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Original Research Article**Marketing strategy analysis of service robot industry based on SWOT analysis——Take a well-known service robot company C in China as an example***Nianzhang Li, Ye Tan, Xiaohan Guan, Wenjing Ke**Shandong University of Science and Technology, Jinan, Shandong, 250000, China*

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**Abstract:** With the development of artificial intelligence, big data, speech recognition and synthesis technologies, the performance of service robot products is becoming more and more perfect, and the level of intelligence and adaptability have been significantly improved compared with before, which can better meet the service needs of consumers, and consumers' acceptance of service robots is also increasing. This paper explores the characteristics of the marketing strategy of the service robot industry represented by enterprise C through SWOT analysis, in order to better meet the service needs of consumers and have a more eye-catching development in the new market environment.

**Keywords:** Service robots; SWOT analysis; Corporate marketing

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## 1. Introduction

SWOT analysis method is Harvard Business School professor of corporate strategic decision-making K. Andrens in the 60s of the 20th century put forward, because of the clear, concise, specific characteristics, is widely used in various fields of management, its biggest advantage is to grasp the most can affect the strategy of several core factors analysis. The four English letters of SWOT stand for Strength, Weakness, Opportunity, and Threat Guides us to approach our analysis from four perspectives: strengths, weaknesses, opportunities, and threats. The so-called SWOT analysis, that is, based on the internal and external competitive environment and the situation analysis under competitive conditions, is to list the main internal advantages, disadvantages and external opportunities and threats closely related to the research object through investigation, and arrange them in the form of a matrix, and then use the idea of system analysis to match various factors with each other to analyze, and draw a series of corresponding conclusions, and the conclusions usually have a certain decision-making. This paper further analyzes the characteristics of marketing strategies in the service robot industry through four different perspectives of SWOT analysis.

## 2. SWOT analysis

### 2.1. Strength

#### 2.1.1. Technical advantages

As a pioneer in China's home service robot industry, after more than 20 years of research and development, it has become the first brand of household robots in China, and has been ahead of China's domestic competitors for more than 0.5 years in many core technologies such as sweeping robots The company strengthens the research of technical standards, promotes the integration of independent innovation and technical standards, actively participates in the formulation of industry standards, national standards and international standards, seizes the commanding heights of the industry, and continuously improves the technology engineering to build

a solid technical advantage for enterprise C. For example, C enterprise robot for the first time to introduce AI technology into the field of home service robots, so that science and technology for the home to think and learn, AIVI™ robot through the identification of the home environment, obtain and analyze the obstacle data in the environment, continuous learning and development, so as to propose the best floor cleaning solution; C enterprise in 2020 successfully launched the new DEEBOT T8 series, the first application on the sweeping robot Navigation system for dToF sensors, high-performance 3D structured light obstacle avoidance technology, high-frequency vibration mopping system, automatic dust collection seat, etc. At the same time, since 2006, the company has invested more than tens of millions of yuan in scientific and technological innovation every year, and a number of new R&D products have been launched every year, and the number of R&D personnel in the company has increased from 9.42% to 15.24% from 2015 to 2021, with 721 new R&D personnel, and R&D investment has continued to grow rapidly, making the company's home service robot technology continue to improve compared with the current OEM mode of enterprises in the same industry, the integrated operation mode of research and marketing provides practical experience for its research and development. According to the 2021 annual report, the company has obtained a total of 1,202 authorized patents, including 387 invention patents (including 109 overseas invention patents), a total of 103 invention patents related to software algorithms, and a total of 20 invention patents related to sensor solutions. The number of patents of the enterprise is also significantly ahead. As Company C always adheres to the continuous scientific and technological innovation with "user first" as the core, Enterprise C's home service robot realizes the autonomous, adaptable and intelligent development of home service robots by continuously integrating new technologies such as intelligent voice, processor, AI algorithm, communication, big data, and the Internet of Things, and controls the family through robot intelligence to better meet the needs of consumers for home intelligence.

