



Research on the Path and Function of Precision Marketing of Agricultural Products Brands Based on Big Data

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Abstract. The technological change of big data has accelerated the process of transforming traditional agriculture to modern agriculture, digital agriculture and information agriculture, and has also provided a solid basis for precision marketing of agricultural products. This article is based on the actual combat of special agricultural product information flow advertising, summarizes the four key processes of data-driven agricultural product brand precision marketing, and refines the important impact of big data on agricultural product regional brand precision marketing, which is the programmatic and instrumentalization of agricultural product brand marketing. Intelligence provides reference ideas.

Keywords: Big data · precision marketing · agricultural product brand

1 Introduction

1.1 Research Background

In recent years, China has vigorously implemented a brand-strengthening agricultural strategy, and supported local governments to build regional distinctive brands based on superior enterprises and industry associations. The domain names of Wuchang Rice, Gannan Navel Orange, Luochuan Apple and other regions have become famous.

According to the “Research on Agricultural Products E-commerce Out of Villages and Cities” jointly issued by the Ministry of Agriculture and Rural Affairs and the Ali Research Institute, the scale of online consumption of agricultural products in China has been expanding. It has reached 610.7 billion yuan in 2020 and is expected to reach 789.3 billion yuan in 2021 [1]. The average annual compound growth rate is 46.3%, (as shown in Fig. 1).

The e-commerce platform represented by Pinduoduo actively promotes the sales of agricultural products through online channels. At the same time, emerging formats such as live e-commerce and group joining have enabled agricultural products to reach a larger scale of consumers, so its online retail sales have been rising rapidly year by

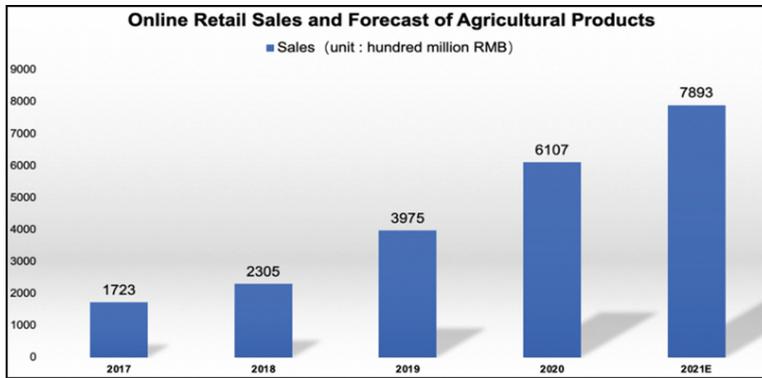


Fig. 1. Online Retail Sales and Forecast of Agricultural Products in China (data source: data.iimedia.com)

year. In this context, how to use massive databases and big data platforms to innovate agricultural product marketing models in terms of marketing strategy, marketing mix, effect evaluation, etc., to achieve precision marketing has a strong necessity.

1.2 Research Summary and Shortcomings

Research on the precision marketing model of agricultural products brands is carried out under the framework of the marketing concepts of Lester Wunderman and Philip Kotler, involving customer information collection and processing, customer segmentation and precise positioning, precision marketing strategy formulation, and precision marketing Program design, marketing effect feedback and other links [2].

Based on the research purpose of helping rural revitalization, the mainstream research of Chinese scholars lies in the following two fields. The first is to explore the uniqueness of grain, oil, fruits, vegetables and flowers, forest products, livestock and poultry products, aquatic products, and agricultural and sideline products in brand communication and precision marketing from the perspective of the attributes of agricultural products; the second is to explore the brand building of agricultural products in various provinces and cities Current situation and marketing difficulties, and actively construct a specific model of precision marketing of agricultural products suitable for the local area. For example, Gong Yingmei (2016) analyzed the changes in consumer characteristics, marketing information, marketing methods and marketing costs of Yunnan agricultural products in the context of big data, and constructed a precision marketing model for Yunnan agricultural products.

