



## Research on the Precision Marketing and Optimization of Pinduoduo in the Context of Big Data

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**Abstract:** Precision marketing is widely used in mobile applications at present, and big data provides a technical foundation for precision marketing. Precision marketing refers to the use of big data technology to push marketing content to target users through various new media to maximize marketing effects. The implementation of precision marketing through big data has the characteristics of accuracy, large amount of data and target customer-oriented. As an emerging Chinese e-commerce enterprise, Pinduoduo positioned itself as the pioneer of new e-commerce. It is the third-party social e-commerce application focusing on Customer-to-Manufacturer group shopping, that is, with the original social group shopping as the core mode. On the basis of previous research, this paper analyzes the advantages of precision marketing for Pinduoduo under the background of big data, including reducing marketing costs, improving marketing efficiency, reducing the cost of meeting target customers and flexibly adjusting marketing strategies. Pinduoduo still faces some problems despite its rapid development, including the fatigue of target customers due to a large amount of information push, lack of professionals proficient in big data analysis, the possibility of data security risks and the imperfect legal and regulatory system related to big data and precision marketing. Finally, this paper puts forward some suggestions to optimize the precision marketing of Pinduoduo under the background of big data from four aspects: respecting the choice of target customers, introducing professionals related to big data analysis and mining, training on data security knowledge, and further improving laws and regulations related to big data and precision marketing.

**Keywords:** Precision Marketing, Pinduoduo, Big Data, E-Commerce

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### Introduction

Precision marketing is a very popular marketing term at present, which refers to the use of big data technology to push marketing content to target users through various new media to maximize marketing effects. Big data is a new technical term that refers to the efficient processing of massive amounts of data. Precision marketing and big data complement each other. Compared with the traditional marketing mode, the implementation of precision marketing through big data has the characteristics of accuracy, large amount of data and target customer-oriented. Accuracy refers to accurately finding the target users and drawing the portraits of target users. The implementation of precision marketing through big data puts forward higher requirements on the size of the database, and the massive data improve the accuracy of precision marketing through big data. Target customer-oriented refers to the positioning of customer needs through big data, targeted push of product and store information that target customers are interested in or need, and more efficiently meet the diversified needs of target customers with lower marketing costs. The implementation of precision marketing through big data improves the value expected by target customers through purchasing products or services, and also reduces the cost spent by target customers to purchase products or services. The cost here includes not only monetary cost, but also time cost and energy cost. The implementation of precision marketing through big data shortens the marketing channel, reduces transaction costs, and virtually reduces the product price so as to expand the sales of goods and improve the marketing effect.

As an emerging Chinese e-commerce enterprise, Pinduoduo was officially launched in September 2015<sup>[1]</sup>. It positioned itself as the pioneer of new e-commerce. It is the third-party social e-commerce application focusing on C2M (Customer-to-Manufacturer) group shopping, that is, with the original social group shopping as the core mode. It is featured by ten billion subsidies, sales of high-quality agricultural goods, high-quality goods from their places of origin, etc.. The social group shopping mode means that application users can form a group with friends or strangers, or initiate a group to increase the



number of products purchased by users and get a lower group purchase price, also known as the new mode of “social + e-commerce”.

## **Literature Review**

### *1. Big Data and Precision Marketing*

In terms of the domestic literature in China, Lu Wan (2022) proposed that the current research related to marketing management mainly focused on three aspects: the analysis of user behavior and characteristics based on big data, the feasibility and application of precision marketing, and the exploration of laws and regulations related to big data <sup>[2]</sup>. Chu Xinwei (2022) believed that under the premise of legal permission, the precision marketing of e-commerce enterprises could meet the growing demand of marketization development through data collection, and achieve high-level precision marketing with the effective help of information technology <sup>[3]</sup>. Wen Jia (2022) believed that with the development of big data technology, the marketing mode of e-commerce applications began to change, gradually changing from the traditional marketing mode to a more accurate marketing mode. Therefore, e-commerce shopping applications should pay more attention to data analysis, processing and mining as well as user portrait analysis, and then implement targeted precision marketing based on users' behavioral characteristics and purchase needs <sup>[4]</sup>. Mo Xun and Qin Yuzhou (2022) believed that in the era of big data, the traditional marketing mode of e-commerce enterprises needed to be actively transformed and moved closer to the precision marketing mode. Through the use of big data technology to adjust and improve the marketing strategy of enterprises in a timely manner based on the market development and the changes of user consumption, e-commerce enterprises maximized the satisfaction of each user's growing and changing consumer needs, while reducing the marketing cost of enterprises, to achieve a win-win effect for users and enterprises <sup>[5]</sup>. Therefore, it can be seen that big data is conducive to the implementation and optimization of precision marketing. E-commerce enterprises should actively adjust and change their own marketing mode, and transform from traditional marketing mode to precision marketing mode, which is the requirement of the times and an effective way for users and enterprises to obtain a win-win situation.

