Research on Product Service Marketing Model of Environmental Protection Enterprises from the Perspective of Big Data

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Abstract. Nowadays, the information revolution of "big data" is approaching. "Big Data" is self-evident for the marketing of environmentally friendly products. It can optimize the integration of production and distribution data of environmentally friendly products to guide the production and management activities of environmental protection enterprises. Studying the impact of "Big Data" on the marketing of environmental protection products has important practical significance for promoting the development of environmental protection industry. Using the theory of big data management and marketing, the paper selects a company that produces air purifiers to analyze the internal and external environment, and obtains the development opportunities and development threats of the product. By combing the advantages and disadvantages of the air purifier products. Develop a corresponding marketing strategy and achieve strategic goals.

1. Introduction
With the rapid development of online trading platforms, some large enterprises (such as Alibaba, Amazon, Wal-Mart, etc.) can fully collect historical purchase information from consumers to establish "big data" for enterprises. The rise of online social platforms and their marriage with large enterprises have strengthened the ability of large enterprises to collect big data, thus proclaiming the advent of a "big data marketing" era. Companies that implement big data marketing can specifically recommend products that they or she might like to consumers, and reduce the cost of searching for consumers, which undoubtedly greatly improves social welfare. On the other hand, big data marketing also enables companies to price discrimination based on the consumer's purchase history, and ask different consumers for different prices to increase corporate profits. For example, mobile communication companies often attract new users to the Internet by means of promotional means such as sending calls, which is actually price discrimination against new and existing customers. Big data is the result of computer technology innovation. The use of big data technology in marketing can bring great progress in management technology, which undoubtedly improves social efficiency.

In China, due to the limitations of economic development and the obsolescence of people's consumption concepts, most people's consumption consciousness is still positioned on the necessities of life, and it is difficult to actively seek for the indoor air pollution consumer products; The standard is relatively low in developed countries, and the uncertainty of production process and production process cannot guarantee that the produced building materials meet national standards. Coupled with the "big
"event" that Chinese residents are more concerned about buying a house, they will get used to the big-handed consumption when they are in the decoration. From the ceiling to the wall wallpaper, the floor or the carpet, it is inevitable that the indoor air index will not be excessive. The domestic indoor air pollution control industry is relatively backward. It is after the SARS in 2003 that Chinese people know the term indoor air pollution index. However, it is also the "SARS" that has spawned China's indoor air pollution control industry. With the rapid development of catalytic antibacterial purification materials and products, an emerging high-tech industrial environmental technology product has quietly formed, and air purifiers are a representative product. The paper will analyze big data from this representative product, analyze its internal and external environment, analyze its promotion advantages and disadvantages, and develop a marketing service strategy that adapts to air purifiers.

Figure 1. Marketing model in the era of big data

2. Environmental enterprise product swot analysis

2.1. Opportunities and threats
The current economic development, people's living standards have improved. Clothing, food, housing and transportation are indispensable for people's lives. The Chinese people have a certain amount of deposits in their minds. Under the basic conditions of food and clothing, they will first consider housing. Moreover, it pays more attention to the layout and comfort of the housing, so there is a habit of decorating new houses, and it caters to the public's psychology. At present, most of the real estate industry provides "clear water houses", and decoration has become an indispensable first place after each house purchase. A big event. More and more people are beginning to have new requirements for housing. However, the renovation of new homes cannot inevitably lead to excessive indoor air pollution indicators. Many people think that they have purchased "environmental products". Why is indoor air quality still exceeding the standard? First, unqualified products are constantly entering the market, objectively ordered. The indoor environment is polluted. Second, the urban process is accelerating, and there are many pollutions such as industrial and automobile exhausts. Our diet structure tends to be fast-food, and the imbalance of nutrition leads to a decline in human immunity, which is more likely to cause diseases such as "building syndrome".

