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Marketing Plan of Company S for 2024

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Master in Applied Management

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ISCTE-IUL

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BUSINESS
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Department of Marketing, Operations and General Management

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Abstract

At present, the robotics industry is booming and is dramatically changing the way humans produce and live, injecting strong momentum into economic and social development. Company S has built up a good brand and reputation over the past decade by virtue of its core patented technology, making it one of the leaders in China's robotics industry. However, as domestic and international high-tech companies have become familiar with robotics technology, product development and manufacturing capabilities have become increasingly mature, products have become increasingly homogeneous and competition in the industry has become increasingly fierce. The company's sales continue to rise, but it has been losing money year after year, and the company's marketing strategy needs to be improved. So, the objective of this thesis is design the marketing plan of Company S for 2024. A literature review is presented, as well as the analysis of the macro-environmental of the robotics industry and the internal analysis of the company. Then, the SWOT analysis is used to summarize the strengths, weaknesses, opportunities and threats of Company S. Questionnaires, interviews and data analysis are used as research tools to find out the main problems and their causes. Finally, taking all this analysis and information into consideration, a set of marketing actions are proposed to solve these problems. It is expected that the marketing actions proposed in this thesis can help Company S to reach increase awareness of the industry, attract new customers, increase loyalty and satisfaction of existing customers, increase revenue and thus achieve sustainable expansion and growth of the business.

Keywords: Robot, Marketing Plan

JEL Classification: M31

Resumo

Atualmente, a indústria da robótica está a crescer e a mudar radicalmente a forma como os seres humanos produzem e vivem, injectando uma forte dinâmica no desenvolvimento económico e social. A empresa S construiu uma boa marca e uma boa reputação junto dos utilizadores ao longo da última década de comercialização, em virtude da sua tecnologia patenteada de base, o que a torna um dos líderes da indústria da robótica chinesa. No entanto, à medida que as empresas nacionais e internacionais de alta tecnologia se familiarizaram com a tecnologia robótica, o desenvolvimento de produtos e as capacidades de fabrico tornaram-se cada vez mais maduros, os produtos tornaram-se cada vez mais homogéneos e a concorrência na indústria tornou-se cada vez mais feroz. As vendas de produtos da empresa continuam a aumentar, mas a empresa tem vindo a perder dinheiro ano após ano, e a estratégia de marketing da empresa precisa de ser melhorada. Assim, o objetivo desta tese é desenhar o plano de marketing da empresa S para 2024. Com esse objetivo, é apresentada uma revisão de literatura, assim como a análise do envolvente externa da indústria da robótica e a análise interna da empresa. A análise SWOT é utilizada para sumarizar os pontos fortes, os pontos fracos, as oportunidades e as ameaças da empresa S. Foram realizados questionários aos utilizadores, entrevistas e a análise de dados são utilizados como instrumentos de investigação para identificar os principais problemas da empresa e as suas causas. Finalmente, tendo em consideração todas as análises efetuadas e a informação recolhida, propõe-se uma conjunto de ações de marketing para resolver estes problemas. Espera-se que as ações de marketing propostas nesta tese possam ajudar a Empresa S a atingir os seguintes objetivos aumentar o conhecimento do sector, atrair novos clientes, aumentar a fidelidade e a satisfação dos clientes existentes, aumentar as receitas e, assim, conseguir uma expansão e um crescimento sustentáveis da empresa.

Palavras-Chave: Robot, Plano de marketing

JEL Classification: M31

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Glossary

STP – Segmentation, Targeting, and Positioning

PESTE – Political and Legal, Economic, Socio-cultural, Technological, Environmental

SWOT – Strenghts, Weaknesses, Opportunities, Threats

GDP – Gross Domestic Product

RMB – Renminbi （Chinese currency）

STEAM – Science, Technology, Engineering, Art and Mathematics

R&D – Research and Development

HRI - Human Robot Interaction

1. Introduction

Nowadays, the robotics industry is not only the focus of attention of the world's technological powers, but also the benchmark for the future international competitiveness of developed economies. With an aging population, shortage of human resources and rising labour costs, the robotics market has a very bright future. Of course, Chinese robotics companies will also see huge development opportunities and unprecedented challenges in this market. Robots are divided into industrial robots and service robots. Based on published data on the robotics industry, projections for the future indicate that industrial robots market is growing much slower than service robots market. As human demand for service robotics products grows, many companies are beginning to turn their attention to the field of intelligent services. How to quickly integrate robots into the service industry will be the next goal for robotics companies and an important guarantee of long-term success for every robotics company.

Company S is mainly engaged in the business of educational robots. The company has a series of marketing problems that need to be overcome, such as slow product iteration, high prices, imperfect online sales channels, few promotions and promotional activities that are not as effective as expected. Therefore, this article will deeply analyze the marketing problems of S company, find out the methods and countermeasures to solve these problems, and formulate the marketing plan of S company in 2024.

This thesis uses a variety of research methods, such as literature review, data analysis and questionnaire and Delphi expert interviews. Firstly, by consulting the literature on marketing plan, segmentation, target and positioning, marketing mix and the status quo of service robots, summarize the theoretical support and writing direction; then formulate reasonable goals through Delphi expert interview method; finally, conduct customer surveys and analysis, in order to directly understand the real needs of customers.This thesis is divided into five chapters. The first chapter is the introduction, which describes the background of this thesis, its the purpose of this thesis and the used methodology. The second chapter is the literature review and the chapter 3 is the methodology. Chapter 4 presents the marketing plan, which is composed by the executive summary, an analysis of the external environment of Company S, analysis of the internal operating environment of the enterprise, the SWOT analysis, the marketing plan objectives, the segmentation, targeting and positioning, the marketing-mix, the implementation schedule and the budget. Finally, chapter 5 presents the Conclusion.

2. Literature Review

2.1. Marketing

Marketing is the strategic process and set of activities that businesses and organizations undertake to create, communicate, deliver, and exchange value with customers. It involves understanding customer needs and preferences, developing products or services that fulfill those needs, and effectively promoting and distributing them to the target audience. Marketing encompasses a range of activities aimed at building strong customer relationships, driving sales, and achieving business goals.Marketing can be defined as the systematic process of identifying, anticipating, and satisfying customer needs and desires through thoughtful product design, effective communication, and efficient distribution. It involves the creation of value for both customers and the business, leading to mutual benefits and sustainable growth.Armstrong and Kotler, (2019).

Feng and Zhixian (2021) argued that with the rapid popularization of the Internet, people's consumption concept and consumption habits have changed greatly. As such, the authors argue that enterprises should change their marketing concept in time, pay attention to online marketing activities, and strive to realize online and offline linkage, so as to further improve their market competitiveness.

Qian (2022) argues that enterprises should pay attention to marketing management and take practical and effective measures to continuously improve it, thus promoting the development of marketing in multiple dimensions and creating more economic and social benefits for enterprises. According to Bei (2022), companies need to pay attention to marketing management in the process of enterprise development, and formulate marketing strategies in line with the development goals of the enterprise. Shengde (2022) points out that in marketing management, consumer psychology becomes an important research content. The psychological changes of consumers have a great impact on the marketing situation of goods, so the current situation of marketing needs to be analyzed and specific measures of marketing management under consumer psychology are proposed from several aspects.

Wen (2023) believes that with the development of new retail technology and artificial intelligence technology, companies should follow the trend of the times, make appropriate changes and adjustments, and actively respond to the challenges brought by the Internet. Facing the new trend of the Internet economy, companies have to establish new mechanisms, new goals and new systems, and change their traditional marketing concepts, in a sense to

guide market consumption and improve economic efficiency to match the development of society.

2.2. Marketing Plan

According to Shilin (2005), the lack of a plan for marketing will lead to confusion in actions and financial expenditures and may put the company in a disadvantageous position in the market competition, so every company must use a plan. So, the formulatation of the marketing plan is one of the most important tasks in the marketing process. Feng (2007) also believes that the marketing plan is an essential part of the marketing process.

2.3. Segmentation, Targeting, and Positioning

According to the Segmentation, Targeting and Positioning (STP) marketing model, companies should first segment the market and then decide on the final choice of target segments based on the segmentation and find their positioning (Kotler, 2014).

The concept of market segmentation was introduced by Smith (1956). Customers can be distinguished according to different characteristics and they also have different needs, which can be studied to help the product to find the target customers and also to adjust the marketing plan (Tarver, 2023). Market positioning is the process of creating a unique impression in the minds of customers, standing out from the crowd and effectively enhancing brand impact (Kompella, 2014).

2.4. Marketing Mix

McCathrthy (1960) proposed the famous 4Ps theory of product, price, place, and promotion. Each 'P' represents a different aspect of the marketing mix:

- Product: This refers to the physical product or service offered to customers. Companies need to consider factors such as product features, design, quality, branding, packaging and any unique selling points that differentiate it from competitors.
- Price: Pricing involves determining the monetary value of the product or service. Factors that influence pricing include production costs, competition, customer perceived value, and the firm's overall pricing strategy (e.g., premium pricing, penetration pricing).

- Place (distribution): Place refers to how the product reaches the customer. It includes decisions about distribution channels (e.g., direct sales, retailers, online platforms), geographic distribution locations, inventory management, and ensuring that the product is available when and where customers want it.
- Promotion: Promotion encompasses all activities designed to create awareness and demand for the product. It includes advertising, public relations, sales promotions, social media marketing, influencer collaborations and any other communication effort that communicates the benefits of the product to the target audience.

Lauterborn (1990) proposed a new customer-centric marketing theory, which became famous as the 4C theory, which is about Customer, Cost, Convenience, and Communication. Each "C" represents a different aspect of this customer-focused approach:

- Customer Value : The focus shifts from the product itself to the value it provides to customers. This includes understanding how the product or service solves a customer's problem or fulfills their needs, as well as the overall benefits it offers.
- Customer Cost : This considers the total cost to the customer beyond just the monetary price. It encompasses factors such as time, effort, and emotional investment required to research, purchase, and use the product or service.
- Convenience : Convenience relates to how easily customers can access and acquire the product. This considers factors like distribution channels, online platforms, delivery options, and the overall shopping experience.
- Communication (instead of Promotion): Communication in the 4Cs framework focuses on engaging customers in meaningful interactions. It's about two-way dialogue, active listening, and providing valuable information and solutions through various communication channels.

Schultz (2001) developed the 4R theory, which is based on the elements of Relevancy, Reaction, Relationships and Reward. According to the author, the 4Rs give equal attention to the interests of the company and the needs of the consumer.

- Relevancy: This element highlights the importance of offering products, services, and communications that are relevant to the needs and preferences of the target audience. In a rapidly changing market, staying relevant helps capture the attention of consumers and keeps them engaged.

- Reaction: The "Reaction" component focuses on eliciting a response or action from consumers. This involves creating marketing strategies that prompt consumers to take specific actions, such as making a purchase, sharing content, or engaging with the brand.
- Relationships: Building strong and meaningful relationships with customers is a core aspect of the "4R theory." This involves fostering connections that go beyond one-time transactions, leading to customer loyalty, advocacy, and repeat business.
- Reward: The "Reward" element acknowledges the importance of providing value and benefits to consumers. Rewards can take various forms, such as discounts, exclusive offers, personalized experiences, or any other incentives that enhance the consumer's experience.

To conclude, different marketing mixes can help companies to solve different problems encountered in companies.

Figure 2.1 - Marketing Mix Comparison Chart

Source: Author

2.5. Service Robots

According to Wenbao (2020), the era of intelligent service robots has come and gone, and as the market for intelligent robotic products expands, the way of life for humans is changing dramatically. In order to achieve breakthroughs in various fields of service robot products, most countries around the world have formulated corresponding policies to pave the way for their advancement.

Yanwen (2021) used the 4P theory to develop a marketing mix strategy for the New Coordinate company. This study is a great contribution to further increase the market share of New Coordinate in Changchun robotics education market.

According to Chen et al. (2021), the academic literature on service robots has grown substantially over the last decade. The analysis of emergent keywords and literature co-citation shows that the research on service robots relies more on the combination of new theories and technologies, and the sociological theory reflecting human-machine integration is the current research hotspot. Furthermore, the scale, intelligence, human-like and interaction form diversification are important for the future development of service robots.

Liu et al. (2021) concluded that the level of robot anthropomorphism can influence customers' willingness to co-create value in the service interaction process.

