

Internet of Things Technology in Home Marketing under Intelligent Environment

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Abstract: With the improvement of per capital consumption level, the rapid development of Internet of things and artificial intelligence technology, and the continuous change of people's life style caused by technological changes, the smart home industry will shine brilliantly in the future market. The purpose of this research is to apply the Internet technology of mono to marketing of modern smart home market. This study analyzes the sales situation of smart homes in the market for the last three years as an experimental data and analyzes the areas of smart home that consumers prefer and the areas that need to be improved. In this study, we combine intelligent data processing technology of the Internet and rationalize the acquired data and predict and plan the future development of the smart home industry. It uses the Internet, big data, and other networks to effectively diffuse and find potential users of smart home. The research results show that the average annual growth rate of China's smart home market is 20%, and the industry output value will reach 96 billion yuan in 2019. It is estimated that the annual growth rate will reach about 25% from 2022 to 2035, and the channel growth will be 27% in 2019. In terms of furniture selection, 44% of consumers pay attention to the design and appearance of furniture, exceeding the proportion of paying attention to material and workmanship. The results show that the smart home industry is developing continuously and more and more consumers pay attention to the smart home industry. The conclusion is that the data processing of Internet of things technology accurately and efficiently analyzes the current situation of consumers' preferences and potential customers for smart home, which contributes to the development and planning of the company's marketing.

1. Introduction

1.1 Background Significance

With the rapid development of China's local real estate market, all kinds of high-end residential buildings have sprung up. In order to meet the high requirements of customers for housing quality, in the severe competitive environment, real estate developers have begun to develop the software and hardware of high-grade residential buildings. High end furniture, high-end household appliances, bathrooms, marble walls, high-end wallpaper, etc. after years of development, the uniformity of these hardware has become very high. Real estate developers urgently need new bright places and selling points, so smart home systems appear. The vision of high-end real estate developers. Smart home control system is a professional market with the rise of computer, network, electronic technology and high-tech manufacturing.

As with many industries, demand for domestic markets continues to expand, and many manufacturers focused on European and American markets are targeting domestic markets in China. How to integrate the dominant position of the market, how to deal with the pursuit of many competitors, how to adapt to deeper and deeper real estate laws and regulations, and the competitive strategies of smart home products are very necessary. The Internet of the thing greatly expanded the space of the social activity, and greatly changed the consumption pattern of people. The consumption pattern based on the "Internet plus" background is quite different from previous consumption patterns that have a significant impact on production, market circulation, operations and sales.

1.2 Related Work

In the research of IOT technology and marketing in smart home, Hubert M's research combines technology acceptance model, innovation diffusion theory and risk theory to develop a model in smart home application environment. His method is based on an online survey of 409 participants and uses structural equation modeling to analyze the data. Each of his theories provides unique insights into technology, many of which are interrelated. His method is unstable [1]. Sanguinetti A's research investigates consumers' knowledge, attitude and experience of smart home technology (smart HEM) with energy management functions to assess barriers to the adoption and Realization of energy efficiency. Specifically, he studied the shoppers of smart home retailers to measure customers' cognition and attitude towards smart home. They also analyzed Amazon's comments on smart home, so as to better understand the motivation and experience of early users. His method is not accurate [2]. Zhang Y believes that the Internet of things (IOT) is an innovative revolution on the Internet and can become a new platform for e-commerce. The old business model is difficult to adapt to the e-commerce of the Internet of things. He proposed an e-commerce mode of the Internet of things specially designed for the e-commerce of the Internet of things; he redesigned many elements of the traditional e-commerce mode; at the same time, he realized the transaction of intelligent property and payment data on the Internet of things with the help of P2P transaction based on blockchain and smart contract. His method is not practical [3]. Mahalaxmi G's research improves the ant colony optimization routing algorithm of Internet of things based on multi-agent technology. He believes that the Internet of things environment contains many types of networks, and each network can use a special ACO algorithm program. This process depends on the specifications, status and needs of the network. This Internet of things environment has several intersections between completely different networks. These intersections come from different

coverage areas. These intersections are called overlapping areas. In the overlapping region, he uses two agents to generate an optimized routing algorithm. Moreover, they measure the effectiveness of the proposed routing algorithm from the aspects of delay time, packet loss rate, throughput, management bit overhead and energy consumption rate. His method is inefficient [4].