Although the market environment is approaching well, there are certain threats. First, people's health and environmental protection concepts are relatively old and do not focus on indoor air purification products. This is because indoor environmental pollution control is an emerging industry. Most people do not understand the product and it is difficult to accept it immediately. At this time, it is necessary to
cultivate the market. On the one hand, it is to improve and improve people's concept of caring and paying attention to the indoor environment, on the other hand, to promote and publicize products and brands; again, it is a question of people's consumption concept orientation. Second, the market is not standardized, and the products are mixed. After analysis, it is found that although there are many manufacturers of air purifiers, research shows that effective air purifier products account for less than 30%. This shows that the market is not standardized, there is no industry management and planning. This requires the company to be able to clean itself in the harsh market environment, and strive to develop, can become the vanguard of the market, cooperate with other formal companies with the same concept, carry out unified planning from products, prices and markets, share market segments and share cake.

Figure 2. Air Purifier Swot Analysis

2.2. Advantages and disadvantages
First product advantage. At present, there are three main types of products in the indoor air pollution control industry: deodorant, photocatalyst and machine deodorization. The deodorant is low in price, quick in effect but short in effective period, and the photocatalyst has a long effect period, but it has the drawback of relying on ultraviolet rays. The main principle of the machine is similar or identical to the deodorant or photocatalyst. Only air catalysts, the cost is similar to that of photocatalysts, but they have excellent performances such as long-term effects. However, the company's products are air catalyst products, and the product has obvious advantages. Second, the technical advantage. The analysis found that the company's air purifier product investment is low, and saved research and development investment. Air-catalyst products are easy to provide after-sales service, just a telephone call back, no need to increase spare parts inventory and technical workers support. Third, the relationship network advantage. The product has maintained good relations with relevant government departments and several major institutions, and will play a half-time role in promoting the project, especially in large-scale project negotiations, it is easier to win [1].

Although the product has certain advantages, there are certain disadvantages in the market competition. First of all, the price is high. The air catalyst has excellent performance, but the cost is higher than that of the deodorant and the photocatalyst. For buildings with an area of more than 1,000 square meters, the price difference is large, and it is difficult for buyers who do not fully understand the industry and products to choose the product in terms of cost performance when making decisions. Second, there are fewer promotional tools. The product mentioned in the product is insufficiently funded, and the indoor air pollution control product is not a daily necessity. The possibility of repeated
consumption is small, so the return rate of advertising promotion is not very satisfactory. So far, there
is no good and ideal promotion. Means. But if you don't promote or guide, the market can only be a pool
of dead water, and it is difficult to activate.

3. Air purifier market big data analysis

3.1. Basic model
Based on the Hoteling horizontal differentiation model, this paper establishes a three-stage dynamic
game model to study the impact of purchasing historical prices on the technological innovation
incentives of oligopolistic enterprises in the context of big data marketing. In this model, companies A
and B, located at the ends of the Hoteling linear city, provide products directly to consumers. Prior to
technological innovation, the two companies produced at a fixed marginal cost, c, assuming \( c > 0 \) [2].
The number of consumers is evenly distributed among the unit length of the Hoteling linear city. Each
consumer has a unit demand, and the consumer evaluates the product as \( v \). For the sake of simplicity,
the \( v \) is large enough that the entire market is completely Coverage, that is, in the equilibrium, all
consumers will buy a unit of product from a certain company. Consumers have rational expectations,
that is, when consumers make their own decisions in the second stage, they will consider that the
company will set the third-stage sales price based on their purchase history, so consumers are in the
second stage. The goal in the game is to maximize the total surplus of the second and third phases. In
addition, for the convenience of calculation, this paper standardizes the travel cost of the consumer's
purchase of the product to 1, and assumes that both the consumer and the two companies have a discount
factor of 1. To this end, the profit obtained by the company in the third stage is expressed as follows:

