

Research on the Integration of Big Data Technology and Precision Marketing in E-commerce Enterprises

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Abstract: With the development of Internet information technology, the era of big data has come. Based on the background of big data and the current situation of precision marketing of Chinese commercial enterprises, this paper analyses the impact of big data technology on precision marketing of e-commerce enterprises, and puts forward the integration approach of big data technology and precision marketing of e-commerce enterprises from the aspects of establishing large data precision marketing model, precise market positioning, personalized recommendation and customization. Finally, the safeguard measures of large data precision marketing are put forward.

1. Current Situation of Precision Marketing of E-Commerce Enterprises in China

The development of e-commerce in China originated in the 1990s, and its scale and speed of development are very rapid. According to the survey data of China's e-commerce trading platform statistics bureau, China's e-commerce trading volume continued to grow from 2013 to 2017. In 2017, China's e-commerce transactions amounted to 29.16 trillion yuan, with a rapid growth rate.

Precision marketing refers to the individualized service system that enterprises communicate with customers by means of modern information technology on the basis of accurate market positioning, thus realizing a low-cost and measurable market development path for enterprises.[1] Because precision marketing has many advantages, such as low cost, good efficiency and high efficiency, in recent years, with the continuous development and growing competition of e-commerce industry, some e-commerce enterprises in China began to use precision marketing strategy. The common practice is that when consumers browse the relevant goods of interest, the system will automatically recommend the products they may buy and are interested in to consumers according to their online consumption and browsing records, thus facilitating the possibility of consumers' one-time or second-time consumption. In addition, e-commerce enterprises also use the data information of micro-blog, micro-mail, QQ, community and other platforms to conduct in-depth collation and analysis, so as to infer the services or commodities consumers may need in the future, and then targeted advertising.

However, there are some problems in the application of precise marketing strategies in China's commercial enterprises, such as limited understanding of precise marketing, lack of effective use of data resources in marketing decision-making by virtue of experience, difficulty in achieving precise marketing through single communication in marketing process, lack of value-added services for consumers, inadequate data mining technology, network infrastructure is relatively backward, and lack of complex precise marketing personnel and other issues.[2]

2. The Opportunities and Challenges of Big Data Technology to the Marketing Model of E-Commerce Enterprises

The surface meaning of big data is that the total amount of data is very large, and its deeper meaning is to collate and analyze the data through professional means. Nowadays, through the analysis and collation of large data with relevant special tools and specialized technical means, the

original seemingly "useless or low unit value" database can be indirectly transformed into the business value of the enterprise, thus bringing great help to the decision-making and business activities of the enterprise.

With the continuous development of the times, more and more industries and fields pay more attention to the investment of big data technology and grasp the commercial value it brings. CCW Research shows that with the in-depth development of artificial intelligence, Internet and other related technologies and concepts and their application to the market, China's large data market has great potential for development. The development scale of big data market in 2019 may reach 2.06 billion yuan, and that in 2021 may reach 51.4 billion yuan. Thus, big data has become a torrent to promote the development of e-commerce enterprises. It is no exaggeration to say that the competition of e-commerce enterprises in the future will largely be the competition of e-commerce enterprises' ability to use big data.

2.1. The Opportunities of Big Data for Business Enterprises.

Large data has a large data capacity and a wide range of data types, such as unstructured data such as user browsing records, dynamic behavior trajectories, consumer preference analysis and so on. Through collecting and sorting out data, e-commerce enterprises can further analyze consumers' consumption habits and satisfaction after consumption, adjust product types and production and trading processes according to users' information feedback, formulate reasonable marketing strategies, improve personalized service system, enhance consumers' user experience, establish long-term, stable and trustworthy friendly relationship between customers and platforms, effectively improve the level of e-commerce services, reduce transaction costs and improve customer delivered value. [3]

2.2. The Challenge of Big Data Development to Business Enterprises.

E-commerce enterprises use big data technology to promote the innovation of enterprise marketing mode, and help enterprises to grasp the market more comprehensively and accurately. But at the same time, it also brings some challenges to enterprises invisibly. For example, at present, many e-commerce enterprises have strengthened the collection and integration of online personal commodity browsing records, behavior browsing trajectories and other information of consumers, and through further analysis to tap consumers' consumption potential and future purchasing tendency. However, the lack of data security protection in enterprises and the lack of a rigorous system management model for user data can easily lead to the leakage and abuse of consumer personal information. In addition, although the current cloud computing applications are very popular, the technical level continues to improve, but in the actual application process, the cost of investment is too high, the general small and medium-sized e-commerce enterprises are difficult to bear, and so on.