1.3 Work of This Paper

This paper first introduces some applications of Internet of things technology in smart home marketing, and intelligent data processing technology of Internet of things technology. This study shows the common marketing communication means in the current market. The data calculation of this study mainly lies in the structural equation model, and the way of intelligent furniture is also described in detail. This study selects the sales status of smart home and traditional furniture in recent three years as the research object, combined with the main data of wireless communication of smart home and the marketing strategy of Internet of things technology. Through the experimental results, this paper analyzes the development of smart home brand, the demand of consumers for smart home function, the expansion of smart home market and the source and proportion of consumers. It is concluded that the Internet of things technology used in the smart home market can effectively and accurately analyze the data, so as to provide effective measures for marketing, so as to better expand the market.

2. Smart Home Marketing and Internet of Things Technology

2.1 Internet of Things Technology in Smart Home Marketing

(1) Wireless temperature and humidity sensor

The main function of wireless temperature and humidity sensor is to detect indoor and outdoor temperature and humidity. Now, air conditioning is popular in thousands of homes. Many air conditioners have temperature detection function, but many consumers feel that the detected temperature is not correct. The main reason is that the capacity of the air conditioner is limited, so only the temperature detection function can be used to detect the temperature near the air conditioner. However, wireless temperature and humidity detector can accurately detect indoor temperature and humidity. Its important function is that when the indoor temperature is too high or too low, the air conditioner can be started in advance to adjust the temperature. Another important function of wireless temperature and humidity sensor is that the temperature and humidity sensor set outside the wall can accurately convey the actual external temperature to the people going out, and adjust today's activities according to the temperature [5-6].

(2) Wireless gate

Wireless door sensor and window sensor functionality is to prevent intrusion. Today the safe is common in most families. Wireless door and window sensor functions allow you to detect and record specific time and safe details in detail. Time to notify authorized phone. In addition, wireless door sensors and window sensors have automatic functions. For example, the landlord will automatically unlock the alarm and send an alarm when you are at home. However, as soon as the host goes out, the magnetic field of the door and window is automatically fortified. When someone opens the door and the window, the authorized phone will be notified immediately and an alarm will be issued. The biggest difference between wireless door sensors and window sensors, traditional door sensors and window sensors is simple installation. Typically, the installation process can start by attaching the battery directly within two minutes [7].

(3) Wireless infrared intrusion detector

The main function of wireless infrared intrusion detector is to prevent illegal intrusion. After a night's rest, the owner of the house presses the wireless sleep button beside the bed. The bedside lamp will not only be turned off, but also the automatic defense of the wireless infrared intrusion detector will be turned on. At this time, if someone breaks in suddenly, the alarm signal will be sent out, and the owner of the house will automatically turn on the light in the intrusion area to make the intruder afraid. Wireless infrared intrusion detector also has automatic defense function. When the owner is not at home, if someone breaks into the house, the email can be automatically notified to the owner's mobile phone through the wireless gateway. According to the alarm processing command sent by the mobile phone of the owner of the house, further processing is carried out [8-9].

(4) Wireless doorbell

There are more and more big houses and villas in our life. Many homeowners close their doors when they sleep or go out. At this time, if someone calls, please ring the ordinary doorbell. The owner of the house couldn't hear the doorbell and didn't know what was going on in his home. However, if the wireless doorbell is installed, the ringing signal will be sent to the bedside switch, and someone will visit the owner of the house. If the homeowner is not at home, someone will ring the doorbell, which will be sent to the homeowner's mobile phone through the gateway, so as to know the owner's details at any time. This doorbell has a high safety rate for big houses and villas [10].

2.2 Intelligent Data Processing Technology

(1) Basic idea of intelligent data processing technology

Intelligent data processing technology is one of the core technologies to realize data centric Internet. Intelligent processing refers to the use of cloud computing and fuzzy recognition and other intelligent technologies as a data management platform to analyze and process a large number of data and information. Use data space to organize data and services of objects logically. On this basis, data mining and data fusion are integrated to realize multi-level, multi-level and cross domain data processing. At the same time, the data and the above services are presented in an ambiguous way, because they are inferred to realize the correct description of multiple worlds [11-12].

(2) Composition of intelligent data processing technology

Intelligent data processing technology includes storage, query, analysis, mining, understanding of perceived data and decision and action based on perceived data [13].

(3) Intelligent data processing technology and Internet of things

Due to the huge amount of initial collection and tracking of information in the Internet of things, there are strict requirements for the storage and tracking process of a large amount of information from storage to service provision. Intelligent data processing technology is also indispensable for the processing of a large amount of information. In order to realize the intelligent dialogue between things and things and between things, the Internet of things needs data management and intelligent processing.

