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DESIGN AND PROSPECT OF E-SHOP SHOPPING BASED ON INTERNET TECHNOLOGY

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Abstract

This paper focuses on the E-shop word-free purchase project based on Internet technology to conduct in-depth research. The background, product composition, functional characteristics, marketing strategies and future development prospects of the project are elaborated. By analyzing the current situation of China's ageing population and the living difficulties faced by the elderly, the significance of the project to improve the quality of life of the elderly is highlighted. The paper also analyzes the advantages and disadvantages of the product, puts forward targeted marketing strategies, and looks forward to the broad development prospects promoted by science and technology. It aims to provide reference and reference for related fields concerned with the intelligent life services of the elderly.

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1. Introduction

With the rapid development of information technology, smart products such as smartwatches and smart shopping cabinets continue to emerge, profoundly changing people's lifestyles. However, the elderly face many difficulties in adapting to these new technologies. Although technological progress has improved the overall quality of life, the elderly often feel helpless due to unfamiliar technology. The ageing population in our country is increasing, and the elderly population is huge, and their needs cannot be ignored. In this context, the E-shop world-free purchase project came into being, dedicated to integrating smart shopping cabinets and smartwatches, providing the elderly with a convenient, safe and personalized shopping and life service experience, promoting the popularization of smart products among the elderly and improving their quality of life.

2. Project Overview

2.1. Product composition

2.1.1. Smart shopping cabinet

Smart shopping cabinets are equipped with many advanced components to achieve excellent functions. Its touch screen is an inductive LCD display device that can receive input signals and drive the connection device with the help of a haptic feedback system to produce dynamic audio and video effects, providing users with a smooth operation experience.

The LCD screen uses eye protection ink screen, which can visually display product or drug information and effectively protect the elder's eyesight.

The sensor automatically adjusts the screen brightness according to the natural light intensity, further optimizing the shopping experience in collaboration with the ink screen.

The signal transmitter undertakes the task of interacting with the smartwatch and realizing the Internet function; the chip processor is responsible for processing various instructions and data, connecting to the network and interpreting software information.

The intelligent power supply chip uses a variety of technologies to improve energy efficiency and flexibly adapt to load changes; the speaker converts the sound signal into a clear and audible sound for broadcast, expanding the volume of the prompt while optimizing the sound quality to avoid adverse effects on the ears of the elderly.

2.1.2. Smartwatch

Smartwatches demonstrate excellent performance and play a variety of practical functions with a series of advanced designs and configurations. Its internal chip uses advanced GLSI technology to efficiently process various signals, greatly improving the efficiency of information processing, and becoming the “smart core” for the stable operation of the watch.

The touch control module is equipped with a sensitive vibration feedback mechanism, which works closely with the screen and internal chips to smoothly complete the cycle of information input, processing, and output, thus enabling users to conveniently control.

The installed lithium battery adheres to the concept of environmental protection and has durable characteristics. Under the unique charging and discharging process, it not only successfully extends its own service life, but also effectively reduces environmental pollution, laying a solid foundation for the long-term battery life of the watch.

The signal transmitter is like the “communication messenger” of the smartwatch, accurately receiving and sending signals. With strong support for Bluetooth, WiFi and other connection methods, it can

smoothly achieve stable and efficient interaction with smart shopping cabinets and other external devices, broadening the application scenarios and usage boundaries of the smartwatch.

2.2. Functional features

2.2.1. Smart shopping cabinet function

The smart shopping cabinet has many intimate and practical functions, designed to meet the diverse shopping needs of different elderly groups in an all-round way, effectively improving their shopping experience and quality of life. In terms of convenience, it is cleverly placed around the community or village, and with its superior geographical location, the elderly can easily and conveniently purchase daily necessities at their doorstep without having to travel long distances.

In terms of ease of operation, its interface design is ingenious, equipped with large fonts to clearly present key information, supplemented by clear icons, and relying on simple and easy-to-use touch screen operation mode, which greatly reduces the difficulty of use by the elderly and enables them to quickly grasp the essentials of operation.

Security dimension, the built-in monitoring system is like a loyal guard, always ensuring the safety of the whole shopping process, which is particularly critical and important for the elderly with limited mobility and slightly weaker self-protection ability; health level, it can achieve efficient linkage of health data with smartwatches, according to the specific health indicators of the elderly, accurately recommend products that fit the physical condition, and contribute to helping the elderly move towards a healthy life.