According to Shiqi and Wei (2022), using AI-self-connection as a mediating variable, the influence of the interaction mode of service robots on willingness to use was studied, and the moderating role of usage scenarios and perceived intelligence in this process was also analyzed. Yuan et al. (2022) found that in the context of the trend of new role attributes and deep interaction needs, compared with HRI research and applications at the level of "computational intelligence" such as localization, planning and recognition, the current HRI research in China lacks a focus on user experience, multimodal natural interaction and social interaction. This has become a problematic point for service robot application innovation and industrial development. It can be said that it is crucial to consider Human-Centered Design (HCD) and how HRI should be shaped.

China's service robot market is expanding and gradually gaining a firm foothold in the robotics market applications, and the service robot industry still has a long way to go in the future. To promote the service robotics industry to continue to develop for the better, it is urgent to explore a good development strategy (Jia, 2023).

3. Methodology

The objective of this thesis is to develop the marketing plan of Company S for 2024. By doing a literature review and analysing the external and internal environment of the Company S, a marketing plan is designed for the transformation of the company's customer marketing service system to adapt to the new market environment and meet the trend of consumer demand.

The objectives of this marketing plan are: increase sales and profits, Company S's visibility in the industry attracts new customers while increasing the loyalty of existing customers to Company S, leading to sustainable business expansion and growth.

Use the Questionnaire Star questionnaire applet on WeChat to conduct a survey on the target customer group (parents of students). The purpose of the survey is to understand customers' real needs, motivations, acceptable prices, advertising channels, promotions, and other preferences, as well as areas where the product still needs improvement. The survey began on July 1 and ended on July 31, and 187 valid questionnaires were returned.

Delphi expert interviews, through interviews with 8 internal experts. They come to the company's senior management team and marketing department, and they have a very good understanding of the internal and external environment of S company. Each person makes three annual forecasts for 2023, 2024, and 2025 operating income.

4. Marketing Plan

4.1. Executive Summary

Currently, service robots have entered a stage of rapid development, and the competition in the industry is extremely fierce. The goal of Company S's 2024 marketing plan for educational robots is to achieve the long-term goal of sustained growth in profits and operating income by increasing brand awareness, attracting new customers, and improving the loyalty of existing customers.

Based on the above objective considerations, a comprehensive analysis of Company S was conducted in three aspects: external environment, internal environment and SWOT.

Firstly, I used the PEST method to analyse the impact of changes in China's macro-factors in recent years on Company S, such as political, economic, social, cultural, technological and environmental factors. Then, I analysed the industry, competitors, Porter's Five Forces, and consumer preferences to further understand the changes and trends occurring in the external environment.

Secondly, I analyse the problems in marketing of Company S based on its characteristics, business strategy and positioning, i.e. mission, vision, values, investment analysis and customer analysis.

Thirdly, SWOT analysis is used to find out the strengths, weaknesses, opportunities and challenges of Company S. Based on this, the STP method is used to research the market segments and determine the market segment objectives and positioning of S Company.

Finally, based on the data analysis, Company S's marketing plan mix for 2024 is proposed and the budget and control to achieve these goals.

Figure 4. 1-Promotion objectives, proposal and budget of Company S's toner for 2024

Source: Author

4.2. External Situational Analysis

4.2.1. PESTE Analysis

4.2.1.1. Political and Legal Context

Government policies and initiatives

The Chinese government has been actively promoting the development and adoption of robotics through various policies and initiatives. For example, on 2022-07-06, the Ministry of Industry and Information Technology, the National Development and Reform Commission, the Ministry of Science and Technology, the Ministry of Public Security, the Ministry of Civil Affairs, the Ministry of Housing and Urban-Rural Development, the Ministry of Agriculture and Rural Development, the National Health Care Commission, the Ministry of Emergency Management, the People's Bank of China, the State Administration of Market Supervision and Administration, the China Banking and Insurance Regulatory Commission, the China Securities Regulatory Commission, the National Defense Science and Technology Industry Bureau, and the National Mine Safety Supervision Bureau, approved the "14th Five-Year Plan" for the development of the robotics industry.

Made in China 2025 is a strategic document issued by the State Council in May 2015 to comprehensively promote the implementation of a strong manufacturing country, and is the action programme for the first decade of China's implementation of the strong manufacturing country strategy. The manufacturing industry is the mainstay of the national economy and is the foundation of the country, the instrument for the prosperity of the country and the basis for the strength of the country. Made in China 2025 is a top-level plan and roadmap for China's manufacturing industry in the next 10 years, which intends to promote China's basic industrialisation by 2025 and move into the ranks of a manufacturing power by striving to achieve three major transformations: Made in China to Create in China, Speed of China to Quality of China, and Products of China to Brand of China. Subsequently, regulatory documents have been issued to guide the coordinated and healthy development of China's robotics industry, such as the Notice on Promoting the Healthy Development of the Robotics Industry and the Guidelines for the Declaration of Special Projects for 2017 for the "Intelligent Robotics" Key Project. At the national level, actions have been deployed in the field of intelligent service robots such as medical rehabilitation, elderly care services, courier services and multifunctional industrial services.

In the field of intelligent robot technology development, the 14th Five-Year Plan outlines the need to break through advanced controllers, high-precision servo drive systems, high-performance reducers and other key technologies for intelligent robots. Key core technologies should be strengthened, and the promotion and application of intelligent manufacturing equipment and systems should be accelerated. The 5G Application "Sailing" Action Plan (2021-2023) states that the integration of 5G technology with robotics should be promoted and 5G applications should be enriched. Intelligent service robots will continue to make new breakthroughs in key technologies such as environmental perception, natural interaction, independent learning and human-robot collaboration, and the continuous progress of science and technology will bring a broader development blueprint for the industrial robot industry.

Intellectual property protection

Intellectual property protection is an important issue for the service robotics industry in China. Companies operating in China need to address intellectual property protection and take steps to protect their innovations, patents, copyrights and trade secrets.

Data privacy and cyber security

China has implemented data protection and cyber security laws and regulations to protect user data and privacy. Service robotics providers must comply with these regulations to ensure secure operations and prevent data breaches and security breaches.

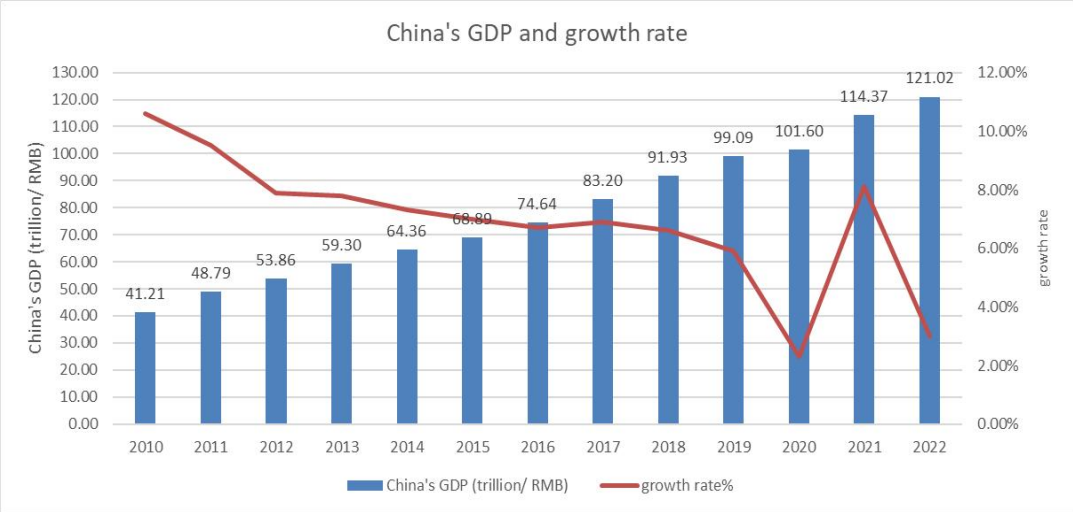
Trade and investment regulations

China's trade and investment regulations can impact the import and export of service robots. The government's policies and trade relationships with other countries, such as tariffs, quotas, and market access restrictions, can affect the competitive landscape and market opportunities for service robot manufacturers.

4.2.1.2. Economic Context

China has the world's second-largest economy, and its GDP continues to grow steadily. The size of the Chinese market provides significant opportunities for the service robotics industry. Increasing urbanization, rising disposable incomes, and a growing middle class contribute to the demand for service robots across various sectors. According to China's National Statistics, China's GDP was about 121 trillion yuan in 2022, which is a new step after breaking through 100 trillion yuan and 110 trillion yuan consecutively in 2020 and 2021. By quarter, the GDP for the first to fourth quarters was RMB270.178 billion, RMB292.464 billion, RMB307.627 billion and RMB339.938 billion respectively, with growth rates of 4.8%, 0.4%, 3.9% and 2.9%, respectively. It can be concluded that China's economy has recovered faster than expected after the epidemic prevention and control measures. The following chart reflects the trend of China's GDP.

Figure 4.2 - China’s GDP and Growth rate



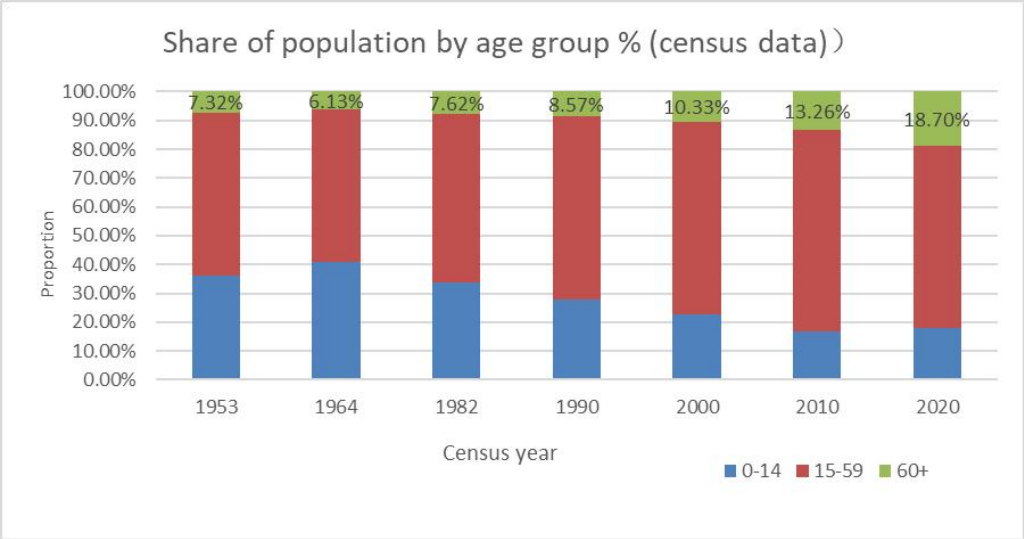
Source: National Bureau of Statistics of China

As regards to the consumer purchasing power, China's rising disposable incomes and expanding middle class contribute to increase the consumer purchasing power. This enables greater affordability and adoption of service robots for personal use, such as household cleaning robots, entertainment robots, and personal assistance robots.

4.2.1.3. Socio-cultural Context

China is experiencing an aging population, with a large number of elderly citizens requiring care and support. According to the National Bureau of Statistics of China, the number of people aged 65 and over is increasing every year.Service robots may play a vital role in addressing the challenges associated with elderly care, healthcare services, and support for an aging workforce. Thus, this demographic factor drives the demand for service robots in sectors like healthcare, eldercare, and rehabilitation.

