Research on Network Marketing Reform under the Background of Big Data

Haohua Qing\textsuperscript{1,*}, Jianghua Deng\textsuperscript{1}, Die Fu\textsuperscript{2}

\textsuperscript{1}Department of Economic And Trade, Guangzhou College of Technology and Business, Guangzhou, Guangdong, 510850, China

\textsuperscript{2}Sichuan University of Arts and Science, Dazhou, Sichuan, 635002, China

*Corresponding author e-mail: 13986536@asau.edu.cn

Abstract: In the era of rapid development of information, network marketing has gradually become one of the most popular marketing methods. But there are also some inevitable problems. The current network marketing is so aimless that people are bored with it and then marketing to the enterprise's own brand, which makes the enterprise have to change the existing network marketing mode. Therefore, this paper takes big data as the background to study the innovation strategy of network marketing. This paper uses the form of questionnaire survey to investigate some consumers' views and suggestions on online marketing in their daily life. According to the survey, big data can help marketers analyze consumer behavior preferences and market trends. In addition, this paper analyzes and introduces some problems existing in the traditional network marketing mode, and gives the network marketing strategy under the background of big data.

Keywords: Big Data, Network Marketing Methods, Innovation Strategy, Marketing Problems

1. Introduction

Network marketing [1, 2] is a unique marketing mode accompanied by the Internet era. It is a point-to-point marketing that promotes products and brands to customers with the support of network platform. Among them, the network is the information dissemination tool and platform, customers and enterprises receive and send information through the network. As a new marketing model, network marketing has great commercial value. In the context of big data [3-5] marketing, we have the opportunity to collect all kinds of data and discover new business value through big data analysis and mining. It makes enterprises correctly face thousands of consumers in marketing activities, understand and accurately predict consumer behavior, accurately carry out marketing activities, locate consumers, and effectively allocate marketing resources and control costs. Online shopping mall uses big data to...
innovate in marketing mode, which has achieved initial results, but also faces many challenges [6-8]. At present, big data has become the focus of various industries.

Through the research and analysis of big data, we know that the so-called big data is the massive data that cannot be processed by modern conventional processing technology. These data contain a lot of corresponding data, which cannot be comprehensively processed by using traditional computers. Moreover, with the continuous development of China's economy, China's big data is increasing rapidly, and gradually presents the characteristics of a large number and a wide variety, and it has a high value [9, 10]. Network marketing is an integral part of the overall marketing strategy of an enterprise. It is a variety of activities to create an online business environment with the Internet as the basic means to achieve the overall business objectives of the enterprise. In short, network marketing is a comprehensive marketing activity which takes the Internet as the main platform to achieve certain marketing purposes. From the current situation, there are a lot of data obtained by network marketing, which is a lot of data itself, so it is very difficult to process them. The development of enterprises needs to process the corresponding data and plan the future development of enterprises according to the data, so it is necessary to conduct comprehensive research and analysis on big data and network marketing.

With the continuous development of the times, marketing methods should also be constantly changing. This paper investigates the changes and innovations of network marketing under the background of big data. It is found that compared with the traditional network marketing, the network marketing under the background of big data has more advantages, but there are also some problems that need to be constantly changed, reformed and innovated to make its development more perfect. Enterprises choose their own network marketing countermeasures, identify potential consumer groups, and improve the success rate of network marketing under the background of big data.

2. Network Marketing under the Background of Big Data

2.1 Network Marketing
Network marketing is a kind of marketing method that promotes products to target customers and communicates with target customers through Internet. In other words, Internet marketing is to use the Internet as a medium to realize online sales with new ways, methods and ideas of network communication, so as to promote the realization of individual and enterprise transaction activities. This definition shows that in the marketing activities of enterprises, network marketing is not only the work of enterprise marketing department, but also the common business of other relevant business departments such as production department, finance department, network department and purchasing department. Specifically, the production department and quality supervision department are responsible for controlling the quality of products, while the marketing department is responsible for making plans, and the network department also needs to design and rebuild business systems to meet the needs of the market to meet the digital management of enterprises in the network era.