3. Integration of Big Data Technology and Precision Marketing in E-commerce Enterprises

3.1. Precision Marketing Model of E-commerce Enterprises in the Background of Big Data.

Under the background of the rapid development of big data technology, it is an inevitable trend for e-commerce enterprises to use big data for accurate marketing and improve marketing effect. Firstly, e-commerce enterprises need to collect consumer data and subdivide the consumer market on the basis of the collected data. Secondly, market research, data screening and data supplement are carried out for market segmentation. Thirdly, we construct a consumer database to map the unique consumer preferences and perceptions of different consumers according to the data of different consumers, and finally present them in the form of "user portraits". Fourthly, the enterprise carries out in-depth analysis of the massive data contained in the database, develops the deep-seated commercial value of the data, and formulates the market development strategy of precision marketing based on the development status of the enterprise itself and the characteristics of the products it operates. Fifthly, through the transaction data of consumers and the feedback of

consumers, we test and evaluate the precise marketing strategy, find out the deficiencies of the strategy, and further subdivide the consumer market on this basis, improve the user portrait of consumers and other content, so as to formulate a more perfect and accurate marketing development strategy. As shown in Figure 1.

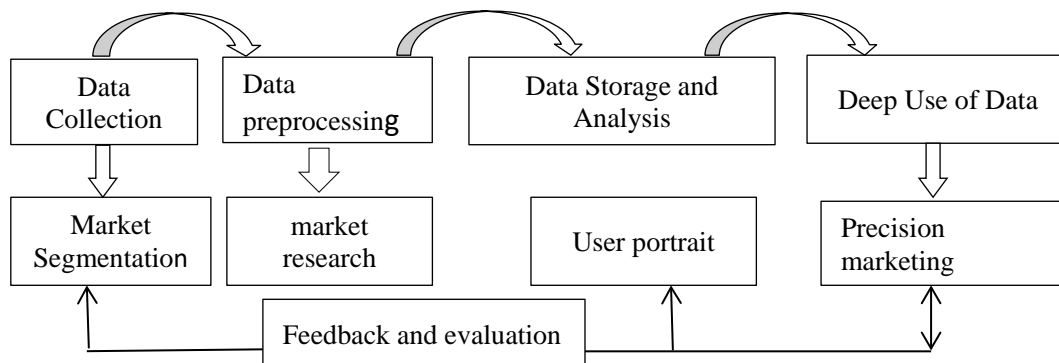


Figure 1 Model of Precision Marketing System in Big Data Era

3.2. Accurate Market Positioning based on Consumer Data and Value.

Consumer data is the source of large data precision marketing. E-commerce enterprises can obtain relevant consumer data through user data, social networks, mobile networks and so on. Through data, enterprises can accurately segment and locate consumers, as shown in Figure 2. By classifying and integrating the basic information and behavior data of consumers, we can analyze the comprehensive analysis data of customers' purchase habits, purchase preferences, purchase ability and brand loyalty. E-commerce enterprises can systematically integrate the scattered user data information by building a large data sharing platform to help enterprises dig deeply the characteristics of market demand and user purchase behavior, and accurately locate the market. Under the background of big data, e-commerce enterprises advocate consumer lifelong value management. In the construction of large data sharing platform, they should also realize the common use with existing customer relationship management system, promote the accurate analysis and screening of marketing strategies, and accurately transmit demand.