Figure 4.3-Share of population by age group

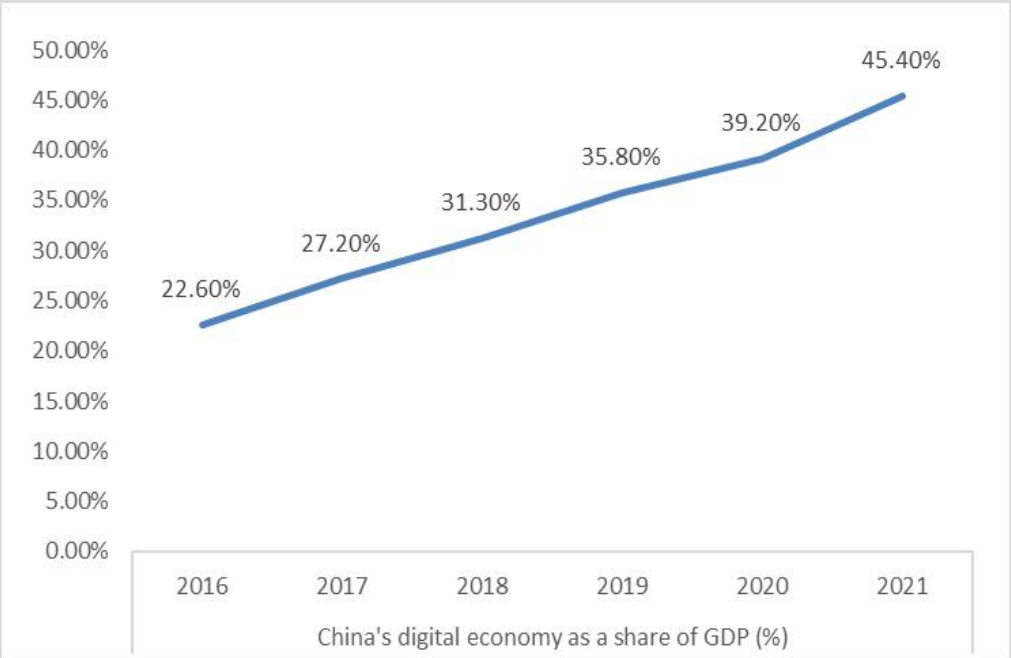


Source: National Bureau of Statistics of China

Since the reform and opening up, and due to rapid economic growth, data from previous Chinese censuses shows that the average education level of Chinese people has increased rapidly. Chinese society has shown increasing acceptance and openness towards new technologies, including service robots. Consumer attitudes are generally positive, as seen in the popularity of service robots in sectors like hospitality, entertainment, and education. Chinese consumers are often early adopters of new technologies, which creates a favorable market environment for the service robotics industry.

According to data from the China Academy of Communications, China's digital economy has been increasing year by year as a proportion of GDP, and the digital upgrade of the industry has brought about a broad application space for service robots.

Figure 4.4 - China’s digital economy as a share of GDP



Source: National Bureau of Statistics of China

4.2.1.4. Technological Context

The current new round of technological revolution and industrial change is accelerating, and the new generation of information technology, biotechnology, new energy, new materials and robotics are deeply integrated, and the robotics industry is ushering in a window of upgrading and leapfrogging. The world's major industrialized countries have made robotics the frontier and focus of competition in the science and technology industry, and have stepped up their planning and layout. The media's publicity and the vigorous layout of head companies have caused a boom in robotics research.

As regards to the technological advances, China has made significant progress in the fields of robotics and artificial intelligence. China has a strong R&D ecosystem with world-class universities, research institutes and technology companies. Breakthroughs have been made in areas such as artificial intelligence algorithms, computer vision, natural language processing and human-robot interaction. These technological advances are driving the development of intelligent, versatile and efficient service robots. In terms of manufacturing capabilities, China has a strong manufacturing infrastructure and manufacturing capabilities. China's efficient and cost-effective manufacturing capabilities support the production and expansion of service

robots. China's manufacturing strength provides a competitive advantage for Chinese service robotics companies and supports the growth of the industry.

4.2.1.5. Environmental Context

As regards to environmental regulations and sustainability, China has always had a focus on environmental sustainability. The government has implemented a number of environmental regulations and initiatives to promote energy efficiency and reduce carbon emissions. In the service robotics industry, there is an increasing focus on developing energy-efficient robots to reduce energy consumption and environmental impact.

At the same time, proper waste management and recycling are important issues for the service robotics industry. Companies are encouraged to adopt recycling schemes and environmentally friendly disposal methods to reduce the generation of e-waste and promote a circular economy.

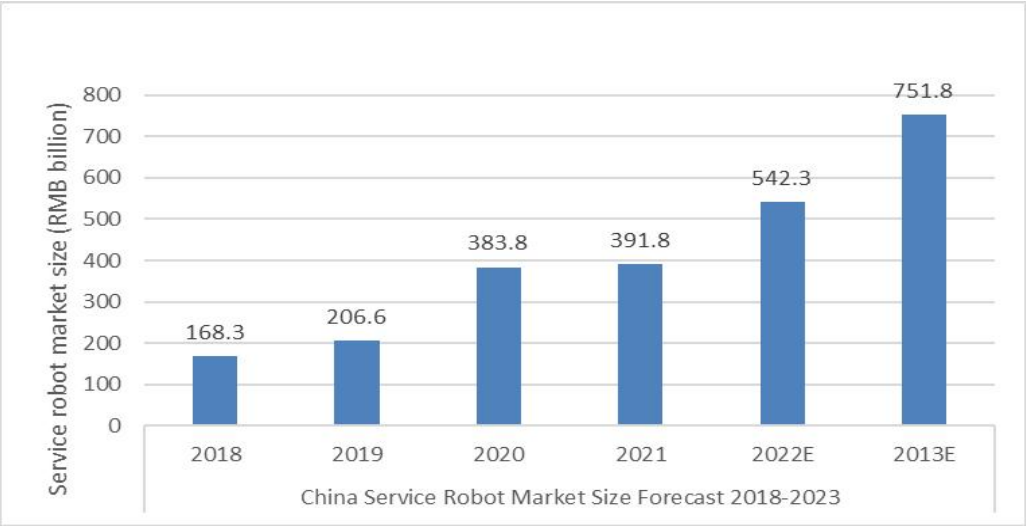
4.2.2. Sector Analysis

According to the International Federation of Robotics (IFR) classification criteria, robots can be divided into industrial and service robots. Industrial robots are those used in production processes and environments whereas service robots are those used in non-manufacturing industries .

From an industry chain perspective, the service robotics industry can be divided into three parts: upstream core components and software system development, midstream service robotics body manufacturing, and downstream individual consumers and commercial users of various application scenarios. The service robot industry chain involves technologies that span a number of high-tech fields such as communications and artificial intelligence, with high technical barriers in each segment.

Company S is in the midstream of the industry chain. The manufacturing of service robots is divided into three main categories: personal/home service robots, public service robots and special robots. At present, China's intelligent service robots have been applied in more commercial fields and it is becoming a trend. According to Sadie data, the market size of service robots in China was RMB39.18 billion in 2022 and is expected to reach RMB75.18 billion in 2023.

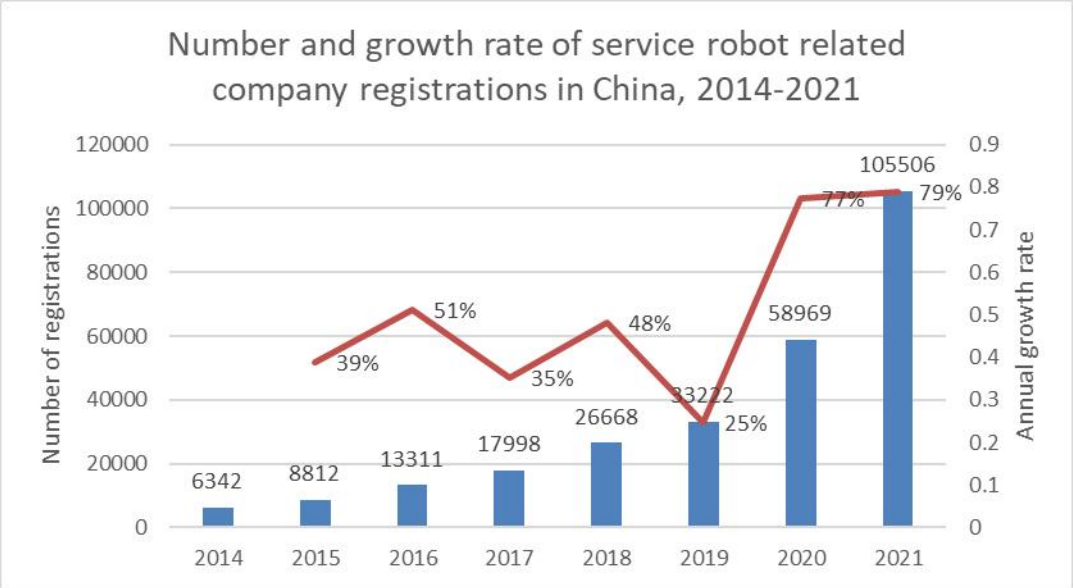
Figure 4.5 - China's Service Robot Market Size Forecast 2018 - 2023



Source: National Bureau of Statistics of China

The Covid epidemic has driven explosive demand growth for online offices coupled with an aging population in China, the development of AI and chip technology and policy support, among other factors, the value of service robots has been further tapped and the industry is rapidly moving past the market baby stage and into a rapid development phase. According to the National Bureau of Statistics of China, the number of service robot-related companies in China has grown by 77% in 2020 and 79% in 2021, and the number of service robot-related companies in China has increased by 296% in the past three years, exceeding 100,000 by year-end 2021. In summary, China has already achieved a full industrial chain layout for service robots and has a complete industrial ecosystem. With the influx of companies, an industrial revolution in service robotics is on the horizon.

Figure 4.6 - Number and Growth Rate of Service Robot Related Company Registrations in China,2014-2021



Source: National Bureau of Statistics of China

Computer vision and voice interaction enable intelligent robots to interact with their surroundings, humans and other robots; motion planning and control and positioning navigation enable intelligent robots to move through more complex environments, while servo drives further increase the flexibility and precise movement of intelligent robots. As a result, robotics companies with a full suite of core technologies, such as S Corporation, will have more opportunities to compete in the future intelligent service robot solutions industry.

4.2.3. Competitor Analysis

The Chinese intelligent service robotics solutions industry is highly competitive. However, most are SMEs, there are no overwhelmingly dominant brand players and only a few players in the industry are able to offer a full stack of core technologies (including computer vision, voice interaction, servo drives, motion planning and control, and positioning and navigation). Company S is one of the top five suppliers of intelligent service robot solutions in China (based on revenue in 2021). The following table provides information on the top five players in the Chinese market.

Table 4.1 - Major Competitors

1	2	3	4	5
Company A	Company B	Company C	Company S	Company D
Founded in 2015 and headquartered in Beijing, China. The company specialises in cloud-based robotics and operating platforms.	Founded in 2014 and headquartered in Hangzhou, China. The company provides customers with leading machine vision products and mobile robots.	Founded in 1999 and headquartered in Nanjing, China. The company specialises in inspection robots for the power, energy and municipal sectors.	Founded in 2012 and headquartered in Shenzhen, China. The company is the pioneer and leader of AI-enabled robots in China.	Founded in 2000 and headquartered in Jinan, China. The company specialises in inspection robots for the power industry.
Intelligent Administrative Robot	Intelligent Logistics Robot	Intelligent Inspection Robot	Intelligent Education Robot	Intelligent Inspection Robot
√	×	×	√	×
14	11	10	7	5
4.8%	3.8%	3.8%	2.4%	1.7%

Source: Author

4.2.4. Porter's Five Forces

Porter's Five Forces is a framework developed by Michael Porter, a renowned strategy expert, to analyze the competitive dynamics and the attractiveness of an industry. It provides a structured approach for assessing the attractiveness and profitability of an industry by considering five key forces that shape its competitive landscape. This model is used below for the analysis of the robotics industry where Company S operates.

Threat of new entrants

The service robotics industry may face a moderate threat of new entrants. With advances in technology and lower barriers to entry, new companies can develop and launch service robots, and companies such as Xiaomi, Huawei and Tesla continue to develop new products.

Bargaining power of suppliers

Key components for intelligent service robots include processors, sensors, chips, batteries and cameras, all of which are subject to price fluctuations or shortages. Chips, for example, are a key component of a robot because they determine the efficiency of the device. Semiconductors are also a key component of many intelligent service robot products. Any shortage of chips or semiconductors throughout the robotics industry and other industries could result in higher chip purchase prices and disruptions in the supply of key components required for the production process. In addition, any export restrictions on chips or semiconductors imposed by the U.S. government could further impact the supply of chips to the Chinese robotics industry and other industries. As such, producers of robots may not be able to obtain sufficient replacement parts for existing production processes or obtain other chips in a timely manner or at all. Chips could only be purchased at high prices.

Consequently, it can be concluded that the power of suppliers is high.

Buyer bargaining power

Buyers of service robots, such as companies or consumers, have varying degrees of bargaining power. Institutional customers, as large customers with large purchase volumes, may have more bargaining power and demand lower prices or customised solutions. Individual customers do not have a significant bargaining power. The buyer's bargaining power may be limited if there are few substitutes or if the service robot offers a unique value proposition.