### **2.1.2. Brand advantage**

Through more than 20 years of deep cultivation in the market, company C has cooperated with large e-commerce platforms such as Tmall, JD.com, and Suning through online channels, and has paid more attention to price advantages; Offline, by covering large and medium-sized cities to establish experience stores, more attention is paid to product promotion, and it has been ranked first in China's industry brand and market share for many years. In February 2013, C enterprise robot participated in the Chicago International Houseware Fair (IHA) and won the only innovation award issued by the organizing committee. In March of the same year, the W730 won the 2013 "Science and Technology Innovation Award" of China Home Appliance Epplan. In July of the same year, C Enterprise Robot won the "2013 Home Service Robot Innovation Gold Award" issued by HousewaresExecutive in the United States. In January 2014, the CES International Consumer Electronics Show in Las Vegas awarded C Company the "Innovative Design and Engineering Award". Through cooperation with the famous international e-commerce platform Amazon, in 2019, Company C has become the top three brands in the market share of sweeping robots in the United States and Europe, and has won wide recognition in the international industry as an advocate of the lifestyle in which robots participate and a pioneer of home service robots.

### **2.1.3. The advantages of independent production**

In terms of production, as a foundry business started with C enterprises have mature production lines and large-scale plants, and large-scale production brings strong bargaining power, providing a guarantee for its supply chain integration and bringing higher cost performance, C enterprise raw material suppliers are the

top in the industry, and important parts are backed up by Chinese suppliers. At this stage, enterprise C has been able to achieve independent production of mid-to-high-end products, which is one of the few manufacturers in the industry with independent production capacity, and has outstanding advantages in cost control ability and research, production and marketing synergy. At present, the company's independent production ratio of service robots has reached 99%, and the products have basically achieved self-production. Unlike some home service robot companies that adopt the OEM production model, Company C has a product research and development center, a supply chain center and a production plant, and sets up a product research and development headquarters and marketing center, covering design, development, production, logistics, sales and other links, constituting a complete value chain. The company adopts an independent production model, which is conducive to protecting its core technology, strengthening product quality control and optimization and upgrading. In addition, according to the announcement of Company C, the unit cost of the company's home service robot independent production continues to be lower than the unit cost of outsourcing, and the unit cost difference in 2015, 2016 and 2017 is 36.95 yuan, 49.80 yuan and 70.13 yuan respectively, and the unit cost saved is also increasing.

## **2.2. Weakness**

### **2.2.1. Lack of high-end technical talents**

Service robots are technology-intensive, talent-intensive and capital-intensive. China has become the world's largest market for robots, and has maintained rapid growth every year, but the quantity and quality of the talent pool are stretched, especially technical talents engaged in professional R&D and application. First of all, service robots are a cross-compound field, involving mechanics, mechanics, electronics and other professional fields, so the requirements for talents are high. Secondly, service robot as an emerging industry, the education and training system of colleges and universities in this field is still in its infancy, although there are many laboratories and industry-university-research cooperation with C company, but there are few universities in China that can cultivate such high-end talents on a large scale.

### **2.2.2. The financial pressure is greater**

With the continuous improvement of the degree of intelligence of home service robot products, it is necessary to continue to invest a large amount of research and development funds for basic and forward-looking research and development, in order to complete the technology accumulation required for the launch of the next generation of products, which greatly enhances the entry threshold of the future home service robot industry, so that the technological innovation enterprises led by company C in the industry are facing greater financing pressure, and have become an important factor restricting the development of the home service robot industry.

### **2.2.3. It cannot better meet the needs of consumers for additional products of home service robots**

Take the sweeping robot with high sales volume of enterprise home service robot category as an example, Through text analysis of the review information on the three major Chinese e-commerce platforms crawled on Jingdong, Tmall, Suning Tesco, "Customer service" "Arrival" "Service" Words such as "service" are the points that users pay more attention to in the whole process of sweeping robots from sale to after-sales, These words reflect consumers' pairs The demand for additional products for enterprise vacuum cleaners. For a complete product, its core products and peripheral products form the basis and basic level of product competition, and additional products become a powerful weapon for brands to cope with fierce competition. For the sweeping robot, its additional products are concentrated in its attractive services, such as delivery services, credit services, sales services, quality assurance, warranty and maintenance, trade-in services, etc. Therefore, in modern

marketing practice, with the improvement of consumer income level and the change of consumption concept, consumers not only pay attention to the value of the product itself, but also pay more attention to the size of the added value of the product when purchasing products. Especially in the case that the quality and performance of similar products are roughly the same or similar, the more complete the additional services provided by enterprise C to consumers, the greater the added value of the products, the greater the actual benefits that consumers will get from them, and the stronger the willingness to consume.