As the implementation tool and technical foundation of precision marketing, big data can extract knowledge from large-scale heterogeneous and complex data and transform it into business intelligence. Therefore, it has important value in real-time capturing user needs, tracking market trends, and personalized push.

Although the precision marketing model of agricultural products has been paid more and more attention in the domestic academic circles, considerable research results have

been achieved. However, it should be noted that compared with the research on the perspective of the promotion subject and the promotion target, there are fewer strategies based on the background of big data. As the implementation tool and technical foundation of precision marketing, big data can extract knowledge from massive amounts of complex data and transform it into business intelligence. It is highly respected in real-time capturing user needs, tracking market trends, and personalized push. Based on the above reasons, this research mainly explores the specific path and role of agricultural product brand precision marketing in the context of big data.

2 The Precision Marketing Path of Agricultural Products Based on Big Data

“Big data” is another important technological change in the information technology industry following the Internet of Things and cloud computing. In the environment of big data, consumer psychology and behavior patterns of agricultural products consumers have undergone great changes. With the upgrading of e-commerce platforms and changes in residents’ consumption habits, especially the passive change of consumption habits during the COVID-19 epidemic, more brand entities have entered the e-commerce platform, and the sales channels of branded agricultural products have been continuously expanded. According to the “China Agricultural Brand Development Report (2021)”, from 2018 to 2020, the number of consumers of branded agricultural products increased from 32 million to 42 million, an increase of over 30%. “Post-80s” consumers have become the main consumers of branded products, and the proportion of “post-00s” consumers has increased significantly.

Marketers need to face the challenges of increasing differences in user personalization, severe differentiation of media contact habits, and ever-increasing costs of customer relationship management [3]. At the same time, the production and processing of agricultural products has strong seasonality, high logistics costs, and significant differences in regional consumption characteristics. How to use massive databases and big data marketing platforms to carry out precision marketing of agricultural products is particularly important. Specifically, the model is divided into four core steps.

2.1 Raw Data Collection

Carrying out the big data precision marketing of special agricultural products, the most basic thing is to ensure the comprehensiveness, timeliness and accuracy of the collection of consumer information and special agricultural product information. In the Internet era, the amount of information has increased exponentially. Based on the marketing purpose of combining product and efficiency, marketers mainly focus on the collection of the following two types of data, static data and dynamic data.

- Static data mainly includes infrequently changing information such as user ID, age, gender, education, occupation, and location, and is the basis for constructing the basic attributes of e-commerce users.

- Dynamic data mainly includes: The behavior data of the user browsing the page: such as the access path, the length of stay on the page, the depth of the page visited, clicks and conversions; the user's hobby data, such as the time and frequency of the user logging in to the agricultural product e-commerce platform, browsing or favorite content, Interactive or comment content, brand hobbies, lifestyle interests, geographic location, etc.; user transaction data, such as the user's contribution rate to the agricultural product e-commerce platform, wake-up rate, promotion conversion rate, churn rate, repeat rate, and customer unit price, etc. In addition, big data can also record and analyze the search records of users at different times, different locations, and different media channels, and use big data statistical software to achieve in-depth analysis and classification of user behavior, which is difficult to achieve in the traditional marketing era.

2.2 Data Analysis and Modeling

Small and medium-sized agricultural companies often do not have the ability to build their own intelligent data analysis platforms, but there are data-driven needs. The functions of data collection, analysis and mining, intelligent optimization, programmatic creativity and management provided by the digital marketing platform have provided agricultural product brand marketing with a one-stop full-link solution from exposure, drainage to in-depth conversion, which is a new type of agricultural operation. The main body's network marketing has laid the foundation for large-scale growth. For example, a number of digital marketing service platforms represented by Huge Engine and Youmeng + provide one-stop visual data collection and analysis services for new agricultural business entities. These services have greatly reduced the time that small and medium-sized enterprises spend on data collection, data clarity, data visualization, and change monitoring when using big data.