Threat of substitute products

The threat of substitutes is relatively low in the service robotics industry. Service robots typically offer unique capabilities and functions that are difficult to replicate with other technologies. However, no product is irreplaceable, and as the industry evolves and technology advances in certain application scenarios, alternatives to these products may emerge at any time.

Rivalry among existing competitors

Competition in the service robotics industry is fierce. Many companies, both domestic and international, are investing in research and development to develop more advanced and efficient service robots. Established companies, start-ups and technology giants are all vying for market share, resulting in intense competition, innovation and pricing pressure.

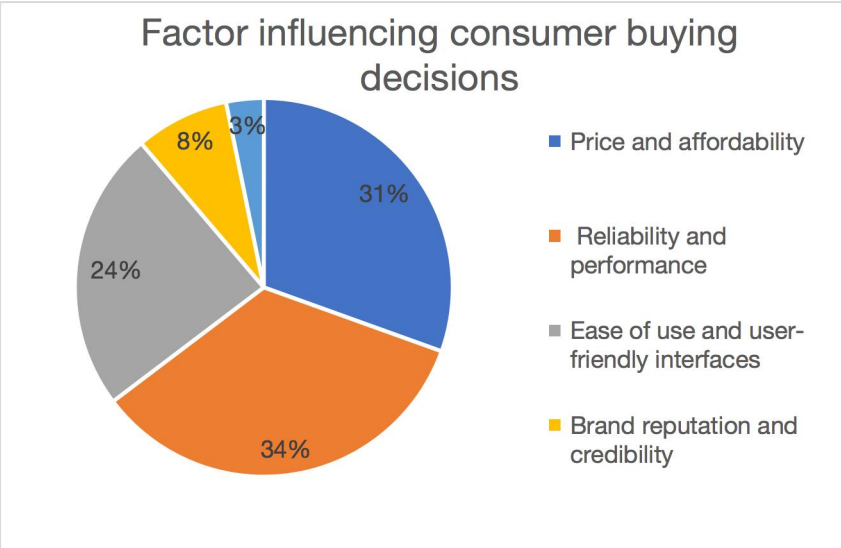
Overall, the service robotics industry is experiencing significant adjustments and opportunities. Advances in technology, falling costs and increasing market demand are driving growth. However, to succeed in this dynamic industry, service robotics companies must manage the challenges of competition, supplier relationships and customer demand, continually innovate and meet real customer needs.

4.2.5. Consumer preferences

The author designed and released a questionnaire on WeChat by using the questionnaire star questionnaire survey programme. 187 parents answered the questionnaire. Through the analysis of the survey data, the following consumer preference results were obtained.

As regards to the factors influencing the purchase decision of educational robots, 34% of respondents consider the most important this is reliability and performance and 31% prioritise price and affordability (Figure 4.7).

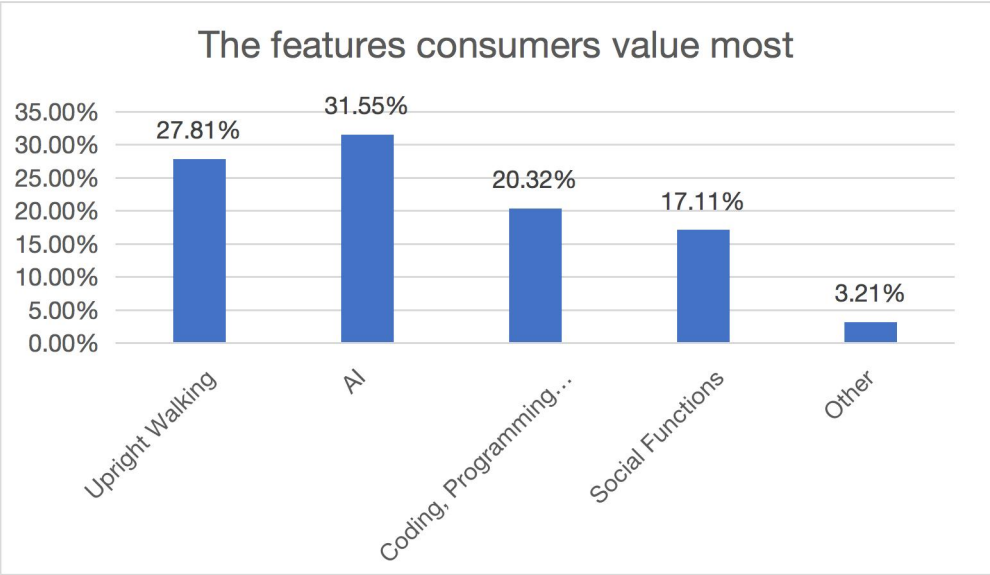
Figure 4.7 - The factors influencing the purchase decision of educational robots



Source: Author

The features of educational robots more valued by the respondents are AI-enabled interaction (32%), and 28% want educational robots to walk upright (Figure 4.8).

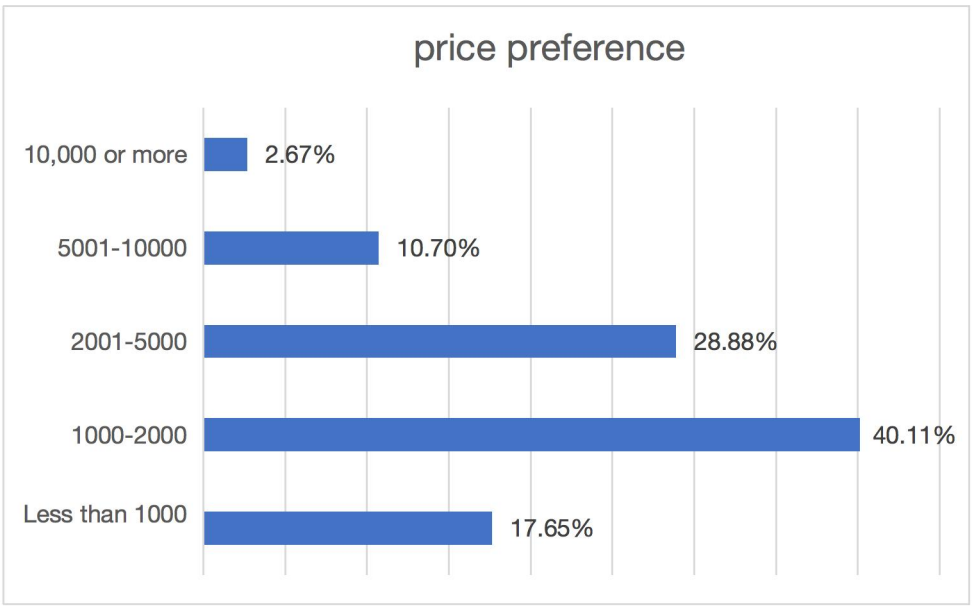
Figure 4.8 - The features consumers value most



Source: Author

About 40% of respondents are able to pay between RMB1,000 and RMB2,000 for an educational robot, and almost 30% are able to pay between RMB2,000 and RMB5,000. Only about 18% do not accept to pay more than RMB 1,000 for these products (Figure 4.9).

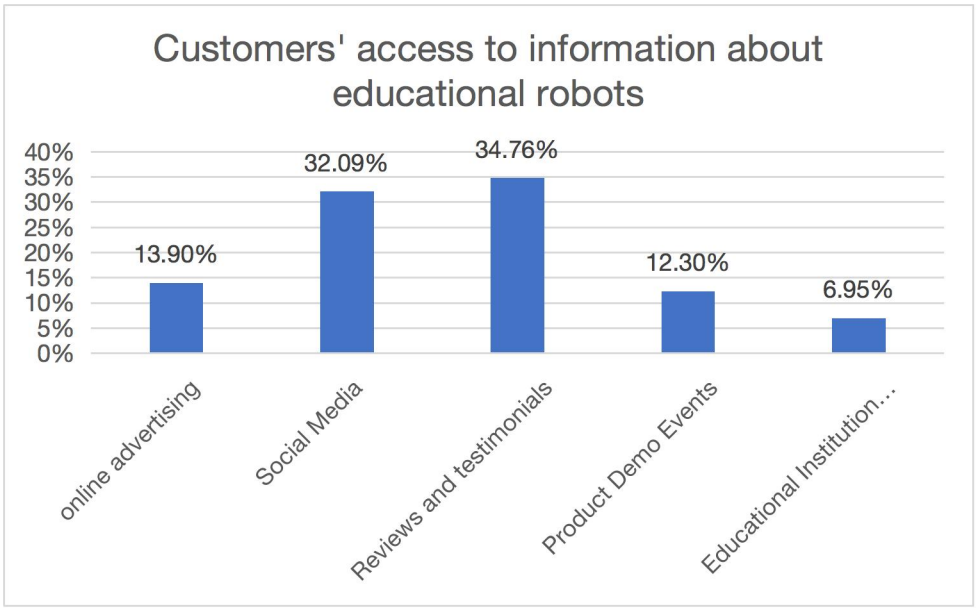
Figure 4.9 - Consumer price preferences



Source: Author

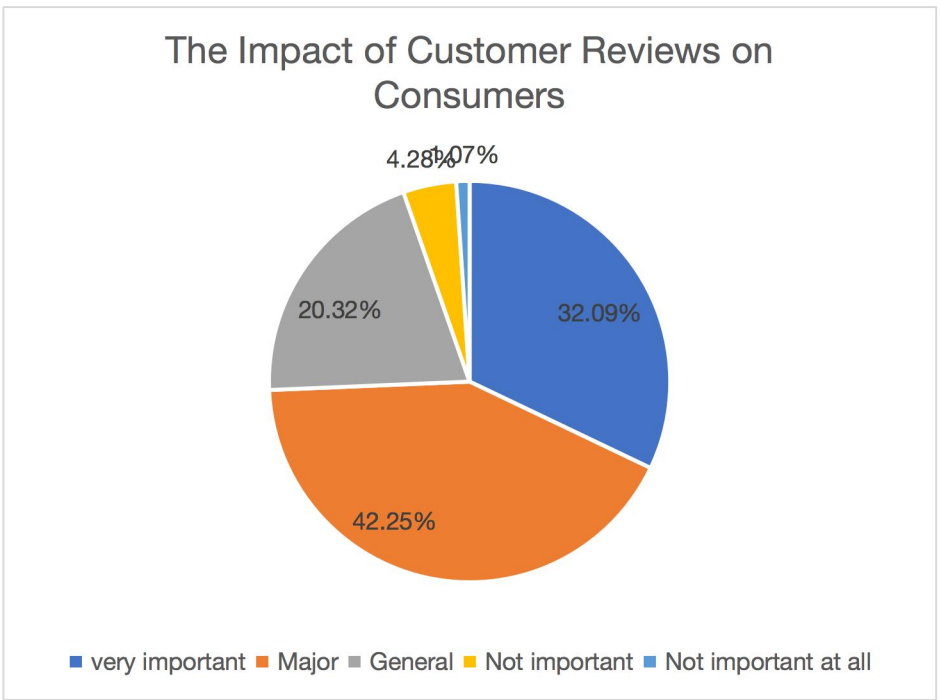
Most of the respondents would like to get information about educational robots on online social media (Figure 4.10). Customers' reviews have a great impact on respondents' purchases (Figure 4.11).

Figure 4.10 - Customers' access to information about educational robots



Source: Author

Figure 4.11 - The Impact of Customer Reviews on Consumers



Source: Author

4.3. Internal Situational Analysis

4.3.1. Characterization of the company

Company S was founded in 2012 with a registered capital of RMB 396 million. The company has invented and produced more than 50 kinds of robot-related products, and is a leading enterprise of humanoid robots and intelligent service robots in China. Company S has been engaged in the research and development, design, intelligent production and sales of intelligent service robots. It has built an intelligent robot solution integrating hardware, software, service and content, covering a wide range of industries, such as AI education, intelligent logistics, intelligent health care and business services. S Company is the first intelligent service robot solution company in China.

Company S is one of the top two intelligent service robotics solution providers in China (based on 2021 revenues), with full-stack technology capabilities, and the number one provider of intelligent robotics products and solutions in the education sector in China (based on 2021 revenues). Company S was also the first company in China to launch a commercially available bipedal life-sized humanoid robot, the first company in the world to reduce the cost of a bipedal life-sized humanoid robot to less than $100,000, and the first company in China to commercialise a small humanoid robot on a large scale. Company S is one of the few companies in the world to have developed a full-stack humanoid robotics technology, and Company S is one of the few companies in the world to have completed mass production of low to high torque servo actuators with torques ranging from 0.2 Nm to 200 Nm. As of 31 December 2022, Company S holds more than 1,600 patents related to robotics and artificial intelligence, of which approximately 50% are for inventions. Table 2presents the Company S' s milestones.