(4) Development trend of intelligent data processing technology

Different from the previous network, the characteristics of the Internet have brought many new topics to that information processing. The development of intelligent data processing technology mainly includes the following contents. Automatic processing of network data, specific application, improvement of algorithm scalability, improvement of algorithm adaptability, reduction of data redundancy, load of appropriate data nodes [14-15].

2.3 Common Marketing Communication Means

(1) Advertising. The definition of the American Marketing Association is: "advertising is the statement and promotion of the concept, goods or services made by an identifiable advertiser in a non personal way, with the investment and payment of the identifiable advertiser."

(2) Sales promotion. This is the second largest communication tool after comprehensive marketing communication advertising, which mainly refers to the economic benefits of gift sales, discount sales, coupons and gifts to consumers [16-17].

(3) Event marketing. This means that enterprises can organize participatory and interactive activities to make the target consumer groups participate, achieve the purpose of mutual communication and understanding, improve the consumers' love and understanding of the brand, and strengthen the brand relationship. Consumers receive rewards for reviews, brand / product knowledge contests, and brand anniversary celebrations [18-19].

2.4 Structural Equation Model

(1) Basic principles of structural equation model

The construction equation model consists of a measurement model and a construction model represented by three matrix equations [20]. The specific performance is

$$\eta = B\eta + \Gamma\xi + \zeta \quad (1)$$

$$Y = \Lambda_Y\eta + \varepsilon \quad (2)$$

$$X = \Lambda_X\xi + \delta \quad (3)$$

Formula (1) is the part of structural model, which specifies the causal relationship between implicit exogenous variables and implicit endogenous variables assumed in the research model. B represents the effect coefficient matrix of implicit endogenous variables on implicit endogenous variables, Γ represents the response coefficient matrix of implicit exogenous variables to implicit endogenous variables, and ζ represents the vector composed of residual items. Equations (2) and (3) are the part of measurement model, which respectively specify the relationship between the recessive endogenous variable η and the dominant endogenous variable Y, and the relationship between the recessive exogenous variable ξ and the dominant exogenous variable X; Λ_Y and Λ_X respectively represent the regression coefficient or factor load matrix for the recessive variables η and ξ ; and ε and δ represent the measurement errors of the dominant variables Y and X respectively. The variance and covariance of the recessive endogenous variable η need not be estimated in the program

$$\text{Var}(\eta) = \text{Var}[(\Gamma\xi + \zeta)/(1 - B)] \quad (4)$$

(2) Quantile

In most econometric regression models, researchers use mean regression to analyze the effect of X on conditional expectation of Y. However, in some problems, we are not concerned about the influence of the explanatory variable x on $E(Y|X)$, but we are concerned about the influence of X on the whole conditional distribution $E(Y|X)$.

For the population unconditional quantile, firstly, assuming that the distribution function of the random variable x is $F(x) = P(X \leq x)$, then its τ quantile can be defined as:

$$Q_r(X) = \arg \inf \{x \in R; F(x) \geq \tau\} (0 < \tau < 1) \quad (5)$$

If the inverse of the distribution function $F(x)$ is defined as

$$F_x^{-1}(\tau) = \inf [y \in R; F(y) \geq \tau] \quad (6)$$

Then:

$$Q_r(X) = F_x^{-1}(\tau) \quad (7)$$

For the conditional quantile of population, a random vector (x, y) is set, where the conditional cumulative distribution function of Y under the condition of $X = x$ is $F_{Y|X=x}(y|x)$, then the τ quantile of the conditional random variable $Y|X = x$ is defined as:

$$Q_r = (Y|X = x) = \arg \inf \{y \in R; F(y|x) \geq \tau\} (0 < \tau < 1) \quad (8)$$

(3) Quantile regression

Suppose we have sample series $\{(X_i, Y_i), (i=1, \dots, n)\}$ that satisfies the following regression model, namely

$$Y = m(X) + \varepsilon; X \in R \quad (9)$$

Assuming that the error term $\varepsilon_i \{i=1, \dots, n\}$ is an independent and identically distributed sequence and the distribution is unknown, the τ order conditional quantile $m_\tau(x)$ of response variable y satisfies $\tau = P[Y \leq m_\tau(X)|X = x]$. After simple calculation, it can also be equivalently defined as

$$m_\tau(x) = \arg \min_{\theta \in R} E\{\rho_\tau(Y - \theta)|X = x\} \quad (10)$$

Where $\rho_\tau(u) = u[\tau I(u \geq 0) - (1 - \tau)I(u < 0)]$ is the test function and $I(\cdot)$ is the indicative function. The loss function without explicit function is

$$\rho_\tau(\mu) = \begin{cases} \tau\mu, \mu \geq 0 \\ (\tau - 1)\mu, \mu < 0 \end{cases} \quad (11)$$

The test function is a loss function. Intuitively, it is proved that the test functions are all positive, and the score will affect the value of the test function.

