an increase in shopping diversity and efficiency while being free from irrelevant ads. Businesses enjoy longer customer retention, reduced costs and a predictable revenue stream which ultimately lead to higher sales and profits. Therefore, targeted advertising leads to a win-win situation.

However, we acknowledge that consumers have existing concerns regarding the way their data is being collected, used, and shared. While many online businesses depend on advertising as their main source of revenue, they should adapt their advertising model to be less aggressive and more engaging. This will reduce customers' feeling of being tracked and having their privacy threatened. Furthermore, we believe that the conversation should not be about achieving absolute privacy but rather about encouraging transparency. This will help to uncover the underlying details of how companies are collecting and using customer information. In addition to their privacy policies, companies can proactively address concerns regarding customer privacy. They can provide a summarized format of such policies using layman terms that is comprehensible by all users.

In conclusion, we believe that using data mining for targeted advertising is important to promote online businesses and deliver a more personalized customer experience. Despite the pitfalls surrounding privacy, using data to target customers is a promising blueprint for advertising that is here to stay.

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