2.2 Big Data
Big data refers to the amount of data that mainstream software tools cannot capture, manage and process in a certain period of time. Its data transmission speed and transmission capacity are very high. A single data set is usually about 10TB, and its structure is not suitable for the original database system. Big data is different from the mass data in the past, its basic characteristics can be summarized as four characteristics: volume, diversity, value and speed, that is, large data scale, multiple types, low value density and fast processing speed. 1) The data scale is large, and the amount of data jumps from TB to Pb. 2) Multiple data types. Today's data is not just text, but video, audio, pictures and geographic information. 3) Low value density is inversely proportional to the total amount of data. For example, for an hour of video, only a minute or even seconds of data is valuable. 4) Fast data processing follows the "one second law" and can quickly obtain high-value information from various
3. Statistical Analysis of Data
Network marketing has become a more commonly used marketing means, but in marketing because of the inaccurate grasp of customer demand, the current only widely spread the network marketing means, so the marketing harvest is often not the customer but dislike. The popularity of big data brings hope for the reform of network marketing. Network data is naturally suitable for big data analysis technology. Using big data to analyze network customers can effectively and accurately locate customers' needs. Therefore, it is necessary to analyze the existing network marketing problems and improve the network marketing mode by using big data technology. In order to better find the problems existing in the traditional network marketing, we choose to use the questionnaire to dig out the problems of the traditional network marketing by means of sampling survey, so as to carry out reform and innovation in this way, so as to maximize the value of network marketing under the background of big data. This paper analyzes people's attitude towards online marketing by means of questionnaire survey, and the recognition degree of applying big data in network marketing reform. Among them, only when the proportion of men and women is balanced can the sample survey more truly reflect the availability of the questionnaire results. Therefore, in this survey, there are 49 men and 51 women, and the number is basically equal. Table 1 shows the survey of respondents' approval on the application of big data in E-marketing reform. It can be seen from Table 1 that 92 respondents hold an attitude of approval, expressing that the use of big data can improve the effect of online marketing.

Table 1. Survey on recognition of big data applied in network marketing reform

| Recognition survey | Number of people |
|--------------------|------------------|
| Highly recognized  | 57               |
| Basic recognition  | 35               |
| Not recognized     | 8                |

4. Discussion

4.1 Survey Results
Figure 1. Investigation on the understanding of network marketing

It can be seen from Figure 1 that 99.72% of the respondents knew about e-marketing, 47.2% of them knew it basically, 30.82% used it more, and 21.7% used it a little. Through the investigation of the understanding degree of network marketing, we can improve the network marketing strategy and make more potential consumers increase the trust of the new network marketing. The survey shows that network marketing has a great influence on people's life, and most people's life is closely related to network marketing.

Figure 2. The influence of network marketing on consumers in daily life

Investigating consumers' experience of online marketing in their daily life can make enterprises improve their online marketing strategies. As shown in Figure 2, network marketing affects more people in life, and has obvious help, which facilitates life and reduces many unnecessary troubles. It can be seen that the prospect of network marketing under the background of big data is very considerable, so it is necessary to study the reform and innovation of network marketing.

4.2 Problems in Network Marketing

(1) Use error information with personal marketing experience
In the marketing decision-making, too much reliance on personal experience, lack of in-depth understanding of the customer market. Often blind decision-making, marketing effect is difficult to quantify, cost is difficult to control. Specific performance in: in the mail marketing, ignore the analysis of consumer preferences; send a lot of spam to consumers. In order to achieve the purpose of marketing, useless information bombing has been carried out to increase consumers' aversion to the "brand" of enterprises. It will seriously affect the effect of advertising and brand maintenance. Subjectively, relying on experience to make a rough judgment on consumers will lose a lot of potential consumers.

(2) One-way communication with consumers is difficult to achieve marketing effect
One-way communication refers to sending a large amount of useless information to consumers through various network channels, which cannot establish contact with consumers. Nowadays, consumers are more willing to master the initiative than passively be managed. We need to make accurate positioning and personalized judgment for each consumer, provide the most accurate information and service in a short time, and provide high-quality content and product suggestions for consumers. To enrich the user experience of consumers, these are the current network marketing model is difficult to achieve.
(3) Insufficient analysis of consumer behavior

In the network marketing mode, the analysis of consumer information is not enough. In the context of big data, it is difficult to adapt to the complex era of big data. For example, wechat marketing mainly relies on the search and optimization of scale and geographical location to attract consumers, while grouping can effectively manage the market. However, this marketing method also has many disadvantages. First of all, it is difficult to analyze users in depth while obtaining users. Excessive dependence on a large number of fans to increase the number of effective consumers, consumer positioning is not accurate enough. In the absence of analysis of consumer demand, marketing companies will push the information consumers don't want, which will cause consumers' disgust and greatly reduce their experience.

Insight into big data is almost equivalent to insight into the world, and the understanding of the customer world is an important basis for the realization of enterprise marketing activities. The network has a variety of human behavior information data, although these data information may be scattered, but if it can be well used, it will also produce huge capacity. Therefore, more and more companies focus on network data, hoping to use big data to analyze network data to bring better development for the company. In the era of big data, big data is used to analyze the needs of customers, improve their experience, select the best marketing mix strategy from the needs of customers, and provide customers with the optimal 4P marketing mix, so as to achieve the best marketing effect at the right time. With the advent of big data, the use of big data technology to reform network marketing.