Table 4.2 - Company S's Milestones

Year	Milestones
2012	ThetCompany is founded and begins researching, developing and designing robots.
2015	Alpha Robotics exhibited at the China Hi-Tech Fair.
2016	540 Alpha robots performed simultaneously at China Central Television's Spring Festival Gala ("Spring Festival Gala"), one of the world's most-watched national network television broadcasts, which was registered as a Guinness World Record in 2016.
2017	Launch of Cruzr, an integrated service intelligence robot product. The company is included in CB Insights' Top 100 list, a list of the 100 most promising private companies in the world.
2018	Development of Walker, the first generation of humanoid robots. The total production of and servo actuators reached one million units. Selected for the 2018 'Internet Plus , Artificial Intelligence Innovation and Development and Digital Economy Pilot Major Project by the National Development and Reform Commission of the People's Republic of China, and undertook a project to industrialise high-end intelligent service robot products.
2019	The Chinese New Year party show. Named by MIT Technology Review as one of the "World's 50 Smartest Companies" worldwide.
2020	The service robot project was selected by the Ministry of Industry and Information Technology of the People's Republic of China as one of the key task entities for the new generation of Al industrial innovation. The project "Development and Application of Intelligent Control System for Service Robots" won the Wu Wenjun Award for Progress in Artificial Intelligence.
2021	The Robotics Industrial Design Centre was selected as the fifth batch of China's National Industrial Design Centres.
2022	The robot performed at the opening ceremony of the Beijing Winter Olympics.
2023	Named by Analytics Insight as one of the top 10 pioneering companies in the rise of humanoid robots.

Source: Author

4.3.2. Business Strategy and Positioning

Company S intends to implement the following business strategies:

- Further strengthen the Company's research and development capabilities to enhance the Company's core technology, product and solution offerings
- Continue to expand the Company's business through acquisitions/investments
- Strengthen the R&D infrastructure to enhance R&D capabilities and efficiency
- Enhance the Company's global brand awareness and market penetration
- Further improvement of the management and operational efficiency of the Company.

Positioning: S Company focuses on applied R&D, forward-looking R&D and commercialisation of core artificial intelligence and robotics technologies, providing multi-industry solutions including commercial services, intelligent recreation and health care, public health and epidemic prevention, empowering new infrastructure and promoting intelligent transformation and upgrading of services in various industries.

4.3.3. Mission, vision and values

Mission - Bringing intelligent robots into every family, and making everyday life more convenient and intelligent.

Vision - Intelligent robots as the carrier, artificial intelligence technology as the core, to create a "software + service + content" intelligent service ecosphere

Values - Excellence and Innovation, Positivity and Toughness, Co-operation and Win-Win, Simple and Straightforward

4.3.4. Analysis of R&D and marketing expenses

Upon reviewing the company's information and communication with the company's executives, it was found that the company had adopted a product design-heavy, marketing-neutral approach to its investment portfolio.

1） Investment focus:

Company S's investments over the past three years have been focused on two key areas: product development in geriatric robotics and service robots for the transport of goods. These product areas are relatively new and are currently in the early stages of marketing and therefore generate relatively little revenue.

2） Product Development

The Company's investment strategy emphasises the importance of continued investment in research, development and upgrading of existing robotic products. This underlines the Company's commitment to maintaining and improving product quality, functionality and competitiveness. This is consistent with a long-term approach to product excellence.

3）Investment in marketing

An obvious gap in the investment strategy is the minimal allocation of resources to marketing activities. Although some exhibition activities have been undertaken, the results were not satisfactory. The lack of marketing investment led to challenges such as low customer stickiness and conversion rates. The company recognises the need to strengthen marketing efforts to effectively communicate the value of its products to potential customers.

4）Digitalisation and online presence:

Another identified gap was the lack of significant investment in digitisation. Analyses show that Company S has yet to tap the potential of online platforms such as Tic-Tac and WeChat. These platforms have a large user base and provide opportunities to connect with different audiences. Investing in digital marketing can help increase customer engagement and conversion rates.

4.3.5. Analysis of the identified problems

After analysing the market questionnaire and reviewing the company's information, there are many problems with S Company's marketing process, products, pricing, place, and promotion, as presented below.

1）Fewer product categories, slower iteration

Company S's educational products and services mainly include the following three categories: humanoid simulation service robots (customised products for corporate customers), programming block-building robots, and mini humanoid robots (Table 4.3).

Table4. 3- Product display list

Product Category	Product Launch Date	Product Features	Product Showcase
Humanoid Educational Service Robot	2018	Yanshee Tutor is a humanoid educational robot designed for use in secondary schools, vocational colleges and universities for AI education courses and labs.	
Building Blocks	2017	uKit Robotics is a building block class programmable educational robots, specifically developed for primary and secondary school students. uKit builds cross robotics and draft wood (educational) series of embedded artificial intelligence courses mainly include graphic programming and sensor electronic circuits related courses.	
mini humanoid robots	2019	The humanoid Alpha Mini Wukong (Education) is a small humanoid cybernetic robot mainly intended for use in the field of education and other areas such as children's companionship and wellness solutions.	

Source: Author

In reviewing the information of S Company, it was found that although there are many invention patent technologies, there are relatively few commercialised and mass-produced products, coupled with the high requirements of robotics technology iteration is very slow. Product innovation and iterative upgrading is imminent.

a. Customised humanoid robots for educational institutions: intelligent service robots for different stages of educational courses, mass-produced products yanshee, is a product of 2018, although it has also been iterated, but there is no obvious change in appearance and function.

b. Building blocks category: ukit building robot and building blocks, ukit is a building class Lego class products launched in 2017. Launched in 2017 after there is no current needle individual to consumer online sales of fewer products only 6 products.

c. Mini robot only 2 models, launched in 2019, after not updated new products.

Secondly, due to the fact that Company S did not have sufficient understanding and in-depth research on the current consumer demand in the early stage, the programming courses accompanying the robots were not abundant, and there was no unified online education APP, which could not satisfy the demand of existing customers

2) Prices are too high

Through the questionnaire survey of students' parents, it was concluded that 44% of respondents believe that the price of educational robots is too high. About 18% of respondents can accept the price of educational robots at less than 1,000 yuan, 40% of respondents can accept the price of educational robots at 1,000-2,000 yuan, and 28.88% of respondents can accept pricing at 1,001 - 5,000 yuan (Figure 9). S company's main product humanoid servo educational robots are priced as high as, mini humanoid robots are all priced above $3000 . The price is higher than consumer expectations, which is not conducive to product sales.

3) Most of the sales channels are from offline and lack of digital marketing

S company currently mainly adopts the offline marketing, marketing channels are very single. Online digital marketing only WeChat public number, the official website platform publicity, graphic, video, live and other ways are not used. S company did not make good use of the popular social platform for dissemination and sales, not to mention the establishment of the community and customer management system.

According to the company's information, in 2020, 2021 and 2022, the operating income of S Company was 740,226,000 yuan, 817,230,000 yuan and 935,760,000 yuan, respectively. Among them, educational intelligent robot products and solutions contribute to most of the revenue, and their revenues are 618,828,936 yuan, 461,735,450 yuan, 645,674,000 yuan, and the proportion of revenues is 83.6%, 56.5%, 69%, respectively.

S Company's main customers of educational robots are divided into three categories: government education departments (schools/vocational training institutes, etc.), the need for product customised special industry enterprises (higher cost, lower profit) and individual customer groups of dealers and directly-managed shops. Revenues from S's five largest

customers accounted for 66.5%, 52.2% and 64.7% of S's total revenues in the fiscal 2020, 2021 and 2022 reports, respectively, and revenues from the largest customer accounted for 37.8%, 21.4% and 27.7% of total revenues, respectively.

The concentration of customers is due to Company S's involvement in strategic decisions on government projects. This educational intelligent robotics business has helped Company S to develop a wealth of expertise and technology. Some of the large customers serve end customers that typically include multiple government educational organisations (e.g., schools).

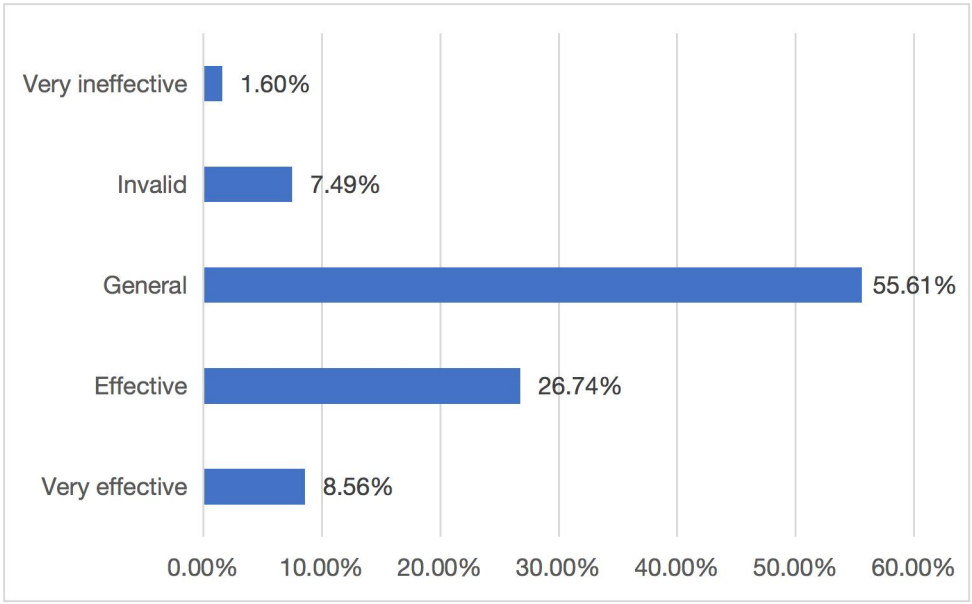
Company S previously tended to focus on the needs of its five largest institutional customers, through which it could reach many schools. While Company S intended to maintain stable relationships with its existing top five customers, it also had a tendency to diversify its product offerings and planned to expand its market share of individual customers. Company S's experts believed that there was a need for greater diversification of customer bases and channels beyond government sector educational institutions and traditional distributors, as well as a need for a sales management system for both the online sales channel and the direct customer platform.

To sum up, Company S has the problems of single sales channel and over-concentration of customers. There is an urgent need to establish a perfect digital marketing system to reduce the proportion of orders from customers of educational institutions and to increase the proportion of online and offline mixed dealers and direct customers, so as to achieve Company S's goal of increasing customer loyalty as well as sales and profits.

4) Few promotional activities and without a positive effect on sales

The results of the questionnaire show that 56% of the respondents think that the promotional activities of educational robots are just generally neither good nor bad, only 8.6% of the customers think that the promotional activities are very effective, and 26.74% of the customers are satisfied with the promotional activities. This proves that Company S's promotional activities did not leave a very deep impression on consumers and did not achieve a boost in sales. Accordingly, after an in-depth conversation with the marketing department experts and frontline staff, it can be concluded that Company S only participates in online shopping platforms such as Taobao's "Double Eleven" promotion, and that Company S seldom takes the initiative to promote its products, as their previous focus was mainly on serving educational institutions (schools) and offline distributors. Therefore, they spend less time/manpower/financial resources on promotions.

