Case Study: Leveraging Big Data

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Abstract

This research paper carefully discusses the future of data analysis and how predictive modeling which is a part of data analyzing techniques is being used by various companies like Paypal and Amazon to analyze customers’ internet browsing history, financial transactions, and shopping preferences in order to achieve their business goals. Moreover, this paper examines deeply how companies benefit from using this technique and how this behavior also drives some ethical and dilemmas related to Customer Privacy.

*Keywords: Data Analytics, Predictive Modelling, PayPal, Amazon*

Introduction

Data Analytics is becoming more and more essential in business to understand problems facing an organization, and to explore data in meaningful ways with the aim of enhancing productivity and business gain. Among multiple data analyzing methods, predictive modeling is one of the important analytics which is defined as a mathematical process that seeks to predict future events by analyzing historical data and generating pattens that are likely to forecast future results (Rouse, 2018). It makes use of techniques such as machine learning and data mining to help business decision makers select the most suitable business strategies.

Nowadays, many companies like Paypal and Amazon have been applying predictive modeling methods by collecting and analyzing customers’ data using analytic algorithms to have access to customers’ internet browsing history, past transactions or purchase product information, locations, and so on. By having these data, these companies will then analyze customers’ buying behavior, and eventually, they can offer personalized advertisements to attract customers to buy related products in order to increase sales.

Based on this trend, we will illustrate the value that predictive modeling provides for companies, and consider the pros and cons of the value has brought to them and us as customers. Then, we may explore some ethical issues related to customer privacy, and the effects predictive modeling have on our society and economy.

Analysis

How Paypal and Amazon use Predictive Analytics

In order to stay competitive, financial companies and retailers use predictive analytics to slice and dice big data so they will know their customers’ preferences and next move. For example, Paypal, a leading online payment company, supports online money transfers between users who use email to identify themselves. It has been using transactional data and online data to predict customer behavior. Besides that, according to the case provide by DeZyre (2017), it uses Hadoop as a complementary data platform to handle exponentially increasing volumes and types of data. Also, it incorporates big data analytics to tie customer preferences and tastes, location, purchase history and user activity across multiple websites, to send personalized advertisements with discounts and offers.

Similarly, Amazon, a multinational technology company, also known as a leader in collecting, storing, processing, and analyzing personal information from each customer as a means of determining how customers are spending their money. It uses a comprehensive, collaborative filtering engine (CFE) which collects your past purchase history, your shopping cart, and your wish list, then it will recommend related products or other additional products that other people purchased before in order to sell you more. For example, when you add a pair of Under Armour running shoes to your online shopping cart, similar running shoes from other brands purchased by other customers will be recommended for you to purchase. In this process, Amazon's big data utilizes the power of suggestion to encourage you to buy on impulse as a means of further satisfying your shopping experience and spending more money (Wills, 2020). It is reported that this method generates 35% of the company’s sales annually.

According to a Goodreads study in 2013, Amazon also integrated social networking service of about 25 million users’ reviews to send e-book recommendations. Amazon provides a book rank in Kindle based on readers’ reviews and comments and regularly reviews words you highlighted or searched in your Kindle to determine what you are interested in learning.

Other than that, Amazon uses big data to set prices based on customers’ activity on the website, competitors’ pricing, product availability and other factors and offer discounts on best-selling items to attract more customers and increase profits. This is a great way to balance customers shopping preferences since lots of customers are trying to pursue for high quality products while are not willing to give up quality unless they have to.

The Pros and Cons of using Data Analyzation

There are some benefits of companies using personal shopping and online browsing history for predictive analytics. First of all, customers will be suggested or reminded without having to search for certain products they need which can save time and better enhance their lives if they find the suggested products are exactly what they look for. Second of all, it will allow e-commerce businesses to improve customer satisfaction and boost sales. In addition, it will help business organizations become more competitive than their competitors. Organizations can set business goals and strategies based on these customers’ thoughts which will help them gain important insights about the highest price that their customers want to pay for any product (“The importance of predictive analytics for e-commerce stores”, 2018). Therefore, it will eventually help businesses achieve their business goals.

Although predictive analysis can bring lots of benefits to businesses, there still some limitations of using customers’ browsing history to make business actions. As Bari et al. (n.d.) suggested, customer data sometimes could be incomplete and people don’t always provide accurate information. Also, customer purchasing patterns do not always tell the truth- with the impact of various factors changing from weather to moods. Moreover, customer behavior can change over time because of salaries, which is a direct factor to how much people can or want to spend.

Ethical Issues Related to Consumer Privacy

Although Big Data analytics provides great convenience to both business organizations and some customers, it is kind of controversial since it leads to problems of consumer privacy. There are some ethical issues that need to be considered. Customer data that includes phone numbers, home addresses or even financial information are pretty delicate and should be private and will not be shared with other businesses. Therefore, business organization which use predictive analytics actually have made these information more exposable if they lack data security techniques, so they should have some rules to avoid fraud and information leak. Personally, it should be policed and is required to have ethical guidelines or rules which should regularly reinforced when companies need to run analytical algorithms using customers data. It can be considered as a commitment to customers’ trust or loyalty whenever customers submit their personal information to companies’ system.

Conclusion

We are surrounded by the use of data and benefit from them. Big data analytics has become an inevitable trend in our society and impact every aspect of our life especially economy.

Predictive modeling serves as a useful tool for business organizations by accessing customer data and browsing history to increase sales and enhance customer satisfaction.

There are also a few ethical issues that companies need to address when they are accessing customer’ personal information. In order to better protect customer privacy, ethical guidelines should be set and reinforced.

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