2.5 Way of Intelligent Furniture

(1) Introduction of automatic sensing technology

The automatic detection technology is the foundation of the Internet and allows you to monitor, identify and collect information on various environments and objects in real time and recognize the information of the outside world. Sensors are the primary components of the Internet's perception layer and are the only way to get information. This plays a crucial role in real-time performance and thermal performance of the system. Development of automatic detection technology appears in two directions of an intelligent sensor and a wireless sensor. As the base and detection terminal of the sensor network, the technical level of the intelligent sensor directly determines the overall technical performance of the sensor network. The intelligent sensor network is an intelligent data terminal

device that integrates sensors and microprocessors, with environmental identification, data processing, intelligent control, and data communications [21-22].

(2) Introduction of automation technology

Automation refers to the process of automatic detection, information processing, analysis, judgment, operation and control of machine devices or systems, without manual operation in order to achieve the expected goal. Automation technology is widely used in industry, agriculture, military, commerce and other fields, and has played a full role in production and daily life. Through automation technology, civilized human beings can eliminate heavy physical labor, expand human organ function, save people from large-scale and monotonous work mode, and greatly improve labor productivity. To avoid victims, automation can replace people who work in harsh and dangerous environments. Automated machines can replace part of the human brain, simulating human thinking to make decisions [23].

(3) Introduction of information technology

Information technology is a technology based on modern communication, network and database technology. It can summarize various elements of the research object into the database, and help specific groups of people to live, work, research and make decisions. The use of this technology can greatly improve the efficiency of various actions and provide excellent technical support for promoting the development of human society.

(4) Introduction of computer network technology

Computer network is the product of the rapid development and integration of computer technology and communication technology. The use of network has a great impact on the development of human social life, politics, economy and technology. The Internet of things is formed and developed based on the Internet, which extends the Internet to a wider range of applications. Computer network is "a collection of autonomous computer systems connected by sharing resources with each other". The main features of computer networks are as follows. The main purpose of forming computer network is to realize the sharing of computer resources. Interconnected computer systems are autonomous systems, and communication between network computers must follow a common network protocol [24-25].

(5) Use of smart materials

Intelligent materials have three basic elements: perception, drive and control. They have systems or structures similar to biological intelligence. Intelligent materials can automatically judge, control and adjust according to the information that can adapt to the changes of external conditions. The application of intelligent materials in furniture design brings more possibilities to the realization of intelligent furniture products.

3. Marketing Experiment of Internet of Things Technology Application

3.1 Experimental Data Set

The data of this survey is based on the baidu database and collects smart home sales and consumer attitudes and preferences over the last three years in China and compares traditional housing conditions for these three years. For home furniture, select the sofa and bed.

3.2 Data of Smart Home Based on Internet of Things Technology

The main type of wireless technology can be classified into ZigBee technology, Bluetooth technology, WiFi technology, and infrared technology. Among them, Bluetooth technology, WiFi

technology, and infrared technology have been manufactured for a long time and the disadvantages are obvious. Bluetooth technology typically has a small transmission range within 10 meters radius and cannot be self-organized. Interference prevention is low, expensive and not suitable for intelligent home networks. WiFi technology is low security and may be stolen by hackers. Wireless security is not suitable for smart home and is limited to the size of smart phone. Of the four technologies, infrared signals are safest. Because the security of ZigBee technology and the number of accessible signal nodes are relatively large, and the energy consumption is very small, ZigBee technology is more suitable as the main wireless connection technology of smart home. As shown in Table 1, the technical characteristics and main data comparison of wireless smart home connection.

Table 1: Technical characteristics and main data comparison of wireless smart home connection

Wireless technology	Frequency band	Transmission speed	Power waste	Number of connections	Security
ZigBee	2.4GHz	0.25Mbps	1~3mW	65536	Medium
Bluetooth	2.4GHz	732kbps	1~100mW	7	High
Wi-Fi	2.4GHz	54Mbps	10~50mW	256	Low
Infra-red	820nm	16Mbps	1~3mW	2	High

As can be seen from Table 1, great progress has been made in artificial intelligence technology, speech recognition technology, computer vision technology and other artificial intelligence perception technologies. In the future, smart home will have the ability to actively observe the surrounding objective environment and judge from the perspective of observation ability. The low cost and high efficiency of cloud computing technology effectively supports the calculation and processing of network data in smart home devices.

