Application of Big Data Technology in E-commerce

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Abstract: Big data is a new type of conceptual content in recent years. Through the application of big data, it can effectively analyze massive amounts of data and associate various data together, which can have a positive significance for various social productions. This article summarizes the application advantages of big data technology in e-commerce based on previous work experience. The author also discusses the application of big data technology in e-commerce field from investigating target market, optimizing internal management, carrying out precision marketing and optimizing credit evaluation these five aspects of brand effect.

1. Introduction
The continuous development of the economy in the data era provides many convenient conditions for people's lives. At this time, the distance between people is no longer far away. With the support of the actual network data platform, information data needs to be collected and sorted out well, and according to the final data integration, create favorable conditions for the development of e-commerce. In general, with the help of big data technology, the development model of e-commerce is becoming more and more perfect, and it can provide more data support and development momentum for e-commerce, and maintain the overall stability of the field.

2. Overview of the Application of Big Data Technology in the Field of E-commerce

2.1. Customer Experience
At this stage, the key point for e-commerce companies to attract customers is the interface structure and functional design in different e-commerce sites, which can bring users as many unexpected experiences as possible. In a similar experience, many e-commerce companies will use big data technology to analyze and summarize users to understand consumers’ personal preferences before users trade. Later, with the help of historical record modeling, this operation also relies on big data technology. At the same time, the web mining technology is used to improve the keyword weighting method, allowing users to get quick extension and expansion through keyword input, and make the product more accurate retrieval function. When the enterprise understands the user’s consumption habits, it can properly adjust the entire page to help the user find the product that suits him as soon as possible. For example, Taobao will categorize the percentage of related product visits and browsing groups in the page layout design to increase the return on advertising investment. In general, with the help of big data technology, the e-commerce platform can accurately meet the personalized needs of users, and at the same time, it can increase consumer satisfaction with consumers, creating more favorable conditions for the subsequent development of enterprises.
2.2. Marketing
After the introduction of big data technology, e-commerce companies can save some marketing costs and time. Big data technology has the ability to mine and process massive amounts of data, which can help companies establish a user-centric precision marketing system. The establishment of the system is mainly based on big data technology. On different network platforms, various e-commerce companies can classify users' personal information and dynamic browsing habits, and paste different "tags". This also involves a lot of basic labels, such as consumer buying psychology, purchasing power. In the follow-up, companies can gather these label content together to establish a precise marketing system in the field of e-commerce. Throughout the application of the entire system, cross-platform, cross-terminal and other features can be presented, and the actual form of advertising has become more diversified. At this time, the relevant staff can use the user portrait operation of the label system to realize the in-depth mining of user value. This involves a very wide range of content, and we can extract and collect data from multiple systems to create favorable conditions for subsequent work.

2.3. Customer Management
In the process of customer management, e-commerce enterprises can also apply big data technology, divide customers into ordinary users and core users, and establish a member credit rating system. In addition, through all representative e-commerce platforms, relevant staff can rely on the big data technology and the seller's consumption behavior to achieve quantitative and qualitative analysis of credit. In addition, consumers can also rely on the merchant's product sales and service quality to realize the tracking investigation of the seller's credit, which is also the basic evaluation process of their credit. All in all, e-commerce enterprises can rely on a two-way credit rating system to better maintain and optimize the system and normative content in the transaction process of all parties, which is also the root of maintaining the healthy development of related industries. At the same time, it can be seen from the entire e-commerce business customer feedback link that many large e-commerce enterprises in China can show high efficiency when processing massive business data, and present more high-value commercial data content. After implementing the above operations, valuable information can also be classified, creating favorable conditions for enterprises and individuals, and providing more accurate customer feedback information for the same industry or upstream and downstream enterprises. China's O2O user size from 2009 to 2014 is shown in figure 1.

![Figure 1 China's O2O users from 2009 to 2014](image)
3. Research on User Shopping Behavior Based on Big Data Technology

3.1. Optimize Users' Shopping Experience
From the traditional data analysis, we can understand that the merchants do not have a good grasp of consumer information and consumer data, and data processing is extremely difficult. This also makes it impossible to keep information and data in sync, resulting in a very limited commercial value, causing delays or outdated commodities. In contrast to the application of big data technology in the era of big data, relevant staff can perform effective integration and development based on traditional data services, so that innovative technologies can be developed to all consumers, which is also the basic optimization process for users' shopping experience. For example, in the early stages of e-commerce enterprise development, it was possible to establish corresponding transaction data information with the help of effective data and platforms, but due to many problems in data integration, a large number of users were lost, and eventually had to choose to close all e-commerce businesses.

3.2. Provide Product Traceability Services
In general, during the entire e-commerce enterprise development process, it is susceptible to the impact of fake products and counterfeit products, and it will also lead to a substantial decline in the e-commerce economy. From an enterprise development perspective, the original source of business cooperation is integrity. The information processing of actual e-commerce will also give priority to honest merchants. Then, with the help of encryption algorithms and anti-counterfeiting marks between blocks, it will do a good job in information processing. This is also the basic process of product information update. Maintaining the authenticity and validity of information can allow product transportation to be handled in a reasonable state. Resolutely avoid deceiving consumers in the form of sub-charging to get more benefits from it. For example, during the development of domestic brands, relying on blockchain technology to update and inquire from the production to consumption process, consumers can feel the sincere service of the merchants, and ultimately allow consumers to effectively protect their own rights and interests.