\[
\pi^A_i = \left( p^A_i - c + x_{pd} \right) \left( \frac{1}{2} - \frac{p^A_i}{2} \right) + \left( p^A_i - p^B_i \right) \left( \frac{1}{2} - \frac{p^A_i}{2} \right) - \alpha_2 \]  

\[
\pi^B_i = \left( p^B_i - c \right) \left( \frac{1}{2} - \frac{p^B_i}{2} \right) + \left( p^B_i - p^A_i \right) \left( \alpha_2 - \frac{1}{2} \right) \]  

where \( p^A_i, i = A, B \) said that both companies do not understand the preferences of consumers, and both
companies report prices at the same time. \( x_{pd} \) represents the technological innovation of segment A. \( \alpha_2 \)
and \( 1 - \alpha_2 \) represent the market share of the two companies, respectively.

3.2. The role of big data analysis in environmental protection companies

3.2.1. Achieve precise marketing to target customers. Taking air purifiers as an example, in the era of
big data, the popularity of the Internet has linked the past information islands. In particular, the
development of the mobile Internet has made people always in the network environment, and their
behaviors and behaviors will leave traces on the network. Through the collection, collation and analysis
of behavioral information such as browsing, searching, paying attention, inquiring, and placing orders,
the marketer extracts the consumer's consumption habits and their consumption preferences, so as to
more accurately divide the target customers, and according to Target customers' needs are accurately
positioned, analyzing the potential needs of target customers, accurately pushing product information,
precision promotions, and even introducing personalized customized services to create greater business
value.

3.2.2. Maintain customer relationships and increase customer loyalty. Using big data technology, you
can mine and analyze past consumption data. Filter out valuable information in intricate customer data
to identify core target customers that match the company's positioning. By accurately marketing and providing quality services to valuable customers, we can better meet customer needs, improve customer management efficiency, and maintain existing customers. At the same time, you can use data analysis to mine potential customers and broaden the product market. In addition, in the data analysis, business opportunities can be tapped to understand the real needs of potential consumers, so as to more accurately meet consumer needs and enhance customer satisfaction. Establishing long-term good customer relationships will help strengthen customer loyalty and enhance corporate competitiveness.

3.2.3. Using Big Data to Optimize Enterprise Marketing Planning. By using data mining technology to analyze massive sales data, you can develop targeted product portfolios, marketing plans, and business decisions. For example, the product mix that consumers often buy and the relevance of different products are analyzed. According to the customer's interest characteristics and purchase behavior pattern, marketers can make reasonable matching sales, bundle sales, cross-selling, and improve products [3]. Sales management, making better marketing decisions. For example, global retail giant Wal-Mart analyzed the purchase behavior of consumers and found that most male customers would buy their favorite beer after buying baby diapers, thus using the "beer + diaper" bundled sales method. It is the use of big data analysis technology that makes Wal-Mart benefit from marketing.

3.2.4. Using Big Data to Improve Logistics Management of Network Marketing. In the traditional logistics system, each logistics company fights. The arrival of the era of big data has effectively promoted the formation of the "big logistics" system and realized tremendous changes in the logistics industry. In "big logistics", logistics and distribution information and resources can be shared between production and operation enterprises and logistics enterprises, between self-owned logistics and third-party logistics, among third-party logistics enterprises, logistics network backbones and distribution terminals. Make greater use of all aspects of resources to improve logistics efficiency and reduce logistics costs.