In terms of foreign literature, Jiatong Bao, Yi Qu, Shuo Zhao and Nan Zheng (2022) believed that precision marketing was the future development direction of marketing, and confirmed through research that precision marketing could improve corporate sales and income <sup>[6]</sup>. Jianhui Zhang and Junxuan Zhu (2014) analyzed and summarized the development path of e-commerce marketing based on big data, designed relevant aspects of intelligent precision marketing framework combined with intelligent technology, and described its functional structure and operation process. Considering the differences between e-commerce and traditional retailing, the RFMA model was constructed to achieve “precise” customer segmentation through k-means clustering. Finally, the marketing model was verified by a set of C2C transaction data, and it was clarified that the model could formulate accurate marketing strategies, which was of certain significance to deal with the challenges brought by big data <sup>[7]</sup>. It is not difficult to see that foreign literature not only proves the relationship between precision marketing and enterprise performance, but also accurately divides customers through big data, so as to formulate targeted marketing strategies, that is, to implement precision marketing through models and data.

### *2. Pinduoduo*

The rapid development of Pinduoduo has also attracted the attention of scholars at home and abroad. In terms of the domestic literature in China, Song Ge (2022) took Pinduoduo as an example to discuss the marketing mode in the era of social networks <sup>[8]</sup>. Tang Shuya and Li Jingyi (2021) discussed the rapid rise of Pinduoduo through SWOT analysis and analyzed its unique corporate development strategy <sup>[9]</sup>. Han Shilong (2022), based on the analysis of the macro environment and micro industry environment of Pinduoduo, discussed the opportunities and challenges it faced in its development, and provided suggestions for the future development of e-commerce enterprises such as Pinduoduo <sup>[10]</sup>. Liang Wenrui (2021) analyzed the advantages and disadvantages of Pinduoduo through questionnaire survey and interview, combined with SWOT analysis model, and proposed corresponding strategies to change the negative impression of Pinduoduo and make the brand younger <sup>[11]</sup>. In terms of foreign literature, Zhao W, Wang A Q and Chen Y (2019) took Pinduoduo as the case to conduct in-depth interviews and research, and analyzed the impact of dynamic changes in the role of application provider on the successful operation of application from the perspective of application business model. Through the research, it is found that the Pinduoduo application has gone through two stages: dissemination and evolution <sup>[12]</sup>. Chang Y, Wong S F, Libaque-Saenz C F, et al (2019) argued that Pinguoduo targeted a niche market consisting of cheap products, low-income workers and small business owners in small cities. Recently, however, many Pinduoduo users have returned to their former applications. The study aimed to investigate the reasons why users return to other applications after Pinduoduo experiences. Scholars understand this phenomenon through in-depth interviews, and the research results show that switching costs and relative attractiveness will affect customer resistance to change, while risk perception will form negative attitudes and eventually lead to negative word-of-mouth marketing <sup>[13]</sup>.

## **Innovations and Contributions**

To sum up, the innovations of this study are as follows.

The research perspective and the research content are innovative. From the domestic and foreign literature on Pinduoduo, it can be seen that the current research is about the rapid rise of Pinduoduo in a short period of time, the reasons for its success and the reasons for customer loss. Few literature studies Pinduoduo from the perspective of implementing precision marketing through big data.

It is hoped that this paper can make some contributions to the relevant research of Pinduoduo and provide suggestions for Pinduoduo to deal with the challenges and problems brought by precision marketing.