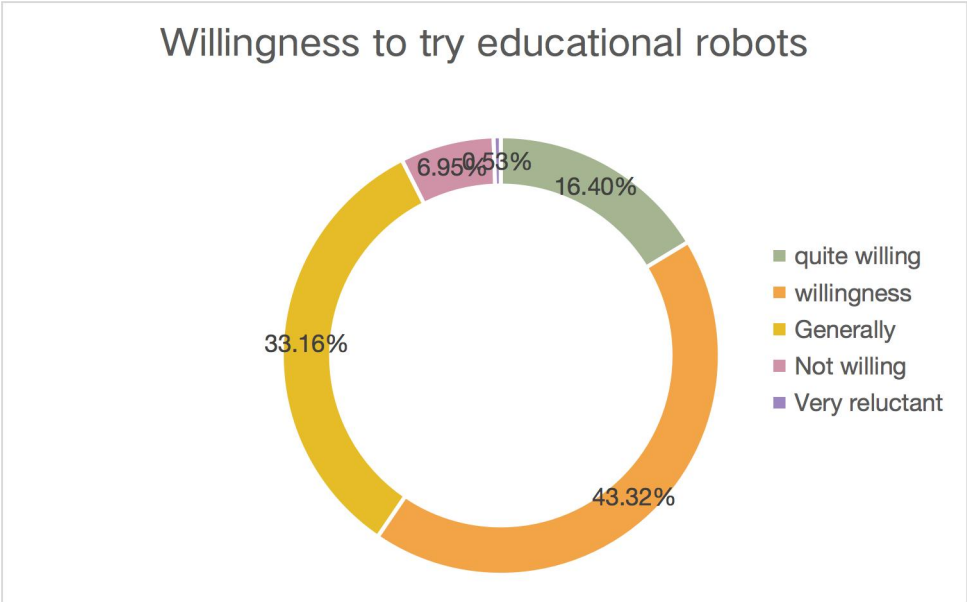
Figure 4.12 - Respondents' feedback on existing promotions



Source: Author

As shown in the figure below, 59% of parents surveyed were willing to try out educational robots, while 33% were neutral. So, it could be believed that there is still a very large potential market for the C-suite individual customer market as long as effective promotional campaigns are carried out.

Figure 4.13- Customers' willingness to try educational robots



Source: Author

4.4. SWOT Analysis

Strenghts

- Strong R&D capabilities: Company S possesses robust research and development capabilities, which contribute to innovation and product development.
- Wide range and quality of product offerings: Company S offers a wide range of high-quality products, providing customers with diverse options.
- Strong relationships with customers and end users: The company has established strong connections with its customers and end users, fostering loyalty and trust.
- Marketing and sales channels: Company S has effective marketing and sales channels in place to reach its target market and promote its products.
- Brand awareness: Company S has a high level of brand recognition, which enhances its reputation and competitive position.
- After-sales service: The company provides satisfactory after-sales service, contributing to customer satisfaction and loyalty.

Weaknesses

- Concentration in intelligent educational robots: Company S relies heavily on intelligent educational robots, which account for 60% of its business. This concentration poses a risk if demand shifts or competition intensifies in this segment.
- Fewer product categories, slower iteration
- Prices are too high
- Most of the sales channels are from offline and lack of digital marketing
- Few promotional activities and without a positive effect on sales
- Financial position: The company has experienced significant financial losses, totaling $2.4 billion over three consecutive years. This weak financial position hinders its growth and stability.
- Early-stage development of certain robot categories: Intelligent logistics robots and intelligent elderly robots are still in the primary development stage and lack brand influence, limiting their market potential.
- Cost structure problems: Company S faces cost structure issues, with sales costs accounting for 30% and R&D costs accounting for 43% of overall costs. This imbalance may impact profitability and competitiveness.

Opportunities

- Technological advancements: The robotics industry continues to witness technological breakthroughs, providing opportunities for Company S to enhance its product offerings and gain a competitive edge.
- Transformation of the digital economy: Robots play a significant role in reshaping the digital economy, enabling new ways of production and living. Company S can capitalize on this trend by developing innovative robotic solutions.
- Human-machine interaction and collaboration: Robots are facilitating improved human-machine interaction and collaboration, opening up new avenues for market growth and product development.
- Technological innovation and industrial upgrading: Robotics is increasingly driving technological innovation and industrial upgrading, presenting opportunities for Company S to contribute to these advancements.
- National competitiveness: The development of the robotics industry has become a vital indicator of a country's technological innovation competitiveness. Company S can position itself as a key player in advancing its country's competitiveness in this field

- Purchase power of the Chinese population
- Good economic situation of China

Threats

- Intense competition: The robotics industry faces fierce competition from well-known technology companies such as Boston, Tesla, Google, Huawei, Xiaomi, and others. The entry of cross-industry tech companies, including OpenAI, further intensifies the competition.
- Market saturation: As the robotics market matures, there is a risk of saturation, making it harder for Company S to differentiate its products and maintain market share.
- Technological advancements by competitors: Competitors' rapid advancements in robotics technology may pose a threat to Company S's market position if it fails to keep pace with or surpass their innovations.
- Regulatory challenges: The robotics industry is subject to evolving regulations and standards. Complying with these regulations and adapting to changes can present challenges for Company S.

4.5. Marketing Plan Objectives

In order to develop the marketing objectives of Company S, a function formula in Excel and the Delphi expert scoring method were used to forecast Company S's sales for the years 2023-2025, in order to help company S to be able to formulate reasonable marketing objectives and the corresponding marketing strategies and safeguards.

Firstly, using the FORECAST function in the Excel table, the sales data of 2023-2025 are forecasted using the sales data of 2020-2022, and the function formula is as follows:

$$a = \bar{Y} - b\bar{X}$$

$$b = \frac{n\sum xy - (\sum x)(\sum y)}{n\sum x^2 - (\sum x)^2}$$

As can be seen in Table 4.4, the Forecast Results for sales are RMB 1,026,606,000 in 2023, RMB 1,124,373,000 in 2024, and RMB 1,222,140,000 in 2025.

Table 4.4 - Excel's Forecast function forecasts tables

Year	Sales (thousands of RMB)
2020	740,226
2021	817,230
2022	935,760
2023	1,026,606
2024	1,124,373
2025	1,222,140

Source: Author

Secondly, using the Delphi method, nine experts who are familiar with the macro policies, industry dynamics and internal sales of enterprise S were used to forecast the sales of enterprise S for the years 2024 and 2025. The following table4.5 show their identities and the reasons why they were invited to participate in the interviews.

Table 4.5 - Information for internal experts

No.	Position	Reason for being invited
1	General Manager of Enterprise	Understand macro policies and industry dynamics
2	General Manager of Sales Department	Understand the company's overall sales dynamics
3	Deputy General Manager	Understand the overall situation within the enterprise
4	General Manager of Product Department	Understand the current situation of product development
5	General Manager of Operation Department	Understand the specific situation of each region
6	General Manager of Production Department	Understand the production situation of the enterprise
7	General Manager of Inventory Department	Understand the actual situation of the enterprise's inventory
8	Finance Director	rstand the financial situation of the enterprise

Source: Author

After three feedbacks, the result of sales forecast in 2024 is shown in Table 6. The expert number in this table is a random number, and the feedback table of sales forecast in 2023-2025 is shown in Appendix C.

Table 4.6- 8 Experts' Forecasts of Sales in 2024

	First forecast			Second forecast			Third forecast		
No.	lowest	most likely	highest	lowest	most likely	highest	lowest	most likely	highest
1	11006	11820	12050	11550	11850	12050	11206	11680	12050
2	10595	11830	12030	1060	1980	12060	11060	11870	12060
3	11060	11520	12010	1350	11750	12550	11090	11990	12030
4	11030	11602	12056	11060	11800	12130	11050	11490	12560
5	10089	11070	12008	11080	11950	12280	10836	11260	12680
6	10070	11800	12009	10860	12000	12570	11080	11690	12090
7	10025	11980	12002	10890	12030	12230	11090	11880	12580
8	10850	11090	12805	10990	11840	12067	11260	11980	12780
mean	10590.625	11589	12121.25	11105	11900	12242.125	11084	11730	12353.75

Source: Author

Due to the large skewness of the data distribution, the data obtained from the third interview were used to calculate with the MEDIAN function in Excel; the median of the lowest sales was RMB110,850 thousand, the most likely sales were RMB117,800 thousand, and the highest sales were RMB123,250 thousand. Then calculate the minimum value, the most probable value, and the maximum sales volume with probability weighted average values of 0.3, 0.5, and 0.2, respectively, and predict that the sales volume of S company in 2024 will be RMB116,805 thousand. The calculation steps are as follows:

0.3*110850 + 0.5* 117800+0.2*123250=116805

Using the Delphi method to repeat the above steps, it is predicted that the sales revenue of Company S in 2023 will be RMB 1,066,980 thousand, and the sales revenue in 2025 will be RMB 1,261,800 thousand. For the summary statistics of the above two methods, the author once again conducted in-depth communication with 8 experts from S company and decided; on this basis, the calculation results of the linear programming method and the Delphi method are respectively calculated according to the probability weighted average of 0.6 and 0.4, and the calculation The process is as follows:

0.6*1124373+ 0.4*116805=RMB1141843.8 thousand

Finally, the final marketing target is deduced at RMB 1,141,843.8 thousand, with a growth rate of 10%.

Table 4.7- Finalised sales objectives

Year	linear regression (math.)	Delphi method of interviewing	Final target	Growth rate
2023	1026606	1066980	1042755.6	11%
2024	1124373	1168050	1141843.8	10%
2025	1222140	1261800	1238004	8%

Source: Author

4.6. Segmentation, Targeting and Positioning

Market Segmentation (Final consumers)

1. Age-Based Segmentation:
    - Preschool Explorers: 21% of parents believe preschool children can benefit from educational robots, showing early interest. Position products as interactive tools to nurture curiosity and foundational skills playfully, while introducing STEAM concepts subtly.
    - Primary Enrichers: 27% of parents find primary school an ideal starting point. Emphasize how educational robots enhance core subjects, aiding concept comprehension, and extending classroom learning, while integrating STEAM elements.
    - Middle School Innovators:The majority (30%) advocate middle school for engagement. Promote educational robots as platforms fostering critical thinking, problem-solving, and creativity with explicit STEAM integration for advanced learning.

2. Consumer Demand Segmentation
    - Creative Thinkers' Guardians: 34% of consumers seek creativity enhancement. Showcase how educational robots encourage exploration, experimentation, and imaginative problem-solving with a strong emphasis on STEAM principles.

- Learning Support Champions: 33% of parents opt for tutoring. Position educational robots as personalized learning tools, addressing individual learning challenges, and providing tailored STEAM-infused support.
- Competition-Driven Mentors:21% aspire for competition participation. Position educational robots as advanced training tools, ensuring students are well-prepared for contests by integrating STEAM skills into their practice.

3. Regional Division Segmentation
    - Urban Innovators (First-Tier Cities): These areas are technology-driven. Emphasize educational robots' cutting-edge features and adaptability, aligning with urban lifestyles, advanced learning expectations, and integrating STEAM concepts.
    - Progressive Achievers (Second-Tier Cities): Educational support is a priority. Showcase how educational robots bridge learning gaps, providing comprehensive assistance, boosting academic performance, and weaving in STEAM learning opportunities.
    - Exploratory Learners (Third-Tier Cities): Hands-on learning is key. Highlight educational robots' exploratory nature, encouraging curiosity-driven learning that complements traditional education, enriched with STEAM principles.
    - Practical Knowledge Seekers (Fourth-Tier and Beyond): Practical skills are essential. Position educational robots as tools for acquiring practical knowledge, meeting the aspirations of value-driven consumers, and integrating STEAM aspects.

Targeting

From the market segmentation, it can be seen that Company S should focus on primary and junior high school students customer groups, as there is more room for market growth in this age group. The company can appropriately increase its investment in research and teacher resources. According to the diversification of consumer needs, whether it is for the improvement of the children's own ability, or for the purpose of reducing the pressure of study and cultivating physical and mental health, they can be the target customer groups for the expansion of the company. For families with different incomes, Company S can target customers in first- and second-tier cities, who are relatively insensitive to price, but attach importance to the quality of education and the overall enhancement of children's quality and ability. Therefore, Company S's robotics education environment and facilities, high-quality

teachers, and comprehensive curriculum system are more suitable for economically developed regions.