3.3 Marketing Strategy of Internet of Things Technology in Smart Home Marketing

(1) Promotion strategy

In order to ensure the quality and effect of marketing business, it is necessary to give full play to the marketing tactics of promotion strategy in the marketing business of smart home. In the process of competition in the smart home market, the promotion marketing plan can not only attract more consumers, but also effectively increase the best-selling products in the market, accelerate the efficiency of the company's investment projects and product turnover rate, and promote the promotion of the company's core competitiveness.

(2) Channel strategy

Under the marketing concept of channel strategy, the company's high-end smart home is recognized by consumers. In order to improve consumer spending, a revolutionary demonstration store is established in a large shopping center to allow users to experience and make them more comprehensive and objective. Collect feedback from consumers. In order to pull out the value of marketing channels, companies can select appropriate decorative companies in accordance with the Internet technology of things and conduct strategic cooperation. Therefore, the decoration company can sell the company's smart home, expand the company's marketing channel, and improve the company's economic benefits.

(3) Price strategy

In the development of smart home market, enterprises need to collect, analyze and process market information according to Internet of things technology, and then formulate relevant product marketing strategy. Price war is one of the common marketing schemes in the process of market share competition. In order to make full use of the advantages of the value strategy of marketing,

smart home products must realize the first long-term and reliable price strategy, implement the market price setting and the profitability of the second target market price.

If the marketing plan of the second market price is made, enterprises must analyze the life cycle of various smart home products from the perspective of consumers. Through analysis, we can find that consumer behavior in smart home can be improved according to consumer demand and consumption. To achieve better marketing effect, it can bring more economic benefits to enterprises.

(4) Product strategy

Under the marketing concept of product strategy, enterprises can "liberate" product portfolio, let customers choose product portfolio, let customers have the right to foresee, and then develop the possibility of customers' smart home consumption. This kind of smart home marketing strategy can not only let users produce more value, but also can restrain the production cost of housing.

By continuously accumulating consumer data information, enterprises can analyze customers' consumption behavior through big data, understand the best-selling smart home portfolio in the market, reasonably increase product investment and R & D, and further emancipate the consumption possibility of consumers. Speed up the market reform efficiency of smart home products.

(5) Differentiation strategy

With the support of Internet technology, the consumer can communicate directly with the furniture manufacturer. Consumers can feed furniture functions to manufacturers and manufacturers can customize production according to their personal needs.

Under the development of differentiated production differentiated strategies, the company's smart home products are recognized by more consumers. Under the development of this marketing concept, furniture manufacturers and consumers establish direct contacts, improve the user's dependence on enterprise products, improve the tenacity of users, and turn potential customers into the corporate consumer.

4. Internet of Things Technology of Smart Home Marketing

4.1 Market Scale of Smart Home Industry

According to the latest news from the two sessions in 2019, the vat of manufacturing industry will be reduced from 16% to 13%. That's good news. However, in recent years, there has been a fierce competition in the industry. This is mainly due to people's understanding of the lower price limit of the software sharing website industry and the fierce price competition among brands with a large share in the industry. That's true. This fierce competition caused by the fierce storm caused by the industry's large-scale transformation. As shown in Table 2, the market size of smart home industry is predicted.

Table 2: Prediction of the market scale of China's smart home industry

	2017	2018	2019	2020E	2021E
National residential sales area (100 million square meters)	13.9	13.2	13.7	13.8	14.5
Average area of Single Suite (m2)	100	100	100	100	100
Sales of first-hand houses (10000 sets)	1382.0	1383.0	1312.0	1376.8	1446.3
Number of housing units in stock (10000 units)	61971.8	63351.2	64733.4	66043.5	67419.3

As can be seen from Table 2, consumers also like furniture brands with personal and stylized design. According to the survey of consumer behavior in furniture market published by Pacific

Company, 48% of consumers are interested in whether the brand is original or not. As for the choice of furniture, 44% of consumers have exceeded the proportion of furniture and finished products, expressing concern about the design and appearance of furniture. This shows that, with the development of the main consumer power towards the young age, personalized furniture brands announce the arrival of a wide range of market space.