For example, "Qianjiang Crayfish" is a regional public brand of agricultural products with Chinese characteristics. At present, the total annual output value of lobster has exceeded 10 billion yuan, and the huge consumer group is the cornerstone of the continuous development of Qianjiang crayfish. On the basis of making full use of the company's official website and APP first-party data, marketers combined with third-party social, search, and advertising data analysis such as Weibo, Toutiao, Baidu Statistics, etc., can clearly grasp the consumer user portrait and purchase of crayfish products Preferences and needs. (as shown in Fig. 2).

2.3 Implementation of Precision Marketing

At present, the industry mainly uses distributed data processing frameworks such as Hadoop and Spark to mine and clean massive user data on agricultural e-commerce platforms [4], and use machine learning algorithms to process the processed valuable data to obtain models. Companies rely on big data information technology to clarify market positioning, precise target needs, and establish a personalized customer communication service system and a low-cost sustainable precision marketing model.

Specifically, companies can accurately understand customer preferences, analyze user purchase needs and types, repurchase frequency, consumption evaluation and other

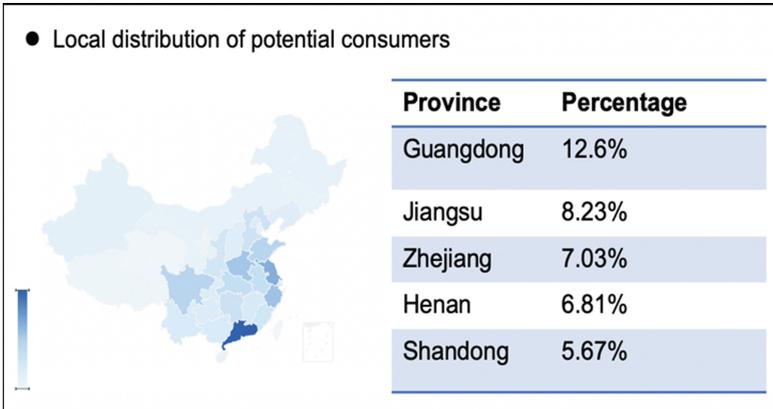


Fig. 2. Portraits of crayfish consumers on the Toutiao platform (data source: oceanengine.com)

information, screen target customers, understand customer preferences, and carry out refined classification and targeted brand design for specialty agricultural products. Personalized packaging, satisfactory pricing, diversified channel marketing, precise advertising and personalized product recommendation, etc. In this way, a virtuous cycle of agricultural products leading from production to consumption and then consumption-driven production can be realized, which not only saves marketing time and costs, but also brings consumers a good shopping experience.

2.4 Effect Evaluation

The last key step of precision marketing is the effect evaluation, to understand whether the marketing activities have achieved the expected goals, whether there are improvements, and how to guide the subsequent marketing activities.

The evaluation data of traditional marketing is often far from the real situation. These data often come from third-party audience research data and detection data on the arrival of advertisements, which are indirect, lagging, and less accurate. Big data has changed the evaluation model of the traditional media era. In the monitoring and evaluation of digital media, it has realized the collection of the full flow of advertising data. Every ad exposure, user interaction and dissemination can be recorded immediately, instead of spending days or even months of time to count the reach rate, page views and other indicators, so that advertisers can instantly and truly understand the audience’s perception of the ad. The level of understanding and love of the ads also makes the evaluation of the advertising effect more accurate, and at the same time, it can also replace the inefficient ads as soon as possible and improve the return on investment.

In addition, the establishment of the precision marketing model can also predict changes in consumer demand, and quickly adjust this change in time, using marketing mix to stimulate consumers’ desire to buy in multiple dimensions, in order to increase sales and obtain more Profit.

3 The Marketing Effect of Agricultural Products Driven by Data

3.1 Improving the Efficiency of Reaching Potential Customers

Precision marketing in the context of big data can enable e-commerce companies to use huge database resources to flexibly choose targeted labels based on the user's age, gender, region, operating system, etc. in the advertising platform, and to obtain the user's location through historical data. The network environment and active time period can promptly and directionally recommend product advertisements to suitable target users. Based on the user's reading and browsing habits, the platform where the user often stays is very natural and smooth to implant ads, and push the user's ads that can meet, reflect, and fit their personalized interests.