Positioning

An intelligent robot that accompanies junior high school students and elementary school students to learn and play

4.7. Marketing-Mix

4.7.1. Product

product of Company S is the buildable LEGO product, which can be built in a variety of shapes from a single product in this product range, allowing for continuous innovation in product styling. Therefore, a combination of standardised product strategy and customised product strategy is used, backed by strategic alliances and strong support courses.
The following actions are proposed:

a) Strengthening the unified product strategy: driving innovation and user-centric synergies
   The adoption of a standardised product strategy is a strategic imperative for Company S, underpinned by a strong commitment to continuous improvement, technology convergence and collaborative evolution. This strategy embodies a disciplined approach that combines innovation, user-centricity and ecosystem enablement to ensure that the educational robotics products of the company consistently exceed industry benchmarks.

b) Continuous evolution through functional improvement
   At the heart of the strategy of the company is an unwavering commitment to continuous improvement. The company has strengthened the foundation of its brand by systematically improving the functionality of its educational robotics products. This iterative process is deeply rooted in flexibility and ensures that the products remain at the forefront of innovation. In each cycle, the company carefully introduces new features, enhances existing capabilities and refines functionality. Ultimately, its product lineup is a testament to the commitment of the company to delivering cutting-edge tools that evolve with the dynamic needs of the users.

c) Building an AI- and VR-enabled management platform: technology convergence

The strategic convergence of Artificial Intelligence and Virtual Reality technologies will represent a quantum leap forward. Partnerships with globally recognized software development platforms have enabled Company S to provide intuitive AI-driven applications for each of its educational robots. The convergence of Artificial Intelligence and Virtual Reality technologies not only drives automation, but also helps push S's educational robots into the realm of timeless iteration and augmentation. The harmonious symbiosis of these technologies provides robots with an environment that organically evolves based on user interaction. This strategic orientation transcends traditional product iterations, consolidates the ecological advantages of the application and reinforces strong barriers to entry.

d) Building a data sharing hub: fostering collaborative data sharing relationships
Establish a dynamic data sharing hub that serves as a collaborative melting pot for knowledge exchange. In this ecosystem, users are encouraged to contribute the experiential knowledge of their robots across personal boundaries. The knowledge accumulated by a robot is seamlessly shared, creating a collective learning environment. The progress of each robot drives the progress of the whole system, so the benefits of this endeavour are obvious. This collaborative synergy is consistent with the fundamental principles of user-driven evolution and collective intelligence dissemination.

Additionally, the following customised strategies for customers with special needs should be implemented:

a) User-centred customisation: provide customisation options to meet individual preferences. Offers modular add-ons and design elements that enable customers to customise the robot to their specific interests and educational needs.
b) Personality-based products: develop specialised robot variants based on users' interests, hobbies and learning styles. Tailor-made robots for STEAM enthusiasts, artists, aspiring engineers, and more.
c) IP co-branding and customisation: Disney, Sony and other well-known brands have established strategic partnerships to launch limited edition customised models decorated with popular cartoon characters. These collaborations, such as robots featuring Iron Man and Barbie, inject passion and personalised appeal into the educational robotics product range.

Finally, the following actions should be taken to improve the curriculum:

a) Integrated Learning Ecosystem: Complement hardware improvement with synchronised software and services to enhance the educational experience. Offers free or low-cost online coding and programming courses to meet the needs of beginners and advanced learners.
b) Classroom Management Platform: Develops an integrated classroom curriculum management platform for educators to ensure seamless coordination and efficient interaction between students, teachers and educational robots.
c) Offline teaching services: increase customer loyalty and satisfaction by organising regular offline teaching sessions. Provide hands-on workshops, interactive seminars and learning activities to deepen user engagement and foster a sense of community.
d) High-quality cooperation: Establish partnerships with renowned national and international universities to provide fee-based courses. Meet the needs of a wide range of consumers, from amateurs to aspiring professionals, through courses curated by academic experts.

On conclusion, by combining standardised and customised approaches and enriching the user experience with strategic alliances and comprehensive complementary curricula, Company S is poised to appeal to a broader audience while ensuring continued engagement, loyalty and educational impact.

4.7.2. Price

The pricing policy should be as follow:

- Miniature humanoid robots: Utilising cost-plus pricing and bundled sales.
- Miniature humanoid robots, which are characterised by complex designs and a wide range of functions, were recommended to use a combination of cost-plus pricing and bundled sales. This approach takes into account the higher research and development costs associated with making innovative and unique cutting-edge robotic products.
- Cost-Plus Pricing: Understanding the comprehensive cost structure of manufacturing a miniature humanoid robot is critical to ensuring profitability, and Company S sets its prices strategically by adding a predetermined profit margin to the cost of production. This allows the company to cover R&D expenses, production costs, operating expenses,

and achieve desired levels of profitability while maintaining transparency and consistency in pricing.

- Bundled Sales Approach: Recognising the potential for micro humanoid robots to deliver a richer user experience when combined with a STEAM education curriculum, Company S has adopted a bundled sales approach. By packaging the robot with add-ons at an attractive price, the company create value for its customers while stimulating higher purchase volumes. This strategy not only improves customer satisfaction, but also maximises revenue generation by exploiting the inherent synergies between the robot and its bundled components.
- Penetration Pricing at Block Building Robots: It is suggested that Company S adopts a compelling penetration pricing approach for its block-building robots. This involves strategically targeting a broader audience by intentionally setting an initial price point that is lower than competitors' products. By attracting attention through affordable pricing, Company S will quickly establish a strong market position. This approach not only appeals to price-sensitive consumers, but also makes the building block robots an accessible and attractive option for potential buyers.

4.7.3. Place

Establishing some improvements on channels is key to ensure that Company S's educational robots effectively reach their target audience, driving engagement, awareness and market penetration. Using a multi-pronged approach, a comprehensive channel strategy is proposed for Company S that leveraged traditional strengths, while also venturing into the digital space to increase awareness and solidify brand resonance.

a) Layering Traditional Distributors: Creating Precision

The marketing channel had been dominated by G-side government education departments and B-side distribution partners, supplemented by online and offline distributors. Through this savvy layering approach, Company S has leveraged the unique capabilities of each channel to expand its reach and impact.

The G-side government education sector remains the key channel to educational institutions, and Company S carefully nurtures these relationships to position its products as cutting-edge tools that will catalyse the learning environment of the future. Meanwhile,

B-side distribution partners become channels to the wider market, acting as brand ambassadors in their respective areas. This layered model creates a harmonious synergy that resonates with the different channels, working together to maximise reach and brand penetration.

b) Create an online sales account to build an online sales network

The contemporary digital landscape possesses the power to begin a transformational journey by establishing powerful online digital marketing channels. The dynamic Tiktok live-streaming platform, the engaging WeChat video number, and the experiential Xiaohongshu sharing platform have all become powerful venues for brand communication and engagement. These virtual realms provide channels for Company S to engage directly with digital audiences and provide a mapping of the dynamism of the educational robot itself.

Within these digital realms, Company S can demonstrate the essence of its educational robots through engaging storytelling, live interactions and immersive experiences. This strategy goes beyond transactional engagement to infuse the digital realm with a tactile sense of exploration and learning. By seamlessly integrating its products into these digital ecosystems, it has helped Company S leave an indelible mark by creating virtual friendships with its customers.

4.7.4. Promotion

Guided by the insights gained directly from the questionnaire, the promotional strategy was carefully fine-tuned to closely align it with the unique preferences and desires of the customer, thus creating an unbreakable bond of engagement and satisfaction.

As such, the following promotion actions are proposed:

a) Livestream marketing

In recent years, with the expansion of the scale of consumption and the continuous upgrading of the consumption mode, the live broadcast of e-commerce has shown a rapid development trend. The "live broadcast + e-commerce" model has become a major wind mouth in the e-commerce industry. According to the 50th Statistical Report on China's Internet Development, as of June 2022, China's e-commerce live broadcast user scale was

469 million, accounting for 44.6% of the overall number of Internet users. The penetration rate grew rapidly from 0.27% in 2017 to 17.97% in 2021.

b) Free course giveaways

32.62% of respondents want to be able to get course rewards during promotions, incorporating this idea keenly into promotions. First of all, build a unified course management platform, where customers' member accounts can be common and get points and rewards. Customers are not only offered free courses when purchasing, but also given free courses after completing online learning tasks, and giving away free courses can not only improve customer satisfaction but also increase the amount of active customers.

c) Existing customer referral incentive activities

Survey data show that customer reviews and friend recommendations will have a significant impact on customers, customers to the company's products and brands as the main body of the creation of content and referrals to customers can improve the company's products word-of-mouth marketing can also be effective in increasing the number of new customers. In this programme, customers are rewarded with either a cash bonus or a course for referring new customers. The more existing customers refer new customers, the greater the reward. This well-designed programme offers attractive incentives to both existing and potential new customers of Company S. The programme can be used to increase the number of new customers and to increase the number of new customers.

4.8. Schedule

Company S needs to develop a schedule to implement the proposed action. It is very important to clarify the work schedule and responsibilities of each departmental work arrangements, and to successfully carry out effective marketing actions. As such, the specific timetable reference table is as follows:

Table 4.8- Schedule

Time	Activities
January	Building an AI- and VR-enabled management platform Building a data sharing hub Create official sales accounts, live sales accounts on WeChat, TIktok, Xiaohongshu
February	Classroom Management Platform Integrated Learning Ecosystem Layering Traditional Distributors: Creating Precision
March	University cooperation: such as establishing a cooperative relationship with East China University of Technology Free programming courses through WeChat, Tiktok, and Xiaohongshu live video
April	Free course giveaways Livestream marketing
May	IP co-branding and customisation: Disney, Sony Existing customer referral incentive activities
June	Existing customer referral incentive activities
July	Free course giveaways
August	Distribute coupons on online sales channels
September	IP co-branding and customisation: Disney, Sony
October	Livestream marketing
November	Free course giveaways
December	Evaluate the effectiveness of marketing programs

Source: Author

4.9. Budget

The cost to be spent with the implementation of this marketing plan is estimated on RMB6.6 million, with a breakdown of the specific items as shown below.

Table 4.9-Budget

Activities	Budget
Create official sales accounts, live sales accounts on WeChat, TIktok, Xiaohongshu	10,000
Building a data sharing hub	60,000
Classroom Management Platform	20,000
Integrated Learning Ecosystem	50,000
Layering Traditional Distributors: Creating Precision	80,000
University cooperation: such as establishing a cooperative relationship with East China University of Technology	500,000
Free programming courses through WeChat, Tiktok, and Xiaohongshu live video	0
Free course giveaways	0
Livestream marketing	600,000
Existing customer referral incentive activities	800,000
Distribute coupons on online sales channels	300,000
IP co-branding and customisation: Disney, Sony	2,000,000
Total	4,420,000

Source: Author

4.10. Marketing Control and assessment

Ensuring the Success of S Corporation's Educational Robotics Marketing Implementation: Essential Guarantees

The realization of a robust and effective marketing implementation for S Corporation's Educational Robotics in 2024 necessitates a well-structured framework backed by key guarantees. These guarantees stand as pillars upon which the edifice of success is built, harmoniously combining strategic foresight, technological innovation, human resources empowerment, and financial sustenance.

Finally, the following KPIs are proposed to be measure the defined objectives of this plan:

Table 4.10-Control and Assessment

Objectives	KPI
Increase the company's brand influence and awareness	The number of tiktok and WeChat video number fan followers increased by 100,000 per month, and the annual number of followers exceeded 1.2 million
	Monthly average customer activity is over 200,000 visits
	Increase in keyword searches on domestic search engines by 5% per month
Increase loyalty and satisfaction of existing customers	5% increase in new repeat customer course purchases
	5% monthly increase in the number of new referrals from existing customers
Increase in operating income	10 % increase in nutritional income
Attracting new customers	10% growth in new customers

Source: Author

5. Conclusions

Nowadays, service robots have entered the intelligent era, in this thesis, the main business of S company is educational robots, which is also an exceptionally fierce market, this thesis sets up a marketing plan for S company in 2024, which aims to increase brand awareness and influence, attract new customers, increase the loyalty of old customers and increase business income.

Firstly, this project mainly focuses on the collection and organisation of the required information and documents, including literature review, expert interviews, questionnaires and so on.

Secondly, on the theoretical basis of marketing environment analysis, PESTE analysis was used, from the gradual improvement of the policy environment, China's economic upward trend is obvious, the social and cultural level of the people's acceptance is high, the aging of the population is strengthened, and the technological revolution is updated and iterated quickly, and so on. In the internal environment analysis, the basic overview and marketing status of Company S, customer preference and problems in marketing are studied respectively, and then the opportunities and threats, disadvantages and advantages of Company S are analysed by SWO.

Thirdly, based on the above analyses and then combined with the results of the questionnaire survey data. By positioning its market, this thesis develops the marketing plan of Company S for 2024 and creates Create official sales accounts, live sales accounts on WeChat, TIktok, Xiaohongshu; Building a data sharing hub;Classroom Management Platform; Integrated Learning Ecosystem; Layering Traditional Distributors: Creating Precision; University cooperation. such as establishing a cooperative relationship with East China University of Technology; Free programming courses through WeChat, Tiktok, and Xiaohongshu live video; Free course giveaways; Livestream marketing; Existing customer referral incentive activities; Distribute coupons on online sales channels; IP co-branding and customisation: Disney, Sony. budget RMB4,420,000.