## **2.3. Opportunity**

### **2.3.1. China's national policy encourages and supports the development of the service robot industry**

With the demand for China's transformation from "Made in China" to "Made in China", as well as the continuous development, integration and application of computer technology, information and communication, big data, intelligent sensing and other science and technology in the field of robotics, in order to promote the rapid development of China's service robot industry, the Chinese government and relevant departments have put forward a series of industry support policies, such as "Made in China 2025", "Robot Industry Development Plan (2016- 2020)" and other industrial policies. These policies have largely promoted the development of China's service robot industry.

### **2.3.2. China's service robot market is developing rapidly**

The service robot industry started late, is still in the early stage of development, China and the world are at a similar level of development, and a number of excellent enterprises have emerged. From the perspective of the Chinese market, service robots are one of the fastest growing tracks in China's robot industry. From 2014 to 2019, the scale of China's service robot market continued to expand, growing to \$2.2 billion in 2019, an increase of 33.1% compared with the previous year. According to the data, especially in 2020, affected by the new crown pneumonia epidemic, the market demand for service robots in China ushered in explosive growth, with a market size of 38.38 billion yuan, a year-on-year increase of 37.4%.

### **2.3.3. Household robots are currently the mainstream application**

First, with the acceleration of people's life and work rhythm, people need to be freed from complicated family labor, and second, with the intensification of China's aging, more elderly people need to be taken care of, and the demand for social security and services will be more urgent. According to the data released by the National Institute on Aging, in 2030, the world's elderly population will reach 1 billion, and with the intensification of aging, on the one hand, with the gradual increase of the elderly, the age-appropriate labor force will be scarce, which will lead to the rise of labor costs, the gap between labor costs and service robot costs is gradually narrowing, forcing people to hand over simple programmed work to robots, and increasing the application of service robots in many fields to replace labor is becoming a relatively new development trend in China; On the other hand, with the deepening of aging, the demand of ordinary families for daily life care and family medical health will gradually rise, and home service robots are an important solution to alleviate or even meet this phenomenon, such as home care robots, toy robots, safety control robots, cleaning robots, etc., will be the most important, so the industry has great potential. In addition, with the increasing maturity of technology, the production cost of home service robots has been declining, entering the broad consumer market, driving the rapid growth of the service robot market.

### **2.3.4. The rapid development of new technologies and the improvement of the service robot industry chain**

The deep integration of industrial technologies represented by artificial intelligence, cloud computing, big data, and the Internet of Things, as well as the development of hardware such as intelligent chips, intelligent sensors, servos, and motors, will drive the service robot industry to move rapidly in the direction of intelligence, innovation, and digitalization. In the future, robots are expected to become the entrance and connector of scene data, and an important link to realize the integration of full-scene digitalization and cloud-edge-end collaboration. The industrial chain of service robots will gradually improve, the gradual accumulation of technological innovation achievements, the industry will become more large-scale and systematic, with the continuous penetration of service robots in all walks of life, it is expected to promote the further expansion of the service robot segment.

## **2.4. Threat**

### **2.4.1. Intensified competition in the industry**

Sweeping robots have ushered in rapid growth in recent years, becoming another home appliance explosive, and many manufacturers have also entered the field of sweeping robots. Now in China's sweeping robot market, there are many brands, and the current main competitors of C company are new Internet brands and old manufacturers. At the same time, China's mature foundry industry chain also provides support for other enterprises to participate in cross-border competition.

### **2.4.2. The global economy is slowing down, and the industry reshuffle is intensifying**

Affected by the epidemic in recent years, with the economic downturn, accompanied by the bankruptcy of small and medium-sized enterprises, and the increase in the unemployment rate, on this basis, on the one hand, the income of residents has decreased, and the household service robot as a non-resident daily necessities, residents have reduced their demand for products due to the reduction of purchasing power, on the other hand, individual countries will reduce the demand for robot products because of the demand for employment.

## **References**

- [1] Zhang Minyi, Li Xiaoliang, Wang Qiyue, et al. Problems and strategies in Dongguan sweeping robot industry[J]. SME Management and Technology, 2022(18):4.
- [2] Sun Bing. Why does this Chinese company dare to say that it wants to be the world's top in the service robot industry[J]. China Economic Weekly, 2022, (10): 88-89.