3.2 Reducing the Marketing Costs of New Agricultural Business Entities

Compared with the disadvantages of the traditional advertising marketing model, such as uncontrollable cost and poor timeliness of delivery, today, e-commerce companies can efficiently integrate advertising data based on big data technology. The background data report of the advertising platform can clearly see real-time data indicators such as exposure, clicks, click-through rate, and conversion rate. Therefore, by analyzing the daily expenditures and orders generated by advertising accounts, e-commerce companies can save marketing costs and maximize advertising and marketing effects. Taking the audience analysis data report provided by Huge Engine as an example, we can observe which types of users have more proportions and which types of users have greater value from the latitudes of user gender, provincial region, interest classification, and age. Subsequent targeted traffic selection will further narrow the scope of delivery and optimize delivery effects.

3.3 Regional Characteristics that are Conducive to Building Agricultural Products Brands

For agricultural product marketing, local characteristics are an important part of the agricultural product sales process that cannot be ignored. Therefore, various marketing tools should be actively used in the actual agricultural product network sales process to maximize the details of the original agricultural product market. In order to find the customer groups of the target agricultural products, at the same time, through the application of big data technology, it can help enterprises realize the network marketing mode under the background of precision marketing.

For example, in this link, the marketing team can actively explore the production and marketing laws of agricultural products, and conduct different product network marketing according to customer needs at different time nodes, to the greatest extent avoid the "homogeneity" of agricultural products in the electronic marketing process. In order to lay a solid foundation for the subsequent realization of the goal of network marketing of agricultural products, we will gradually build up the advantages of agricultural products brand with local characteristics.

3.4 Realize Accurate Evaluation of Marketing Effect

As early as the 19th century, “Father of Department Stores” John Wanamaker put forward: “Half of my investment in advertising is useless, but the problem is that I don’t know which half.” This sentence reflects profoundly. Evaluating marketing effects under the traditional business model is an industry problem.

Carrying out precision marketing in a big data environment, from the beginning of reaching users to how to bring purchase behavior at the end, each node has data feedback. These data clearly show the correlation between brands, products and users, so that one or more complete and coherent interactive experience paths can be designed, so as to achieve the integration of brand communication effects and actual sales effects in the marketing effect evaluation. For example, “click-through rate” and “Conversion rate” are two basic indicators for measuring the effectiveness of digital advertising [5]. Click-through rate is a basic indicator to measure whether an advertisement is attractive and persuasive. Focusing on the communication effect of the advertisement is a direct manifestation of the effect of the advertisement communication on the consumer’s cognition and psychological level. The conversion rate refers to the user’s purchase, registration or information needs (such as inquiry or search) formed by the influence of advertisements. The conversion rate is already quite close to the sales effect of the advertisement. Big data can quantify the data conversion from advertising display to user clicks to purchase orders, and accurately calculate the effect conversion rate of the total advertising investment, so as to help advertisers optimize advertising communication strategies, reduce the ineffective loss of advertising budgets, and increase return on investment Rate.

4 Conclusions

Branding is an important symbol of agricultural modernization. With the in-depth implementation of my country’s agricultural branding strategy, agricultural brand building has entered a critical period of standardized growth and ushered in the best opportunity for development. The big data environment gives marketers the ability to timely, fully and accurately grasp consumer information. Through the acquisition and analysis of this information, they can accurately locate the consumer market that meets different consumers, and provide unique marketing for agricultural products marketing. Solutions and strong technical support.

At present, the people’s living standards in our country have been comprehensively improved, and the consumer demand for high-quality, branded agricultural products is becoming more and more vigorous. In the future, based on and supported by massive databases and big data platforms, the application of precision marketing of agricultural products brands will usher in more rapid development in the 5G era.

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