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Appendices

Appendix A – Educational Robotics Questionnaire

Question 1 Your gender: [Single Choice]

Options

a) Male

b women

Question 2 Age [Single-Choice]

Options

a) 18-24

b) 25-34

c) 35-44

e) 55 years and over

Question 3 Educational background [Single choice]

Options

a)Lower secondary

b) High School

c)Undergraduate

d)Master's Degree

e)Doctoral students

Question 4 Occupation [Multiple choice]

Options

a)Students

b)Employment (full-time)

c) Employment (part-time)

(d) Self-employed persons

(e) Retirement

Question 5 Do you think that educational robots are [Single choice question]

Option

a)Smart toys for children

b)Lego-type building toys

c) Intelligent aids for education

d) General scientific and technical tools

e) Infant Smart Companion Toys

Question 6 Willingness to try out educational robots [Single choice]

Options

a)Very willing

b)Willingness

c)General

d)Unwillingness

e) Very reluctant

Question 7 At what age do you think it is best to start using educational robots? [Single choice question]

Options

a) Kindergarteners

(b) Pupils

c) Junior students

d) High school students

e) All applicable

Question 8 How satisfied are you with the current educational robots? [Single choice question]

Options

a) Very satisfied.

b) Satisfaction

c) General

d) Unsatisfactory

e) Very dissatisfied

Question 9 Which factors are most important to you when considering the purchase of a service robot? [Single choice question]

Options

a) Price and affordability

b) Reliability and performance

c) Ease of use and user-friendly interface

d) Brand reputation and credibility

e) After-sales such as (warranty and customer support)

Question 10 What is your purpose for choosing an educational robot? [Single choice question]

Options

a) Enhancing children's creativity

b) Setting the stage for the discipline

c) Participation in scientific and technological categories with medals

d) To gain points for further education

e) Other objectives

Question 11 How often do you think it is most appropriate to use an educational robot? [Single-choice question]

Options

a) Daily

b) Weekly

c) Monthly

d rarely

e) Unsuitable

Question 12 What features of educational robots do you find most appealing? [Single choice question]

Options

a)Walking upright

b) AI

c)Coding and programming

d)Social interaction

e) Other

Question 13 How would you rate the price of educational robots on the market today? [Single choice question]

Options

a)Very expensive

b)Expensive

c) Medium

d) Cheap

e) Very cheap

Question 14 What is your acceptable price range for an educational robot (in RMB)? [Single choice question]

Options

a)0-1000

b)1,000 - 2,000

c) 2,001 - 5,000

d) 5,001 - 10,000

e) 10,001 and above

Question 15 Which promotions do you find most appealing to you? [Single choice question]

Options

a)Discount on purchase of educational robots

b) Free education course with the purchase of a robot

c) Existing customers are rewarded for introducing new customers

d) Free or low-cost robot upgrades

e) Participate in robotics exhibitions and competitions after completing the course

Question 16 How did you find out about Educational Robotics? [Single choice question]

Options

a) Online advertising

b) Social media

c) Word-of-mouth, recommendations from friends

d) Educational institutions

e) Other (please specify): _____

Number of valid entries for this question

Question 17 What do you think about the effectiveness of promotional activities of educational robotics brands nowadays? [Single choice question]

Options

a) Very effective

b) Effective

c) General

d) Invalid

e) Very ineffective

Number of valid entries for this question

Question 18 How important are other customer reviews and ratings in your decision-making process when considering the purchase of an educational robot? [Multiple choice question]

Options

a)Very important

b) Somewhat important

c) Doesn't matter

d) Less important

e) Not important at all

Question 19 Which promotional channels do you think were most influential in your decision to purchase an educational robot? Please select all channels that apply [Single Choice]

Options

a) Online advertising

b) Social media posts/testimonials

c) Comments and recommendations

d) Demonstration or activity

e) Recommendations from teachers or educators

Appendix B – Results of the survey

Question 1 Your gender: [Single Choice]

Options	Subtotal	Ratio
a) Male	79	42.25 %
b women	108	57.75 %
Number of valid entries for this question		187

Question 2 Age [Single-Choice]

Options	Subtotal	Ratio
a) 18-24	25	13.37 %
b) 25-34	90	48.13 %
c) 35-44	52	27.81 %
d) 45-54	12	6.42 %
e) 55 years and over	8	4.28 %
Number of valid entries for this question		187

Question 3 Educational background [Single choice]

Options	Subtotal	Ratio
a) Lower secondary	5	2.67 %
b) High School	22	11.76 %
c) Undergraduate	121	64.71 %
d) Master's Degree	35	18.72 %
e) Doctoral students	4	2.14 %
Number of valid entries for this question		187

Question 4 Occupation [Multiple choice]

Options	Subtotal	Ratio
a) Students	14	7.49 %
b) Employment (full-time)	124	66.31 %
c) Employment (part-time)	26	13.9 %
(d) Self-employed persons	17	9.09 %

(e) Retirement	6	3.21 %
Number of valid entries for this question	187	

Question 5 Do you think that educational robots are [Single choice question]

Option	Subtotal	Proportion
a) Smart toys for children	30	16.04 %
b) Lego-type building toys	41	21.93 %
c) Intelligent aids for education	84	44.92 %
d) General scientific and technical tools	11	5.88 %
(e) Infant Smart Companion Toys	21	11.23 %
Number of valid entries for this question	187	

Question 6 Willingness to try out educational robots [Single choice]

Options	Subtotal	Ratio
a) Very willing	30 %	16.04 %
(b) Willingness	81	43.32 %
c) General	62	33.16 %
d) Unwillingness	13	6.95 %
e) Very reluctant	1	0.53 %
Number of valid entries for this question	187	

Question 7 At what age do you think it is best to start using educational robots? [Single choice question]

Options	Subtotal	Ratio
a) Kindergarteners	40	21.39 %
(b) Pupils	52	27.81 %
c) Junior students	55	29.41 %
d) High school students	32	17.11 %
e) All applicable	8	4.28 %

Number of valid entries for this question 187

Question 8 How satisfied are you with the current educational robots? [Single choice question]

Options	Subtotal	Ratio
a) Very satisfied.	17	9.09 %
b) Satisfaction	50	26.74 %
c) General	106	56.68 %
d) Unsatisfactory	12	6.42 %
e) Very dissatisfied	2	1.07 %

Number of valid entries for this question 187

Question 9 Which factors are most important to you when considering the purchase of a service robot? [Single choice question]

Options	Subtotal	Ratio
a) Price and affordability	57	30.48 %
b) Reliability and performance	64	34.22 %
c) Ease of use and user-friendly interface	45	24.06 %
d) Brand reputation and credibility	15	8.02 %
e) After-sales such as (warranty and customer support)	6	3.21 %

Number of valid entries for this question 187

Question 10 What is your purpose for choosing an educational robot? [Single choice question]

Options	Subtotal	Ratio
a) Enhancing children's creativity	63	33.69 %

b) Setting the stage for the discipline 62
33.16 %

c) Participation in scientific and technological categories with medals 40 21.39 %

d) To gain points for further education 13
6.95 %

(e) Other objectives 9
4.81 %

Number of valid entries for this question 187

Question 11 How often do you think it is most appropriate to use an educational robot? [Single-choice question]

Options	Subtotal	Ratio
a) Daily	43	22.99 %
b) Weekly	90	48.13 %
c) Monthly	28	14.97 %
d rarely	24	12.83 %
e) Unsuitable	2	1.07 %
Number of valid entries for this question		187

Question 12 What features of educational robots do you find most appealing? [Single choice question]

Options	Subtotal	Ratio
a) Walking upright	52	27.81 %
(b) AI	59	31.55 %
c) Coding and programming	38	20.32 %
d) Social interaction	32	17.11 %
e) Other	6	3.21 %
Number of valid entries for this question		187

Question 13 How would you rate the price of educational robots on the market today? [Single choice question]

Options	Subtotal	Ratio
a) Very expensive	14	7.49 %
(b) Expensive	68	36.36 %
(c) Medium	49	26.2 %
d) Cheap	44	23.53 %
e) Very cheap	12	6.42 %
Number of valid entries for this question		187

Question 14 What is your acceptable price range for an educational robot (in RMB)? [Single choice question]

Options	Subtotal	Ratio
(a) 0-1000	33	17.65 %
b) 1,000 - 2,000	75	40.11 %
c) 2,001 - 5,000	54	28.88 %
d) 5,001 - 10,000	20	10.7 %
e) 10,001 and above	5	2.67 %
Number of valid entries for this question		187

Question 15 Which promotions do you find most appealing to you? [Single choice question]

Options	Subtotal	Ratio
a) Discount on purchase of educational robots	53	28.34 %
b) Free education course with the purchase of a robot	61	32.62 %
c) Existing customers are rewarded for introducing new customers	38	20.32 %
d) Free or low-cost robot upgrades	27	14.44 %

e) Participate in robotics exhibitions and competitions after completing the course

8	
4.28 %	
Number of valid entries for this question	187

Question 16 How did you find out about Educational Robotics? [Single choice question]

Options	Subtotal	Ratio
a) Online advertising	41	21.93 %
b) Social media	74	39.57 %
c) Word-of-mouth, recommendations from friends	46	24.6 %
(d) Educational institutions	19	10.16 %
e) Other (please specify): _____	7	3.74 %
Number of valid entries for this question		187

Question 17 What do you think about the effectiveness of promotional activities of educational robotics brands nowadays? [Single choice question]

Options	Subtotal	Ratio
a) Very effective	16	8.56 %
b) Effective	50	26.74 %
(c) General	104	55.61 %
d) Invalid	14	7.49 %
e) Very ineffective	3	1.6 %
Number of valid entries for this question		187

Question 18 How important are other customer reviews and ratings in your decision-making process when considering the purchase of an educational robot? [Multiple choice question]

Options	Subtotal	Ratio
a) Very important	60	32.09 %
b) Somewhat important	79	42.25 %
c) Doesn't matter	38	20.32 %
d) Less important	8	4.28 %

e) Not important at all	2	1.07 %
Number of valid entries for this question	187	

Question 19 Which promotional channels do you think were most influential in your decision to purchase an educational robot? Please select all channels that apply [Single Choice]

Options	Subtotal	Ratio
a) Online advertising	26	13.9 %
b) Social media posts/testimonials	60	32.09 %
c) Comments and recommendations	65	34.76 %
d) Demonstration or activity	23	12.3 %
e) Recommendations from teachers or educators	13	6.95 %
Number of valid entries for this question	187	

Appendix C – Expert sales forecasts for company S

8 Experts' Forecasts of Sales in 2023

	1st forecast			2nd forecast			3rd forecast		
No.	minimum	most likely	maximum	minimum	most likely	maximum	minimum	most likely	maximum
1	10006	10660	12050	10050	10680	11850	10006	10280	12050
2	10005	10560	11650	9880	10450	11320	9806	10880	11060
3	10004	10660	11080	10010	10320	11050	10280	11080	11330
4	9501	10660	11050	9840	10680	11150	10050	10500	12560
5	10006	10660	11050	10010	10820	11560	10070	10600	11680
6	10006	10860	12010	10020	10670	11870	9950	10900	12090
7	9906	10660	11050	9600	10050	11080	9980	10580	12080
8	10009	11060	11050	9850	11080	12150	10006	10550	11080

8 Experts' Forecasts of Sales in 2025

	1st forecast			2nd forecast			3rd forecast		
No.	minimum	most likely	maximum	minimum	most likely	maximum	minimum	most likely	maximum
1	12080	12750	13500	12050	12860	13800	12060	12500	13800
2	11960	12250	14000	12150	13050	13500	12120	13800	13200
3	12050	13080	13800	12080	12650	13800	12330	12600	13500
4	12080	12550	13600	12010	12750	13500	11860	12250	13800
5	12250	12680	13500	12060	12650	13400	12060	12800	14000
6	12060	13050	14000	12050	12850	14000	11960	13000	13300
7	12040	12750	13320	12100	12600	13500	12060	12580	13900
8	12100	13050	14000	12000	13000	14000	12160	12600	13500