4. Determination of product marketing model for environmental protection enterprises in the era of big data

4.1. Channel Management Strategy
As far as the air purifier is concerned, once the product is put on the market for distribution, it is necessary to develop a scientific and rational channel management strategy for the channel to maintain the stability and smoothness of the company's channels, and to promote the steady market share of the company's products. Continue to improve. It is necessary to establish a middle-sector model of channel strategy sensitivity.

| Table 1. Middleman's sensitivity to channel strategy |
|-----------------------------------------------------|
| **Spread** | **Primary agent** | **Secondary agent** | **Retailer** |
| Spread | 3 | 4 | 5 |
| Sales rebate | 5 | 5 | 0 |
| Process rebate | 3 | 0 | 0 |
| Penalty rule | 2 | 2 | 3 |
| Inventory discount design | 5 | 5 | 3 |

In the design of spreads for environmental protection products, it is necessary to emphasize several principles: environment-friendly enterprises based on air purifiers are small and medium-sized enterprises with weak strength and low brand awareness [4]. Therefore, the company will rely more on profit-driven to make the middlemen and retailers work harder to sell the company's products. This requires a reasonable spread design for each level of the company's middlemen to ensure the stability of
the channel. Unobstructed. In the channel operation process, you can also use the appropriate fine-tuning of product prices to strengthen the control of the channel.

4.2. Distribution strategy
Product distribution is an important way for enterprise products to be quickly launched in the market, which can promote the sales of our products in a short period of time. As far as environmentally friendly air purifiers are concerned, it is inseparable from the marketing tools of distribution. In order to effectively resolve the resistance that may be encountered in the distribution, establish the confidence of the dealer in the model market. The company can choose an excellent distributor, concentrate the company's current marketing resources, and concentrate on the three aspects of people, finances and materials to build a regional model market. On this basis, using its sample effect to radiate influence on other dealers and strengthen the dealer's trust in the company and its products can prompt the market to enter a virtuous cycle. The marketing methods that can be adopted are divided into two types: in-store promotion and out-of-store promotion.

In-store promotions choose gift promotions and special promotions. The so-called gift promotion refers to the company's unified promotional gifts. Special promotion refers to the special promotion of a model of air purifier for a certain period of time or holidays. Before launching this activity, POP advertisements, display racks, etc. should be used to fully inform the consumers, so as to attract consumers' attention, the actual purchase line is generated. At the same time, it is also possible to suppress the competitive products to a certain extent and bring together people's popularity. Out-of-store promotions can be placed in some stores outside the store (such as New Century Department Store, Shangshe Electric, etc.): air purifier promotion booth can be set up for effective product display and functional demonstration by sales staff to help consumption People have a deeper understanding of the product. In the process, leaflets, roll-ups, publicity boards, promotional banners, etc. must be in place, and gifts can be given according to the consumer's purchase receipt. In addition, for some stores, the promotion desk cannot be placed. You can arrange promotional personnel to guide the promotion at the door of the store, issue advertising flyers, guide consumers to the air purifier counter, and introduce the product selling points. Promote the achievement of sales [5].

4.3. Build a network sales platform
Compared with traditional marketing channels, the network platform collects consumer information more quickly and accurately. It can quickly convey the opinions of consumers to the company, which can prompt the company to quickly improve products and services according to the needs of consumers. And the cost of transmitting information is also much lower than the traditional marketing channel platform. Therefore, the company will transform the existing company website, add an online shopping mall module, adopt B2C mode, and can directly sell to the final consumer. At the same time, in the online shopping mall module, it must have the functions of ordering, settlement and distribution. At the same time, the network sales system can be used to communicate effectively with agents and distributors. On the one hand, the company's information can be quickly provided to agents and distributors. At the same time, the sales data of the middlemen can be quickly fed back to the sales data. Company, data sharing between the two parties.
5. Conclusion

At present, the air pollution situation in China is severe. People are paying more and more attention to the demand for environmentally friendly products. Taking the air purifier as an example, the number of products sold over the year’s shows that the air purifier has great development potential in the Chinese market. Using big data to analyze consumer demand and positioning of environmentally friendly products, and analyzing competitors’ pricing and sales models, can enable environmentally-friendly companies to more accurately find the development orientation of the enterprise and gain market share to gain market benefits. The rational application of big data does make consumers more diversified shopping, and at the same time enables environmental companies to quickly understand consumer demand preferences, grasp market trends, and achieve long-term development.

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