

Analysis of the Pet Companion Robot Market

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Abstract: Pet robot is a kind of intelligent device with artificial intelligence and mechanical technology. These robots provide a solution to the challenges of balancing work responsibilities and caring for pets, while also enhancing the interaction between owners and pets to ensure the health of pets. The pet robot market is a new technology market, through the in-depth study of the pet robot market, it can fill the research gap in this field and provide new research opportunities for the academic circle. Through the research methods of questionnaire survey and literature review, we compared the global market strategies of large, small and medium-sized technology pet robot companies, combined with the quantitative literature review and questionnaire quantitative analysis, and drew the conclusion that the pet robot market has great potential, but the entry barrier is high, and the differentiation strategy is needed.

Keywords: Artificial intelligence, Pet robot, Potential risk.

1. Introduction

In modern society, work pressure is increasing, and time becomes precious and limited. To solve this problem, there is a lot of research on AI, but there is little research on pet robots. We use survey questionnaires and literature reviews to collect information to address issues such as incomplete variables and the inability to address emerging social phenomena in previous research papers. Our research results indicate that the pet robot market has great potential, but there are also high risks, and it may deepen our understanding of the pet care robot market and provide key market information.

In an era of rapid technological progress and economic development, pet companion robots have an open market in the world. This study aims to examine the opportunities and risks of future market development for pet robots.

Our research mainly uses first-hand data from questionnaire surveys and second-hand data from literature reviews to comprehensively evaluate the development potential of the pet robot market.

The questionnaire survey is mainly conducted by researchers designing objective questions and then sending them to platforms such as the internet for voluntary filling. To avoid large-scale selection bias, we also randomly selected a total of 100 pet families from various cities in China to fill out the survey, expanding the sample size and conducting follow-up visits to the follow-up subjects.

We mainly used more than 30 scholars' literature from 2010 to 2023 for second-hand data. At the same time, we collected sales data and annual report analysis from major technology companies and the pet retail industry for reference.

2. Findings

2.1. Markets Size

Regarding market size, according to a recent analysis by market research and competitive intelligence provider Fact.MR [1], the use of pet companion robots has increased by 8.4% in the past five years as of 2022. This is due to the increase in people's pet ownership and spending on pets. According to our first-hand survey data, two-thirds of the user group is willing to purchase pet robots to accompany pets. Based on preliminary analysis, we speculate that in the context of the global epidemic [2] and fast-paced living environment, half of households worldwide require pet companionship and are willing to pay more attention to pets and health [3]. The market outlook is expected to be optimistic.

2.2. Competitive Landscape

Regarding the competitive landscape. The pet robot market, as an emerging vertical market in a specific field, has some large companies and brands occupying a certain market share in the segmented market. We speculate that although the market has a relatively high level of competition, its market share is relatively dispersed, and no enterprise can independently dominate the market for monopoly. The main competition is concentrated in North America, such as Petcube, which specializes in pet care, and technology giants Sony, and Boston Dynamics, but due to product differentiation in the market, high industry barriers cannot be established. The functions and positioning of price differentiation and innovation differentiation can help emerging companies or brands better occupy market share. The pet care market is also related to smart technologies such as the Internet of Things (IoT) and smartphones [4]. Specifically, pet robot products can be divided into fixed and mobile robots based on their performance. 2. Entertainment robots. 3. Nursing and feeding robots 4. Tracking and recording robots. The product features diversity and is suitable for differentiated competition [5].

2.3. Cost and Demand

From the perspective of cost and demand, based on literature and data analysis of the Chinese technology market over the past decade, we speculate that pet robots have strong potential and feasibility in the Chinese market. As a practical technical product, although the fixed development cost in the early stage was relatively high, the achievable cost was relatively low. Especially in oligopolistic technology markets with low consumer price elasticity, few competitors, and high industry barriers, marginal costs will decrease over time, original customers will accumulate, and marginal profits will increase. Ultimately, market share and gross profit margin will rapidly increase.

Due to the relatively high requirements for R&D and manufacturing capabilities, brand building, and market promotion in the pet robot market, short-term fixed costs are relatively high, but long-term realizable costs are relatively low. Therefore, small companies can collaborate with large technology companies or large pet hospitals with built-in brand-building capabilities, as well as global animal protection organizations, and initially seek angel investment assistance to support and share risks and reduce costs.

From the perspective of the demand market. We believe that there are two major opportunities in the pet robot market.

Firstly, modern people have a tight pace of life and do not have enough time to accompany their pets. They have little scientific knowledge about pet care. According to a survey published by the Daily Mail in 2022, 74% of dogs experience anxiety or depression [6], and more importantly, 18% of dogs experience this condition every week. As Figure 1 shows, in a survey of 1000 pet dog owners, about a quarter of them were completely unaware that their pets may have psychological problems. In terms of feeding, questionnaire data shows that 75% of households suffer from pet diseases such as diarrhea and hair loss due to improper owner care. It can be seen that pet robots have a high consumption elasticity in the market.

