Analysis and Research on Application of Data Mining Algorithm Technology in E-Commerce Platform

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Abstract. In today's era, the effective use of data technology can not only benefit the development of enterprises, but also help to promote the progress and development of society. This requires enterprise technical personnel to strengthen the understanding of data technology, in order to make better use of data technology and play the role of data mining technology. This paper expounds the data mining technology and discusses its application in e-commerce, hoping to provide reference for relevant enterprises.

Keywords: Data mining technology · E-commerce · Enterprise

1 Introduction

With the development of the times, the development of various industries are constantly combined with data technology, and has made great progress. The application of data technology usually needs the support of a large amount of data information to achieve the purpose of effective use of big data technology. In order to obtain more data information, we can use data mining technology [1–3]. Data mining technology is based on the characteristics of information in the network, to achieve the collection of similar information, and then make targeted analysis. Technicians can combine data mining technology with e-commerce to promote the development of e-commerce enterprises in China.

2 Overview of Data Mining Technology

In e-commerce, customer browsing information is automatically collected by web server and saved in access log, reference log and proxy log. The log file can be divided into service logs, errors logs and cookielog. In e-commerce, data mining technology is used to analyze user's access behavior, And use data mining ideas and related methods to process the data to get the relevant information of the user groups. According to the relevant information, we can launch targeted marketing measures, make use of the customer characteristics with group similarity, and control more targeted business activities, It will achieve better economic benefits. Through data mining technology, relevant enterprises

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can accurately locate the market, and according to the characteristics of the market, it can not only improve the market objectives, but also effectively enhance the competitiveness of enterprises in the industry.

For example, through data mining technology, we can more systematically analyze the customer group's preference for a website or a product, and we can also get the publicity channel results through the frequency of customer visits [4–8]. In this way, we can better optimize the publicity channel, and optimize the focus of publicity according to the user's transaction situation, so as to strengthen the marketing strategy and achieve better economic benefits.

3 E-Commerce Recommendation System

Sub commerce recommendation system, that is, using e-commerce website to provide customers with help to understand more content and provide customers with more choice reference, can act as a simulation salesperson to help customers make the decision whether to buy or not. In the specific application process, in the process of customers visiting the network site, the business recommender system will analyze customers' purchase behavior habits, and then give users the promotion of similar products. General users will be interested in the recommended products, and enhance their purchase intention. At present, business recommendation system mainly includes analysis recommendation, attribute recommendation and item relevance recommendation.

3.1 E-Commerce Push Technology

Recommendation technology of e-commerce system mainly refers to the operation method of data mining technology. The accuracy and efficiency of system transportation will directly affect the service quality of recommendation system. At present, in order to effectively ensure the reliable application of the recommender system and the real-time performance of the system, data mining researchers have studied the clustering, association rules, collaborative filtering and other technologies. Methods based on e-commerce calculation can be divided into two kinds of technologies, namely model-based recommendation algorithm and memory based recommendation algorithm. Model based recommendation algorithm is to build a model according to user data. In the specific application process, the model needs to be transferred into memory. Model recommendation algorithm can build models through various technologies, such as Bayesian technology, clustering technology, etc.; recommendation algorithm with memory, that is, in the process of running, the whole user's data needs to be transferred into the memory, and then personalized data recommendation is given according to the data left by the user browsing the commodity website. The computing materials of this technology can be collaborative filtering algorithm, association recommendation algorithm and so on.

3.2 Application of NEB Data Mining Technology in E-Commerce

As one of the important ways to find access path, path analysis realizes the investigation and data analysis of user access under the function of veb server. By mining user access

path, it obtains user access information, so as to grasp user interests, realize targeted design, and provide better services to users. The knowledge process of browser acquisition is path pattern mining. In the process of subgrade pattern mining, there are three contents. First, browse the information of each station, and obtain the specific access path, including the previous reference and the subsequent reference. By mining the forward reference information, we can delete the worthless information in the back reference in time. Secondly, the maximum reference sequence is obtained. If the information in all forward references is greater than the threshold sequence [9, 10]. If each site is regarded as an item, when searching for the maximum reference sequence, it is necessary to find out the maximum item set according to the association rules. Both of them should meet the requirements that the disposal of the occurrence should be greater than the specific value. According to the rules, the value of a "B" with a certain confidence in transaction set D is C. if D contains a transaction and includes the percentage C of B, the specific formula is:

$$\text{support}(A''B) = P(A \cup B) \tag{1}$$

$$confidence(A''B = P(A|B)) \tag{2}$$

4 Application of Data Mining Technology in E-Commerce

4.1 E-Finance

In today's era, electronic finance is a product of very advanced development, for example, people can realize consumption, financial management and other financial realization through WeChat, Alipay and other software. Based on the records of people's consumption using electronic money, data mining technology can effectively predict people's consumption trend. Through the prediction of consumption records, relevant enterprises can provide more perfect services, stimulate people's consumption and promote the development of enterprises. In addition, as the bank credit card, insurance industry, etc., we can also use data mining technology to predict people's deposit and loan trends through the consumption situation of consumers in the network, and then optimize the deposit and loan strategy, so as to enhance the business volume of enterprises and make enterprises obtain more profits.

4.2 Customer Relationship Management

In the process of e-commerce operation, we need to keep close contact with customers. Only by strengthening the understanding of customers, can we deal with the relationship with customers, provide better services for customers and increase the business quota. Specifically, based on the e-commerce model, staff can use data mining technology to analyze the characteristics of customers using electronic software and understand customers' behavior, which is convenient for enterprises to recommend targeted products for customers, so that customers can pay more attention to the products they are interested in, so that customers can improve their consumption intention [11, 12]. The correct analysis of customers' life rules is conducive to the enterprise to deal with the relationship with customers, and ultimately promote the growth of the enterprise.

4.3 E-Commerce Marketing

Under the mode of e-commerce, enterprises generally promote their products by means of web page or software app, which not only facilitates people's life, but also becomes a generally recognized shopping channel at this stage. For better marketing and development of enterprises, when using software app channel marketing, enterprises can use data mining technology to analyze customers' purchase intention. For example, data mining technology can be used to analyze the items in customers' shopping carts, collect information about the products concerned by customers, and then recommend similar products to customers. This can not only help customers compare the same products, but also help enterprises make profits. In addition, because e-commerce enterprises will launch some activities from time to time, at this time, the marketing department of e-commerce enterprises can also timely recommend some activities to consumers, which is bound to increase the number of transactions in the process of e-commerce.

4.4 Business Data Analysis

In the process of e-commerce marketing, consumers generally focus on the marketing volume of a single commodity, and are willing to buy the products of enterprises with more sales. For example, when consumers buy a product, they will visit the online store of the seller according to the sales volume, and then decide whether to buy it or not. At this time, the responsible unit of e-commerce software needs to use data mining technology to realize the sales data analysis of similar products. Only when e-commerce enterprises provide enough good services, can they satisfy Gu Jiao, increase business volume, and finally make e-commerce enterprises better and more competitive.

5 Concluding Remarks

Nowadays, information technology is very developed. In the development of enterprises, the application of information technology is of great significance. Managers should master enough data information, and then use big data mining technology to analyze, so as to help managers make scientific decisions and make enterprises develop healthily. In order to obtain a large amount of data information, enterprise managers need to recognize the important role of data mining technology, especially in the context of e-commerce model becoming more and more popular. If enterprises can effectively use data mining technology to mine and analyze market information, it is bound to help enterprises make better marketing plans, and finally make the development of e-commerce enterprises in line with the development of the times.

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