The barrier-free service features full of humanistic care, specially equipped with voice prompts to help the hearing-impaired elderly know the operation process, Braille labels to facilitate the identification of product categories for the visually impaired elderly, and effectively serve groups with special needs.

Personalized service functions rely on big data analytic to deeply mine the shopping habits and preferences of each elderly person, and recommend products accordingly, thus significantly enhancing the satisfaction and comfort in the shopping process.

2.2.2. Smart watch function

With its rich and practical functions, smartwatches have become the elder's right-hand man in life, serving their daily needs in an all-round way. In terms of life assistance, it has carefully built-in timers, alarm clocks, flashlights and many other practical tools, just like a caring housekeeper, providing convenient and efficient daily assistance for the elderly anytime, anywhere to meet the needs of various fragmented life scenarios.

In terms of health monitoring function, it can accurately monitor the elder's heart rate, blood oxygen, and sleep quality and other key health indicators, acting like an exclusive health guard, always alert, and timely feedback on health status based on continuously collected data, providing a stable escort for the elder's physical and mental health.

In terms of shopping interaction, smartwatches demonstrate powerful interaction capabilities, enabling seamless connection with smart shopping cabinets, smooth product purchase and payment processes, and support a variety of payment methods, including scan code payment, fingerprint payment, etc., greatly widening the convenient shopping channels for the elderly and simplifying shopping operations.

2.3. Target audience

Positioned as the elderly with shopping or mobility difficulties, empty netters and general public residents, focusing on meeting the elder's daily needs and improving their convenience and quality of life.

3. Project Background

3.1. Market environment

The ageing trend of China's population is significant. The elderly population over the age of 65 will reach 190 million in 2020, accounting

for 13.5%. It is expected to peak in 2057, accounting for 32.9% – 37.6%. The elderly group's demand for pension and medical care has increased greatly, and the family's pension function has weakened. The combination of the project with a variety of insurance and security systems can enhance the elder's ability to resist risks, and the market potential is huge.

3.2. Social status quo

The elderly are ageing and empty netters are prominent, most of them cannot use smartphones skillfully, their physical functions are degraded, they are prone to diseases, they have difficulty in moving and are prone to accidents. There is an urgent need for innovative products to improve their living conditions and meet daily needs.

4. Product Description

4.1. Smart shopping cabinet detailed introduction

After networking, it shows the items that can be shipped. When purchasing drugs, there are detailed instructions and consultation services. It supports a variety of payment methods. After placing an order, relevant information is displayed. It can act as a courier station. If it is overdue, it can be expedited delivery. With intelligent identification and payment functions, it is an innovative form of self-service vending machines.

4.2. Smartwatch detailed introduction

When paired with the shopping cabinet for the first time, it can display the number of shopping cabinet connections and order information, and can also place an order independently. There are various payment methods. In addition to shopping payment functions, it has a variety of life and health monitoring functions. The settings page is rich in functions and has voice prompts, which is convenient for the elderly to operate.

5. Advantages and Disadvantages of E-shop Products

5.1. Advantage

Smart shopping cabinets have many advantages. They are flexible in installation, capable of storing a variety of products and updating products in real time. They work closely with smartwatches and can operate 24 hours a day without investment. The smartwatch itself is rich in functions, its application functions and health monitoring functions are very practical, and the voice and payment functions are also very convenient, which greatly improves the user's adhesion to the smartwatch.

5.2. Disadvantage

Smart shopping cabinets reveal some shortcomings that cannot be ignored in practical applications. First, in terms of commodity reserves, the types of goods they cover are relatively simple, often focusing on common daily necessities or some popular categories. It is difficult to provide a rich and diverse selection of goods like large supermarkets, and there are obvious limitations in meeting consumers' diverse shopping needs.

Second, seriously restricted by regional network conditions, especially in poverty-stricken areas, network infrastructure building lag, signal instability, insufficient bandwidth and even network coverage blind spots and other issues, which is likely to affect the normal network operation of smart shopping cabinets, such as real-time product updates, online payment, interaction with smartwatches and other devices and other functions are blocked, at the same time, the product lacks flexibility in design form, it is difficult to adapt to local conditions, change according to needs, adapt to complex and changing field scenarios and special use needs.