4.2 Source and Proportion of Consumers in Smart Home Market

Smart home buyers are divided into four categories according to price sensitivity. The first category is mainly real estate companies and enterprises as the main body of the bid buyers. In most cases, such groups want to purchase products through public bidding, pay attention to the main interests of products, are very sensitive to price, and obtain the lowest price through the advantage of purchasing quantity. In order to get better service, they will understand the products and services of the bidding supplier, conduct fierce negotiation, and change the trading partner if the price is not satisfied. The second is the public organs. While purchasing goods through public collection, along with the preparation of procurement rules, the realization of commodity prices and basic functions of commodities has attracted much attention. However, due to the restriction of government financing rules, there are few negotiations. The third category is individual consumers, most of which are installed at home. This type of group demand combination pays close attention to the main advantages of products, is very sensitive to the quality and price of products, and hopes to require higher quality and service at a lower price, and to add more products and services. The fourth category is a cooperative engineering company with close relationship with customers. The company's products flow to real estate projects or individual users through channels. This type of group believes that the core focus of the product is moderate and has relevant product knowledge. As long as there is a small discount and moderate service, the price will not deviate from the industry level. As shown in Figure 1, the proportion of smart home buyers by category.

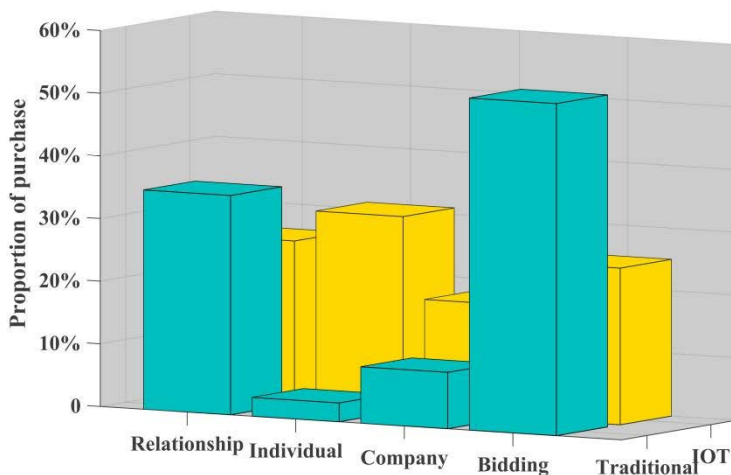


Figure 1: Proportion of smart home buyers

As shown in Figure 1, more than 95% of smart home products flow to the first, second and fourth types of buyers. Users can meet the needs of scenic spots, which are divided into apartment, community, hotel, office area, senior club and retirement community. In communities, offices and apartments, more programs account for 90%. In these three use schemes, the combination of most

products used in sales is the combination of intelligent lighting, smart screen, intelligent community, intelligent background music, video communication and other products.

4.3 Development of Smart Home Brand

Smart home is the basic application of Internet of things in family life. This directly affects the daily life of most residents. The market prospect is broad. According to the survey, there are about 100 million potential smart home customers in China. From 2012 to 2016, the average annual growth rate of China's smart home market is 20%. In 2019, the industry output value is 9.6 billion yuan, and it is expected to reach 1125 billion yuan by 2022. It is estimated that the annual growth rate will reach about 25% from 2022 to 2035, and it will reach 377.6 billion yuan in 2030. China's smart home era has come. China's smart home brand index in 2019 is shown in Figure 2.