4.3 Network Marketing Strategy under the Background of Big Data

(1) Accurate and effective market positioning

Effective segmentation and positioning of the market is one of the key factors for the success or failure of an enterprise's marketing. According to the different needs of each consumer, we can accurately segment the consumer market and identify the target customers, so as to achieve the effective and accurate segmentation. By using big data technology to accurately measure and analyze consumer behavior, the corresponding data analysis system is established. Through the analysis of this kind of data, we can optimize the solution to get the accurate needs of customers, so as to achieve the accurate positioning of customers.

(2) Building the brand of network marketing

In the network marketing reform of big data reform, improving the personalized network marketing brand is the key to improve the efficiency of network marketing. In the process of brand building, reasonable use of big data is conducive to the construction of enterprise marketing brand. Relevant enterprises can further expand the information source channels by using the network platform to obtain the data information needed, while consumers can provide more marketing data, which provides the possibility for enterprise data analysis. The construction of enterprise network marketing brand is mainly to use data technology to integrate the data before determining the marketing communication content, and then design promotion measures according to the data analysis results. After the design of promotion measures, we can combine the characteristics of regional information dissemination and carry out network marketing based on the mainstream network promotion operation mode. In addition, the legitimacy and rationality of marketing is of great help to the construction of enterprise marketing brand. In the process of marketing, we should create a reasonable and legal network marketing atmosphere, so as to maintain the stability and rationality of enterprise network marketing.

(3) Rationality of market positioning

Network marketing is a new popular marketing method, and the key to win the new marketing method
is no longer the price war or enterprise strength, which makes small and medium-sized enterprises have new expectations for this new marketing method. But in fact, although all enterprises have the qualification of using network marketing, many enterprises have no reasonable positioning market. Before the enterprise carries out the network marketing, the reasonable positioning of the marketing market is helpful for the enterprise to formulate the network marketing strategy and promote the efficiency of the network marketing. In addition, the dominant position in the network marketing is the customer, which also has higher requirements for the enterprise's marketing method. It needs the enterprise to locate the market reasonably according to the customer's demand, and ensure that the marketing method and quality are accepted by customers. The big data analysis technology provides convenience for enterprises to locate the market reasonably. It is an important part of the network marketing reform under the background of big data to analyze the needs of customers and reasonably locate the market.

5. Conclusions
Nowadays, network marketing is widely loved by enterprises because of its unique marketing mode, but in fact, the effect of network marketing is not very ideal, which also brings bad influence to many customers, and brings certain side effects to the enterprise's network marketing brand. The emergence of big data makes network marketing have a new possibility. It has become the most important thing for many enterprises to use big data to reform network marketing. This paper uses questionnaire survey to investigate people's attitude towards the network change under the background of big data, and the survey results show that people all hold a positive attitude. In the article, this paper analyzes and gives the existing problems of network marketing, and gives the suggestions of network marketing reform under the background of big data.

References
[1] Zhang, F., Li, S., & Yu, Z. (2019). The super user selection for building a sustainable online social network marketing community. Multimedia Tools and Applications, 78(11), 14777-14798.
[2] Dai, F., Teo, S. T. T., & Wang, K. Y. (2017). Network marketing businesses and chinese ethnicity immigrants in australia. Journal of Small Business Management, 55(3), 444-459.
[3] Xu, Z., Frankwick, G. L., & Ramirez, E. (2016). Effects of big data analytics and traditional marketing analytics on new product success: a knowledge fusion perspective. Journal of Business Research, 69(5), 1562-1566.
[4] Saboo, A. R., Kumar, V., & Park, I. (2016). Using big data to model time-varying effects for marketing resource (re)allocation. Mis Quarterly, 40(4), 911-940.
[5] Auken, S. V. (2015). From consumer panels to big data: an overview on marketing data development. Journal of Marketing Analytics, 3(1), 38-45.
[6] Michon, R., Chebat, J. C., Yu, H., & Linda Lemarié. (2015). Fashion orientation, shopping mall environment, and patronage intentions: a study of female fashion shoppers. Journal of Fashion Marketing & Management, 19(1), 3-21.
[7] Mallapragada, G., Chandukala, S. R., & Liu, Q. (2016). Exploring the effects of what (product) and where (website) characteristics on online shopping behavior. Journal of Marketing, 80(2), 21-38.
[8] Kim, TaeHwan. (2017). Smart phone users' satisfaction for online shopping: an analysis based on the transaction process model. Social ence Electronic Publishing, 11(6), 93-108.
[9] Xu, W., Zhou, H., Cheng, N., Lyu, F., Shi, W., & Chen, J., et al. (2018). Internet of vehicles in big data era. IEEE/CAA Journal of Automatica Sinica, 5(1), 19-35.
[10] Wang, Y., Kung, L. A., & Byrd, T. A. (2018). Big data analytics: understanding its capabilities and potential benefits for healthcare organizations. Technological Forecasting & Social Change, 126(JAN.), 3-13.