### **Advantages of Precision Marketing for Pinduoduo under the Background of Big Data**

#### *1. Accurately Selecting Target Customers and Reducing Marketing Costs*

According to statistics, more than 70% of Pinduoduo users are female, and more than half of Pinduoduo users come from the fourth-tier and fifth-tier cities and below. It can be seen that Pinduoduo customers are mainly female users. Using big data to conduct multi-dimensional accurate analysis of this group is conducive to tracking sales leads, mining and analyzing the purchase information of the group, and drawing portraits of the target customer group. Through the integration of data resources, accurately selecting the audience of marketing information, that is, the target customer group of Pinduoduo, is conducive to reducing marketing costs.

#### *2. Quantitative Analysis of Target Customer Needs is Conducted to Improve Marketing Efficiency*

Using big data to determine product goals, it is suggested to list candidate core needs of target customer groups, select the priority of core needs, and assign weight to them. The closer the demand is to the product goal, the higher the weight is. The further away the demand is from the product goal, the lower the weight is. All of these come from the data, so they are reasonable. The analysis method for the use of charts and data to quantify the needs of the target customers is the first step to design a product to effectively meet the needs of the target customers and also the ideal method of matching the needs of the target customers with product design and production goals. At the same time, through data analysis, Pinduoduo can accurately understand the behavior of target customers, quantitatively analyze and present the needs of target customers, and effectively improve marketing efficiency.

#### *3. Shortening Marketing Channels and Reducing the Satisfaction Cost of Target Customers*

Precision marketing simplifies the specific path of the transfer of goods or services from producers to target customer groups, and shortens the marketing channel. Moreover, due to the perfect information push, product or service purchase and distribution system of Pinduoduo, it reduces the monetary cost, time cost and energy cost of target customers to purchase products or services, thus reducing the satisfaction cost of target customers. It improves the convenience of target customers to purchase products or services, and reduces transaction costs as well as the price of products or services.

#### *4. Precisely Delivering Information and Flexibly Adjusting Marketing Strategy*

Target customers are accurately screened through big data. Their needs are quantitatively analyzed. Modern information technology is used to automatically select products or services that meet their needs, and product or service information is released to target customer groups to meet the diversified needs of target customers to the greatest extent, so as to obtain economic benefits. In addition, if the target customers are not interested in the product or service information delivered by the system, Pinduoduo will flexibly adjust the marketing strategy according to the choice of the target customers and redeliver relevant product or service information, so as to adapt to the increasingly differentiated customer needs.

### **Problems Faced by the Precision Marketing of Pinduoduo under the Background of Big Data**

In 2018, Pinduoduo lost more than 3.9 billion yuan and gained revenue of more than 13.1 billion yuan. In 2019, Pinduoduo posted an operating loss of more than 8.5 billion yuan. Although Pinduoduo has developed rapidly, it still faces some problems and challenges, such as frequently pushing product information to relatives and friends of target customers, and many merchants bombarding users with phone calls or continuous short messages after users give negative feedback, etc.<sup>[14]</sup>.

#### *1. A Large Amount of Information Pushes Are Easy to Make Target Customers Feel Tired*

The era of big data has produced massive data. In addition to the applications that must be used every day, such as office applications, QQ, WeChat, etc., now a large number of applications are installed on the mobile phones of target customers. In the face of a large number of information pushes on mobile phones, target customers are easy to feel tired, and it is easy to make target customers feel apathetic to the information pushed by Pinduoduo and ignore the information pushed by Pinduoduo. In this way, the expected marketing effect can not be achieved. Moreover, the target customers will have a sense of disgust at Pinduoduo, and then uninstall Pinduoduo.

#### *2. Lack of Professionals Proficient in Big Data Analysis*

Big data puts forward higher requirements for marketing professionals. Relying on traditional door-to-door sales, print advertising and other marketing methods is insufficient to attract enough target customers, and will cost a lot of human resources and capital. Precision marketing comes into being. However, there is a lack of professional talents proficient in big data analysis, which requires Pinduoduo not only to be equipped with marketing talents with professional knowledge, but also

to have professionals with the ability of big data analysis and data mining, or introduce talents with both, otherwise it is not enough to meet the job requirements.