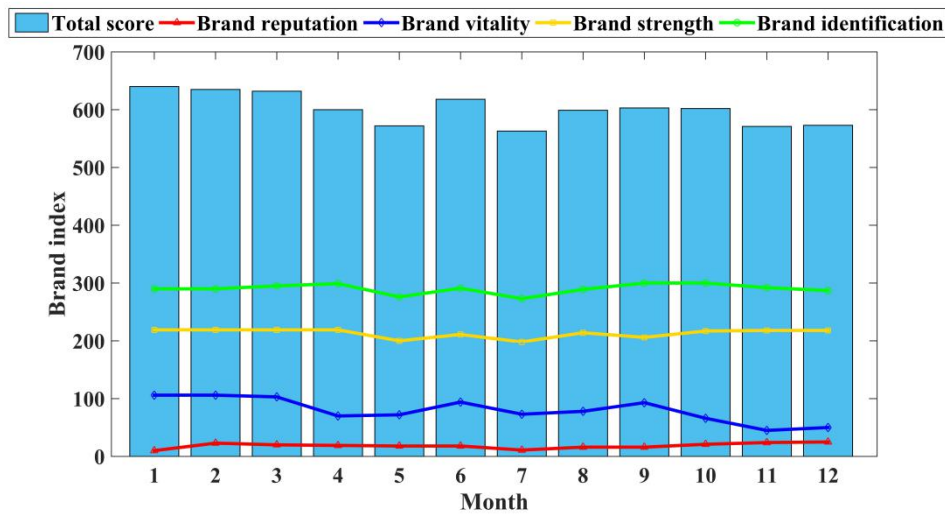


Figure 2: Analysis of China's smart home brand index in 2019

It can be seen from the analysis in Figure 2 that in the next three to five years, smart home has entered a relatively rapid development stage. At the same time, protocols and technical standards have also begun to actively use and integrate with each other, resulting in industry mergers and acquisitions, which has become the mainstream. The next 5-10 years will be very fast, which is the most difficult period for the development of smart home industry. As housing has become the focus of competition among different industries, smart home, as a succession platform, has become the first target of competition.

4.4 Consumer Demand for Smart Home Function

The initial basic requirements of individual consumer groups are also the concern for security, which put anti-theft alarm, video monitoring, electrical control and home network in the first place. From the graph observation, we can see that the potential is huge, but the awareness of users is relatively low, and the market needs to be cultivated to grow up. The consumer's attention to the function of smart home is shown in Figure 3.

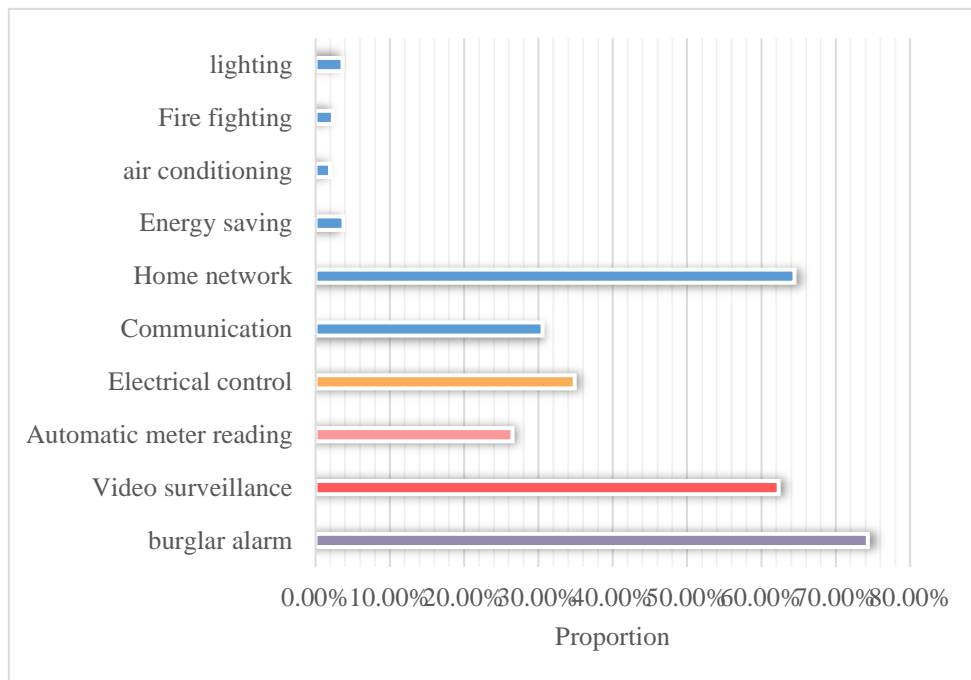


Figure 3: Consumer concerns about smart home function

As can be seen from Figure 3, more than half of the consumers are more concerned about the home network, anti-theft alarm and monitoring in smart home, while they pay little attention to energy saving, lighting, air control and fire control. From this, we can make a good marketing plan. In the future, the smart home industry should strengthen publicity and upgrade services in the aspects of network and alarm, so as to better drive the purchase desire of consumers.

4.5 Expansion of Smart Home Market under Internet of Things Technology

Whether the development of offline channel is slow, or the internal consumption of online channel and offline channel, the final reason is that enterprises do not pay enough attention to this channel. From the growth data of offline channel, the growth of channel in 2019 is 27%, but compared with the growth of 31.87% in the first three quarters of 2019, leather sofa channel is relatively mature. In addition to slow growth, the growth of channel is relatively slow. Other categories are in a period of rapid growth, but the channel is still decelerating. From the high attention at the beginning of the year, 1000 stores were planned to open and 876 stores were actually opened. According to the final results, there was no obvious improvement measures in the whole process. This is not to say that the company does not want to act, but mainly related to the offline channel operation in the past. As shown in Table 3, the growth of channel stores in 2019.

