Application of Data Analysis in E-commerce

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Abstract. This paper studies the application of data analysis in e-commerce. After providing the benefits given by digitalization in the fields of finance, operation and monitor, this paper suggests that managers should pay enough attention to the application of data analysis in the modern corporate management. data analytics plays a very important role in e-commerce, because it helps a business know clearly about their current situation and future. So, managers should be familiar with applying it to e-commerce

Keywords: Digital; Application; E-commerce.

1. Introduction

Data is critically important in the e-commerce industry as said by Geoffrey Moore, "Without big data analytics, companies are blind and deaf, wandering out onto the web like deer on a freeway", who is a management consultant and author of Crossing the Chasm.

This paper analyzes the status quo, opportunities and challenges of e-commerce market, as well as the application of data analysis. With the development of electronic technology and mobile payment like paypal, the progress of e-commerce is visible to the naked eye. At the same time, the epidemic has also provided a very important opportunity for e-commerce. However, with the increasingly fierce competition, e-commerce platforms will encounter different degrees of challenges. Therefore, data analysis plays a crucial role in helping enterprises to survive in the market.

The life of the e-commerce industry has lasted more than 40 years. In the 1970s, e-commerce originated with the introduction of early technologies, such as telemarketing and Electronic Data Interchange (EDI).

The history of e-commerce has a strong link to the history of the Internet. Online shopping developed slowly when the Internet began to open up to users in 1991.

Nowadays, E-commerce is getting more and more developed. And below are some future trends of E-commerce that show the opportunities and challenges of E-commerce. Firstly, According to a survey by McKinsey, 20-30% of businesses moved from offline to online when the pandemic exploded; The internet penetration rate of grocery has reached a stable value of 9-12% at the end of 2020. Moreover, as the categories of products that customers are inclined to buy through online channels expand broadly, Walmart has begun to grow its online business for groceries in 2021. Furthermore, eMarketer says that its sales of similar products this year will exceed that of Amazon. Secondly, social media shopping is developing rapidly, which is a great opportunity for E-commerce. It is reported that social commerce has contributed to the 3.4% of the total sales volume of e-business in 2020, and this figure is growing fast. However, E-commerce will have lower loyalty, which might be a challenge for the E-commerce market. According to eMarketer, more than 80% of shoppers show that they are more willing to buy a different brand compared with the past which is a trend that emerges at the beginning of the pandemic. Sixty-five percent prefer lower prices and fifty-one percent change their past preference because of out-of-stock.

In general, the development of e-commerce has changed a lot during the pandemic. E-commerce platforms are facing more opportunities brought by the pandemic, but it has also brought different degrees of challenges to different e-commerce companies in the market. Therefore, data analytics plays a very important role in e-commerce, because it helps a business know clearly about their current situation and future.

2. Application

There are many applications of data analytics used in E-commerce. Below are some examples of those applications.

2.1 Operation

Business can analyze the visitors to your site, and use that data to make improvements to your site, as well as analyze the behavior of your visitors, which helps companies to have a general understanding of the operation of the e-commerce platform.

Companies not only need to pay attention to UV and PV, but also need to pay attention to traffic quality indicators such as bounce rate, page length, page visits per capita; As well as membership indicators, such as the number of registered members, membership repurchase rate, active members and so on.

2.2 Finance

Control from the flow, orders, overall sales performance, overall indicators, at least, how the operation, loss or profit. In this regard, you can monitor your platform's, transaction and sales dollars, gross margins, and so on. Company can analyze data from order to payment process to help you improve product conversion rate.

In this regard, companies need to integrate shopping cart related metrics such as number of additions to the cart, number of items, and cart payment conversion rate. E-commerce also need to keep an eye on payment metrics and transaction metrics.

2.3 Monitor

In addition, it is important to monitor the effect of an activity to the e-commerce website, and monitor the advertising indicators, as indicated in Figure 1.

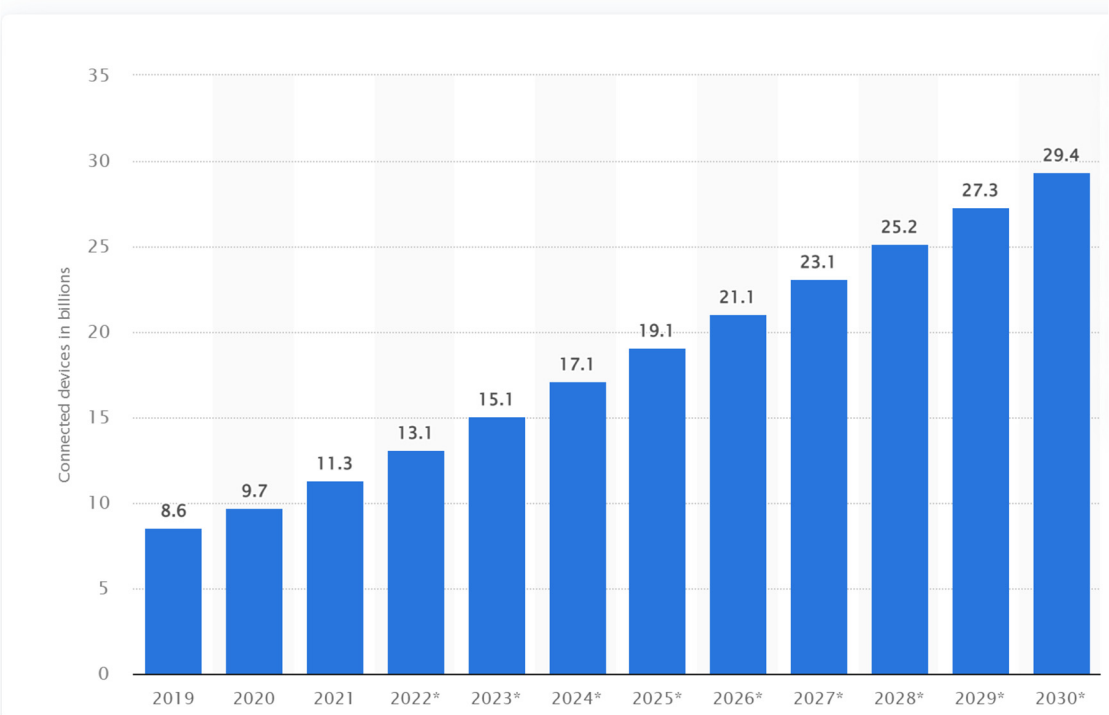

Figure 1. Connected device

People's lives are becoming more and more digital, so more and more places need people to use data analytics.

It is estimated that there will be about 75 billion IoT devices in the world in 2025, triple the current number. As a result, the amount of data available for analysis will soar.

2.4 Others

Machine learning, artificial intelligence and natural language processing will become the main tools for data analysis..

Machine learning is a way to automate analytical model building, which is a branch of AI. Its main task is to first train the algorithm according to the input data, then find patterns and correlations, and finally make the optimal decision independently.

Artificial intelligence is to produce a new kind of intelligent machine that can react in a similar way to human intelligence. Natural language processing refers to the technology that uses language such as text and voice used by humans communication to communicate with machines.

This increase in data availability and processing power will unlock greater scale and more detailed insights into how data will be used in all aspects of our lives.

Such data helps companies make better decisions and adjust prices for customers in real-time.

3. Conclusion

The results of this paper show that digitalization can help enterprises in many ways. Business managers should pay attention to this.

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