### *3. Prone to Data Security Risks*

With the increasing dependence of precision marketing on data system, data security has been widely concerned by consumers, which has also brought trouble and difficulty to enterprise management. Data are a double-edged sword, which provides convenience for Pinduoduo to implement precision marketing. Moreover, there is key concern for data security. For example, criminals invade the system, steal the sensitive personal information of target customers, disclose the personal privacy of target customers, and engage in illegal transactions with personal information. This illegal behavior seriously affects the reputation of the enterprise and damages the legitimate rights and interests of target customers.

### *4. The System of Laws and Regulations Related to Big Data and Precision Marketing is not Perfect*

Internet technology develops rapidly, but the legal and regulatory system related to big data and precision marketing is not perfect enough, especially the data security problem hidden behind its rapid development, which has begun to attract the attention of society and academia. There is no doubt that it is an effective way and a consensus to let personal data be protected by law, such as the formulation of personal information protection law. However, there are still disputes over some key issues. For example, the ownership of data rights is not clearly defined by law.

## **Suggestions on Optimizing the Precision Marketing of Pinduoduo under the Background of Big Data**

### *1. Fully Respecting the Choice of Target Customers and Not Blindly Pushing and Collecting Information*

The information copy should be prepared and tested in advance in order to improve the quality of the information copy. The frequency of users opening the application determines the frequency of pushing information. Information push can be enabled only when target customers open the Pinduoduo application and give authorization to open the information push. Target customers also have the right to close the push to ensure that target customers will not dislike the pushed information. If the target customer turns off the information push function, Pinduoduo application can remind the target customer to turn on this function when he opens the Pinduoduo application again. In addition, issues related to information collection should be clarified through the privacy policy before information collection, so that target customers can fully understand the security issues of information push.

### *2. Enhancing the Data Analysis Ability of Existing Marketing Professionals and Introducing Data Analysis Talents*

Pinduoduo can cooperate with universities which set up data analysis courses in existing marketing majors so as to enhance the ability of existing marketing professionals to analyze and mine big data in new business science, and then attract these professionals to join the Marketing Department of Pinduoduo. At the same time, Pinduoduo can introduce professionals related to data analysis and data mining and strengthen the cooperation and exchange between data analysis professionals and marketing professionals, so that the Marketing Department can adapt to and meet the new requirements for precision marketing in the era of big data.

### *3. Conducting the Training Related to Data Security*

Professionals related to data security are invited to Pinduoduo for data security training, so that employees in Pinduoduo are aware of the importance of data security, master and abide by data security-related operation norms so as to cultivate security awareness and good habits, make preparations and avoid data security accidents caused by unnecessary reasons, such as improper operation. For example, personnel related to the operation and maintenance of data equipment should obtain relevant qualification certificates before taking up their posts, and at the same time, they should be given relevant training, so that they can master and abide by data operation norms and abide by relevant laws and regulations.

### *4. Further Improving Laws and Regulations Related to Big Data and Precision Marketing*

Data security is a new problem, and it will take some time to clarify responsibilities from the level of laws and regulations and standardize issues related to big data and precision marketing. To solve the problems related to big data and precision marketing, it is not enough to rely on the power of an individual or an enterprise, and formal laws are needed to be introduced to restrict them. Cities with good development of big data and precision marketing in China can be selected for trial implementation, and continuous improvement can be made through practice before empirical promotion.

## **Conclusion**

Big data provides the technical foundation for precision marketing, and precision marketing cannot be separated from the application of big data and modern information technology, which complement each other. In the face of the trend of the times, precision marketing under the background of big data has brought advantages to Pinduoduo in four aspects: reducing marketing costs, improving marketing efficiency, reducing the cost of meeting target customers and flexibly adjusting marketing strategies. However, Pinduoduo still faces some problems and challenges when implementing precision marketing. How to deal with these problems and challenges so as to better implement precision marketing is what Pinduoduo needs to face. It includes four aspects: a large amount of information pushes are easy to make target customers feel tired, lack of

professionals proficient in big data analysis, easy to appear data security risks and imperfect laws and regulations related to big data and precision marketing. This paper puts forward some suggestions to optimize the precision marketing of Pinduoduo under the background of big data from four aspects: respecting the choice of target customers, introducing professionals related to big data analysis and mining, conducting training on data security knowledge, and further improving laws and regulations related to big data and precision marketing.

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