Table 3: Channel store growth in 2019

Category	Number of stores in 2018	Number of stores in 2019	Net increase in stores	Growth rate
Ordinary sofa	1499	1714	215	14%
Intelligent sofa	550	782	232	43%
Ordinary bed	787	990	203	26%
Intelligent bed	218	444	226	101%
Total	3054	3930	876	27%

As shown in Figure 4, the growth of channel stores in 2019.

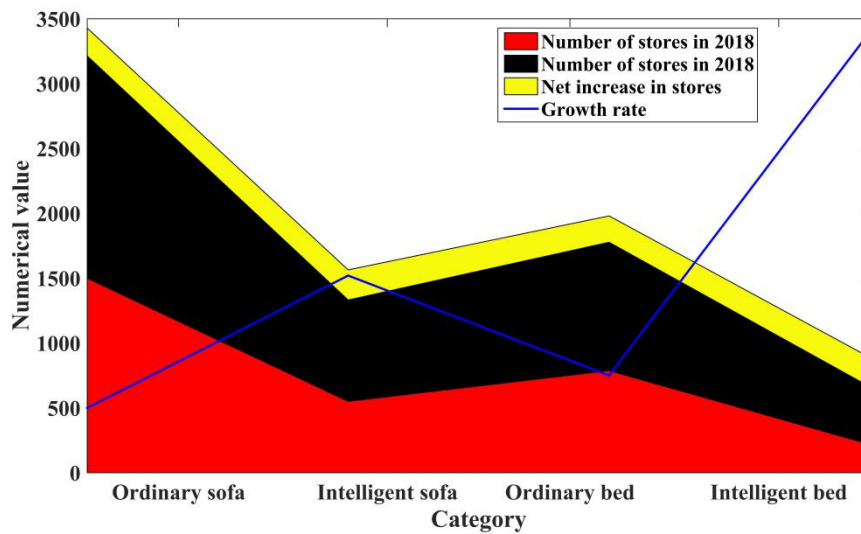


Figure 4: Channel store growth in 2019

In the analysis shown in Figure 4, in practice, online sales is not enough. The customer service team in the company will evaluate the performance indicators. Online products have independent e-commerce products and o2o models with uniform prices. However, considering the high similarity and substitution of product styles, the gross profit and cost performance of online products are low, and the results are the same. Customers can't go offline and online delivery smoothly, but the possibility of competitive orders is high. When they visit the terminal outlet, they complain more and more. The e-commerce price of specific products is low, can't catch up with the price, which product's e-commerce does not run and so on. The position of enterprises in e-commerce is shaking. Failure to provide appropriate products and strategies for e-commerce channels will not only delay the development of e-commerce, but also cause the online and offline use of the same product line and sales strategy, thus limiting the internal consumption of unnecessary channels, but restricting the development of each channel.

5. Conclusion

Smart home industry is currently in the stage of rapid growth. China's smart home industry also has a history of 7 years. It can be roughly divided into five development stages: concept year, research and development year, experiment year, popularization year and popularization year. The domestic smart home market has a huge market prospect. With the maturity of technology and the further improvement of consumer demand, the smart home industry will become a new bright spot in China's economic development.

Ordinary consumers have a low awareness of the smart home industry. Therefore, marketing personnel can deepen the impression of consumers and constantly improve their awareness by using various marketing modes. The smart home industry may be closer to the public. Only by continuously improving the awareness of consumers to purchase smart home automatically can we solve the bottleneck of smart home development and promote the production of smart home. The industry is growing healthily and rapidly. In the process of the development of smart home industry, in order to ensure the overall operation efficiency of the enterprise, carry out a variety of marketing

based on the Internet of things technology, constantly explore potential consumers, accelerate the market conversion efficiency of enterprise products, and promote the virtuous circle of scientific research achievements, so as to lay a foundation for the future development of the company's smart home market and promote the sustainable development of the company.

In smart home, in order to realize the flexible and changeable indoor air mode in the living environment, it is necessary to objectively require the design and production to conform to personal customization. The importance of building intelligent furniture product series is to realize modular design and mass customization. The above meets this requirement. At present, smart fax machine is facing high-end users and its price is relatively high. However, the pursuit of high-quality life needs will promote the development of intelligent fax industry. I think in the near future, smart fashion system will become lake and fashion. In the future, ordinary people's home furnishings can also cut costs and bring about a new way of life.

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