Secondly, by analyzing the sales data of China's pet retail industry in recent years, we speculate that with the improvement of modern material civilization and consumption level, more and more owners are paying more attention to companionship and happiness in life. For example, according to the tracking survey data of the questionnaire, 70% of Chinese households spend 500 to 1000 yuan per month on pets, which proves that consumers' consumption levels and purchasing power are also constantly improving. For example, according to recent literature analysis provided by market research and competitive intelligence provider Fact.MR, the use of pet companion robots has increased by 8.4% in the past five years as of 2022. This is due to the increase in people's pet ownership and spending on pets. It is expected that by 2033, the market size of pet robots will reach 3.65 billion US dollars, which is 3.3 times the growth rate of the same period [7,8]. The market outlook is expected to be optimistic. We can see from the above data that consumers' acceptance of emerging technologies is constantly increasing. The conclusion of the preliminary analysis is clear. Against the backdrop of the global epidemic and fast-paced living environment, half of households worldwide require pet companionship and are willing to pay more attention to pets and their health.

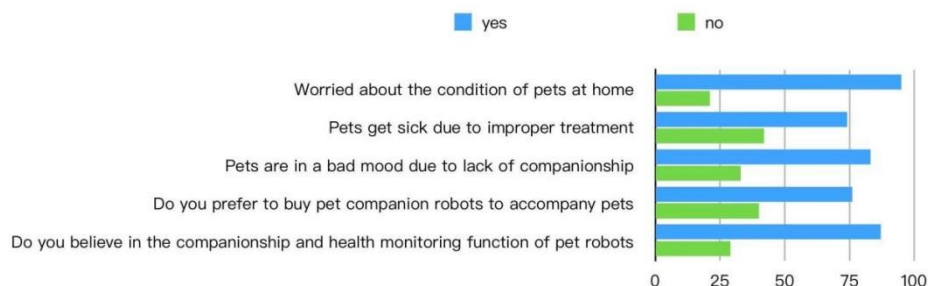


Figure 1: The questionnaire survey results on August 22, 2023.

3. Discussion and Implication

Based on the above analysis, we believe that although pet companion robots have been developed by some companies, most pet owners are unaware that this new type of robot can solve the problems faced by pets at work. How to help them learn more about the product. Therefore, we believe that multiple methods can be used for promotion to assist companies in gaining greater market share in competitive markets. For example, promoting on online platforms, collaborating with pet stores, displaying physical items, using before paying, and other ways to make people more aware of our products. Secondly, in our market research, we also found that most young people are open to pet companion robots and believe that they can purchase and try them out, as their definition of pets is no longer limited to nursing homes or ways to alleviate emotions. Pets gradually become their partners and family members. Also, sometimes, the pet owner pours excessive amounts of food into the bowl at frequent intervals of time, which may affect the pet's health. Hence, a controlled amount of food supply is essential for pet health [9]. Therefore, pet owners, in other words, our potential customers, are also more willing to pay attention to their pet's physical health and emotions and spend more money to make their pets better off. Through a questionnaire survey, we also asked respondents

to describe their expected pet companion robots. Most of them agree with our idea of pet companion robots, believing that they should have various features such as interaction, video recording, health monitoring, video editing, cute facial expressions, and even on their faces. In terms of color, pets should also see it. After all, many colors are only black and white for animals. Therefore, I believe that our products have a large market in China.

4. Conclusion

The pet companion robot market holds tremendous promise is poised to address the growing demand for efficient and compassionate pet care solutions in our fast-paced society. The pet robot market is quickly growing and evolving(2023). As our study has revealed, the struggle of modern pet owners to balance work commitments with the welfare of their pets presents a significant opportunity for innovation. Pet owners, particularly in China, are increasingly willing to invest in technology that can enhance the lives of their animal companions.

In addition to understanding the market's potential, we have also recognized the competitive landscape's complexity. While established players like Petcube and technology giants like Sony and Boston Dynamics are present, there is room for innovative startups to carve out their niche by offering unique features and differentiating themselves in terms of pricing and functionality.

Nevertheless, challenges remain, particularly in terms of the initial development costs associated with cutting-edge technology. Companies may need to explore partnerships and seek angel investments to mitigate these financial hurdles. Moreover, as the pet robot market is deeply influenced by technological advancements, there is an inherent unpredictability regarding potential breakthroughs that could rapidly reduce costs and increase accessibility.

Ethical considerations and regulatory compliance will also play a pivotal role in the market's evolution. Companies must stay attuned to shifting attitudes and policies to navigate potential obstacles effectively.

In summary, the pet companion robot market's prospects appear robust, underpinned by the evolving needs and desires of pet owners. As technology continues to evolve, so too will the opportunities for companies to create innovative, user-friendly, and ethically sound pet care solutions. Success in this burgeoning market will require adaptability, innovation, and a keen understanding of the evolving landscape. The journey to a harmonious coexistence of technology and pet companionship is underway, promising a bright way.

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