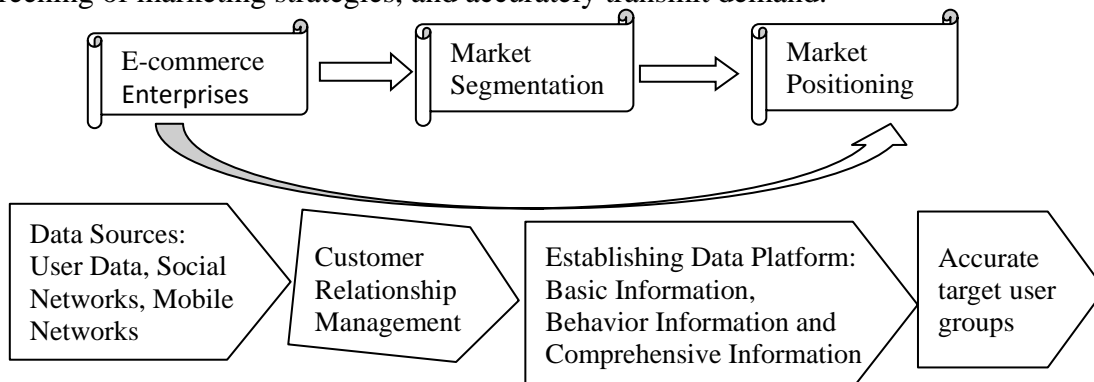


Figure 2 Establish accurate market positioning flow chart

3.3. Personalized Recommendation and Customization Using Large Data.

E-commerce enterprises will accumulate a large amount of user data information in their business. Through the use of big data technology, they can deeply mine and analyze user data, so as to obtain the common and individual needs of different consumers. On this basis, personalized recommendation and customization of products are carried out. Personalized recommendation is a precise marketing method of big data being used by e-commerce enterprises. Based on user database and commodity database, e-commerce enterprises use big data mining technology to extract models from user data and commodity data, establish user portraits and commodity portraits, match them, and process them with personalized recommendation system, so as to achieve accurate

recommendation. Under the background of big data, personalized customization strategy is more precise. E-commerce enterprises dig out users with private customization needs through user comprehensive data analysis, and form "user portrait" through deep analysis of large data. Then, combined with user's product description, they produce products that meet customer's requirements and are suitable for customers and recommend them to customers. However, at present, this customization is often aimed at high-level customers, and its product quality and price are also up-market consumer line. [4]

3.4. Using Big Data to Achieve Precision Advertising and Network Communication.

On the basis of large data analysis, e-commerce enterprises put in targeted commercial advertisements to promote consumers to effectively obtain the content of goods of interest, and then to facilitate the purchase of goods. Through the detailed analysis of big data, timely delivery of information, including pushing specific commodity information to target customers, or recommending specific commodities when consumers need commodities, or according to the big data analysis, consumers may buy goods in the future time nodes, and then expire to carry out appropriate message reminders, guide consumption. One of the important characteristics of e-commerce enterprises is to use the Internet to disseminate information about enterprises, products or services. Nowadays, with the development of mobile communication technology, more and more e-commerce enterprises regard microblog, Weixin, QQ, various community forums and other network media as the battlefield of market competition, because these network media enterprises have a large number of customer information and social data resources. While recording daily user behavior data by using data platform, enterprises collect data information from competing enterprises and outside industries extensively, establish databases, strengthen data interaction of data platform, analyze consumer behavior, divide consumer groups, and formulate precise products, prices, channels and promotional policies.

4. Guarantee Measures for Precision Marketing of Big Data in E-commerce Enterprises

4.1. Pay Attention to the Construction of Data Platform and provide data Guarantee.

The effective implementation of precision marketing can not be separated from data support. The foundation of large data precision marketing system is to build a perfect consumer information database. We should constantly strengthen the construction of network hardware facilities, improve data mining technology, improve the security of data platform, and escort the precise marketing of enterprises.

4.2. Constructing Reasonable Precision Marketing Organizations.

Implementing precise marketing strategy in e-commerce enterprises requires the coordination of multiple departments. E-commerce enterprises should further clarify the division of labor, establish large data centers and improve the efficiency of internal communication on the basis of establishing a sound organizational structure. Functional departments should actively cooperate with and support the implementation of enterprise large data precision marketing strategy. [5]

4.3. Strengthen the Construction of Big Data Precision Marketing Talents.

E-commerce enterprises need to strengthen the training of relevant data talents and precision marketing talents inevitably with the help of large data related technologies for precision marketing. For e-commerce enterprises, the key to the correct use of large data precision marketing is to train people who are familiar with the operation business of e-commerce enterprises and are familiar with the application of big data technology. Such a person must have several years of marketing experience in the e-commerce industry, at the same time, understand the data analysis and data mining technology, and define the network marketing optimization and network promotion technology. There are various ways to acquire talents with the above requirements. In addition to external recruitment, they can also be acquired through internal training. Enterprises can select key personnel, train them in big data, precise marketing and other aspects, and cultivate large data

precise marketing talents.

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