Third, considering from the audience acceptance level, some of the elderly have weak acceptance of smart devices and new technologies, low operating proficiency, and need to be skilled in using smart shopping

cabinets. They need to go through special training to familiarize themselves with touch operation, information recognition, and online interaction processes. This undoubtedly adds many obstacles to their wide promotion, making smart shopping cabinets full of thorns and facing certain difficulties.

6. Marketing Strategy

6.1. Market positioning

Clearly serve specific elderly and public residents, highlighting the improvement effect of products on the lives of the elderly.

6.2. SWOT analysis

The smart shopping cabinet and smartwatch project have their own advantages and disadvantages, but also ushered in opportunities and challenges. The advantage lies in actively carrying out technological innovation and integrating advanced scientific and technological achievements. Whether it is intelligent interaction or precise monitoring functions, it is very suitable for the elder's daily life needs, and the operation is simple and easy to use. The disadvantage is that the product operation model is still in the development stage, not mature and perfect, and the public's awareness of it is limited, so the popularization and promotion face weak basic problems. At the opportunity level, taking the "Internet +" express train can deeply tap the potential of emerging fields such as health care services and online shopping convenience, and expand the market space. The challenge is that technology optimization and marketing promotion work has a long way to go, and it needs to overcome technical difficulties and solve marketing difficulties for a long time to achieve stable development.

6.3. Market threat

The project faces multiple obstacles to entering the market. First, the public is accustomed to the traditional way, and the speed of accepting new smart products is slow, which makes the market demand difficult to grasp and full of variables, and it is difficult to develop the market in the

early stage. Second, it is difficult to accurately calculate the cost of technology research and development investment, and the follow-up benefits are difficult to measure. Moreover, new products in the market are frequent, and the uniqueness of products is easy to be imitated. Novel advantages face fierce competition. Third, the operation of equipment depends on signals, which can easily cause poor signal transmission in actual use, such as weak signals in remote areas and environmental interference.

6.4. Coping strategy

In order to deal with the complex situation, a multi-pronged approach is required. It is necessary to accurately anchor the needs of the elderly group, clarify the market positioning, and shape the brand through high-quality services and products to deepen the public impression. Online use of online platform promotion, offline into the community, shopping malls to hold activities, dual-track marketing in parallel. Dig deep into the unique functions of the product, increase publicity investment, and strengthen the dissemination of selling points. Continue to upgrade technology, beautify the appearance, and optimize the user experience. Expand the team, enrich the service content, and create multiple value points. Maintain investment in scientific research to ensure technological leadership, and at the same time support long-term after-sales protection. Carefully improve the watch design to enhance the overall.

6.5. Marketing methods

Marketing can work in three ways. SMS marketing uses the mass sending function to screen target audiences, push product highlights and preferential information, and increase the awareness rate of enterprises. Advertising marketing integrates TV stations, bus stations and other channels to deliver creative content, high-frequency exposure, and raise awareness. Experience marketing visually displays products, allowing consumers to experience the operation in person, choose whether to buy according to their feelings, and use word-of-mouth to drive sales.

7. Future Prospects

7.1. Impact of technological development

Technological advancements have reduced product costs and the popularity is expected to increase. Smartwatches have better functions than traditional watches and bracelets, can better serve the lives of the elderly, and monitor human health data 24 hours a day.

7.2. The integration of big data and the internet of things

Utilize health big data to create a service platform, realize human-machine interaction, become a key node for the interconnection of the elderly and goods, optimize performance and services, and promote the development of intelligent and personalized products.

7.3. Product development trend

The product will become an important part of the life of the elderly, and the E-shop word-free purchase service will continue to improve, attracting more elderly people to use, and also promoting the elderly to improve their health awareness and adapt to smart life.

8. Concluding Remarks

The design process of the E-shop word-free purchase project made the team gain a lot. They realized the importance of combining theory and practice, and found that the project has shortcomings and needs to be continuously improved. Society should pay close attention to the health of the elderly, inherit the virtues of respecting the elderly, and provide better life protection for the elderly. This project is expected to play a positive role in improving the quality of life of the elderly, and also provide useful exploration for the development of smart products in the elderly market.

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