3.3. Provide Users with Personalized Services
In the process of traditional e-commerce operations, the platform will establish an effective consumer circle, which is also the process of dividing the consumer group. However, it can be seen from the subsequent development process that traditional e-commerce operations cannot meet the personalized needs at this stage. Therefore, people need to mine more elaborate data operations and replace traditional data operations. Big data technology can effectively solve the above problems, not only can meet the personalized needs of users, but also provide them with more preferential consumption opportunities. For example, Taobao is the leader of the current e-commerce economy. The platform will attract consumers by pushing personalized consumption and personalized demand, and finally complete "collocation" consumption to ensure that merchants can obtain more economic benefits in the operation process.

4. Application of Big Data Technology in E-commerce

4.1. Investigate the Target Market
It can be seen from the development process of e-commerce enterprises that the actual development goals are not limited to a specific area, but to the whole world. Especially in the development of cross-border e-commerce, it is necessary to do a good job of data inspection and market research in the early stage. Actual e-commerce cannot completely replace physical sales. Only by relying on a large amount of data survey can we better display the advantages of e-commerce and the actual situation in the local area, understand the consumer culture and consumption concepts therein, and make the final consumption decision more relevant. reason. In addition, the relevant staff should also rely on big data
technology to do a good job in data upload and data evaluation, and establish a perfect product sales plan. For example, companies can combine online and offline sales methods to effectively package and sell. In general, with the help of the application of big data technology, consumer data can bring counterproductive support to the consumer market, understand consumption factors and consumption average related data, and bring more guarantee for subsequent market funds and profits. Throughout the survey of my country's main e-commerce target market, the development speed is extremely fast. Relevant data shows that in 2017, the rural online retail quota reached 1,244.88 billion yuan, a year-on-year increase of 39.1%, and it successfully exceeded 1.6 trillion in 2018, an increase of more than 35%. From a global perspective, the number of Internet users has exceeded 3.5 billion, and China alone has 904 million people, which has also created a favorable foundation for the development of my country's target market...

4.2. Optimize Internal Management
When applying the big data technology, the e-commerce enterprise can not only present the external business value of the e-commerce enterprise, but also connect the big data technology with the internal management model. In general, big data technology can help internal employees perform corresponding daily management tasks. With the help of big data technology, they can optimize and integrate the entire recruitment information and present better recruitment results. As for the control of promotion channels, the data also represent hard conditions, which can clarify the specific promotion ability and effect. In comparison with the traditional management model, the data management model supported by big data technology can make the human resource management model more optimized and provide data support for enterprise development.

4.3. Carry out Precision Marketing
If the application of big data technology is interpreted from a practical perspective, it cannot show the substantial characteristics of the items. Therefore, in the virtual network, enterprises should not only pay attention to their own image, but also fully consider the product quality and marketing model of the enterprise. E-commerce companies can use the relationship between big data blocks to help customers consume with the help of users and establish new corporate consumer brands. At the same time, maximize the relationship between brands and products, strengthen horizontal comparison and functional services, and create favorable conditions for the increase in sales. In addition, it can be seen from the mobile client data that many young consumers will have a large amount of capital output in smart mobile devices every year. These main consumers of consumption consume through mobile devices, and they can also publicize and share their experience in their social circles, which has an impact on potential consumers. Therefore, with the help of publicity in the social circle, it is possible to better display the characteristics of big data technology, break through the limitations of the traditional model, and improve the reputation of its own products.

4.4. Optimize Credit Evaluation
In the development process of the e-commerce field, the open advantages and virtual disadvantages of e-commerce are mainly presented, which also involves some artificial and systematic failures. In addition, coupled with some irresistible factors, the credibility of e-commerce companies will decline significantly. Especially in the development of cross-border e-commerce, external foreign exchange issues must be completely resolved. Relevant staff can use big data technology to shorten the distance between the world, with the help of a fair and objective credit evaluation system, display the consumption data of both parties of shopping, which greatly protects the rights and interests of consumers and protects consumer privacy. As e-commerce companies are vulnerable to the invasion of criminals, more information security issues are triggered. To this end, companies must achieve multiple authentication of users' own information to avoid the impact of buyer and seller information security.
4.5. Branding Effect

It can be seen from the application of big data technology that my country has mastered its essence, the application process is very complete and mature, and it can also show a strong advantage in cross-border. In practical applications, each e-commerce enterprise must first obtain user recognition and approval, and then extend to the product data level based on customer data, so as to achieve longitudinal analysis of customer consumption data. In order to obtain the user's specific age group, as well as product preferences and consumption capabilities, and obtain the best information data by comparison, and finally formulate corresponding product push and discount strategies. Relevant staff also need to understand the basic situation of competitors according to the data reverse situation, and then formulate a series of marketing methods, which is also the basic process of enhancing user consumption experience. For example, in the first half of 2018, my country's e-commerce retail sales reached 4.08 trillion yuan. Among them, the online retail sales of physical goods was 3.13 trillion yuan, a year-on-year increase of 29.8%. From a market share perspective, Alibaba is far ahead, with a stronger brand effect, with a combined market share of 58.2%. It should be noted that in recent years, the major e-commerce platforms have not only continued to work online, but also spent a lot of time on the offline layout in order to better create a brand effect. For example, the current JD convenience store under JD.com has covered many areas of the country, and Suning.com has continued to increase the layout of common Internet stores offline.

5. Conclusion

In summary, the field of e-commerce is one of the key contents of the application of big data technology at this stage, especially in the span of e-commerce, the achievements of the application of big data technology are particularly obvious. However, it can be seen from the development of my country's e-commerce industry that the application of big data in this field is still in its infancy, and some contradictions and problems remain unresolved. For this reason, people can optimize the user experience according to the actual development of the e-commerce field, and avoid the interests of buyers and sellers from being affected.

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