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A Study on The Marketing Strategy of IoT (Internet of Things)-based Smart Home Service Companies Focusing on The Case of Xiaomi

[1]Jinle Liang, [2]Min Jung Kang

[1]*Master's Graduate, Department of Business Administration, Mokpo National University*
jinleliang@gmail.com
[2]*Associate Professor, Department of Business Administration, Mokpo National University*
jinleliang@gmail.com, 7minjeong@hanmail.net(corresponding author)

Abstract

In the background of the rapid development of the IoT, smart home work is becoming more and more important to each science and technology company. Smart home provides a safe, comfortable, high-quality, high-performance smart home living space compared to general homes, and at the same time It is responding to the low-carbon, eco-friendly global trend. Growth drivers driving the smart home market are increasing the number of Internet users, increasing disposable income in developing countries, increasing the importance of remote home monitoring, and increasing the need for energy saving and low carbon. In 2013-2014, Xiaomi launched a series of smart routers and smart home hardware devices. In 2015, it announced the latest product of the Xiaomi Ecological Chain, the "Smart Home Package," and in 2016 launched the MIJIA brand to invest in various smart product companies. In 2017, Xiaomi announced a plan to build an open smart hardware MIOT platform. We investigated the management strategy of Xiaomi home smart service based on IOT. The management strategy was divided into cost lead strategy, differentiation strategy of Xiaomi home service, and AIOT strategy of Xiaomi smart home.

Keywords: *Smart Home Service, Cost Lead Strategy, Differentiation Strategy, IOT, AIOT*

1. Introduction

IoT is an intelligent technology and service that connects all things to the Internet to exchange and collect information. Smart home products realize functions such as remote control devices, interconnection between facilities, and self-learning of facilities, and provide personalized living services through collection and analysis of users' behaviors, thereby enhancing the safety, comfort, energy saving, and high efficiency of family life. In 2018, the U.S. accounted for 42% of the global smart home market, and if the smart home penetration rate in major countries of China, Japan, UK and Germany was 20% or more, the U.S. was the highest at 32% [2]. According to a report released in 2019 by IDC ((International Data Corporation), a US market research organization, the number of smart home devices shipped worldwide this year is expected to increase by 26.9% compared to the previous year to 832.7 million units. IDC predicts that the smart home

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Corresponding Author: 7minjeong@hanmail.net
Tel: +82-61-450-2613, Fax: +82-61-450-6466
Associate Professor, Department of Business Administration, Mokpo National University, Korea

market will maintain a solid growth rate of 16.9% annually, and by 2023, the number of global shipments will reach about 1.6 billion units.

Even inside the home, a home network environment has been established that allows access to home appliances and electronic devices inside the home from outside. Home appliances such as TVs, air conditioners, and set-top boxes are linked to networks such as the Internet, and they can be monitored and controlled through a PC or mobile terminal. Not only home appliances, but also gas, water, electricity, air-conditioning devices, and security devices such as door locks and surveillance cameras are connected to the network [6, 7].

In this paper, literature on IoT and smart home service was introduced. In addition, the competition strategy for Xiaomi's smart home service business was studied. Specifically, this study analyzed the internal competitive environment and business situation of the Xiaomi smart home, and analyzed the core competitiveness factors of the Xiaomi smart home service in terms of technological innovation, resource advantage, corporate culture, and management harmony.

2. Theoretical Backgrounds

2.1 IoT Service

IoT from a service perspective means that meaningful sensing information is continuously collected through various devices equipped with sensors, and information is transmitted and received quickly and reliably through wired and wireless networks connected directly and indirectly to analyze cloud computing environments and big data. Through this, automated intelligent services are provided [3]. There are three main technical features of IoT. First, the IoT has the ability to detect, communicate, and calculate objects. Second, the goal of IoT is the convergence of the physical and information worlds. Third, IoT can provide interconnection to all objects at any time and at any place.

2.2 Samrt Home Service

Smart home was defined as an automatic system developed to manipulate lighting, temperature, multimedia devices for monitoring, and activate security devices related to various functions such as windows and doors [1]. Smart home was defined as a service that can remotely control home appliances and other devices in the house [4]. Smart Home is a generic term for products, services, and solutions that remotely monitor, control and operate through a mobile terminal or a PC by linking home devices through a network [11]. In addition, it is said that the smart home service can be used to remotely monitor and control various devices such as household appliances such as air conditioners, refrigerators, and other devices in the house, such as water, electricity, cooling and heating, through a communication network. Smart home services were calssified as follows. First, functionally, it is a monitoring device that can notify residents so that they can control automation. Second, it is the most well-managed building energy system in terms of instrumentation, which can control information and price-related behavior. Lastly, from a socio-technical point of view, the smart home makes it possible to face the secular reality of family life through a digital, technological, and networked perspective [5]. Smart homes improve the quality of life of residents through interactions between users and smart devices by connecting various devices such as home appliances and lighting through a network as smart devices are installed in the home [8]. Consumers will demand a variety of smart home services such as new services related to improving the quality of life and functional services for safety and energy saving for home related services [9].

3. Xiaomi Smart Home Service Management Strategy

3.1 Cost Lead Strategy

The cost lead (cost advantage) strategy is a strategy to increase customer value by achieving a cost advantage by providing the same products and services at a lower cost than competitors. In other words, cost reduction acts as a factor that can further strengthen the company's competitiveness compared to competitors and weakens the competitiveness of competitors.

(1) Product R&D Stage

Xiaomi Home Service operates the MIUI system through close cooperation with the operating system developer. The MIUI system is a platform where Xiaomi smart home devices are connected to each other, and supports a series of smart devices such as Xiaomi phones, Xiaomi TVs, and Xiaomi routers, and has vast users. Other strategies include accelerating product upgrades and strengthening cooperation with third-party developers. As such, Xiaomi has established itself as a platform operator by expanding its platform connected with various products and services through MIUI. When a smart device is connected to the MiUi account, digital data accumulates in detail on what products users use and how and how many devices are connected to the app. Xiaomi's vision is to build an ecosystem centered on smartphones. With the Xiaomi smartphone as the core, it also launched smart eco-friendly products such as wearable devices, smart home appliances, air purifiers, water purifiers, and electric scooters.

Xiaomi devoted itself to cutting-edge technology and has made great progress as a research and development program to further improve the user experience.

Xiaomi introduced innovative ultra-wideband (UWB) technology. With this technology, users' smartphones can detect signals from nearby smart devices and control them by simply pointing the direction toward them. Xiaomi unveiled '3rd Generation Under-screen Camera Technology' and also introduced '80W Mi Wireless Charging Technology'.

Xiaomi launched Xiaomi Vela, an IoT software platform built on the Nuttx x open source operating system OS, at the annual Mi Developer Conference (MIDC 2020) held in November 2020. This platform was developed with the goal of improving interconnectivity in all everyday scenarios to build an IoT ecosystem.

Xiaomi also introduced the next generation AI assistant'XiaoAi AI Assistant 5.0' at the event, which included full-scenario intelligent collaboration, interactive active intelligence, and customized voice. (customized voice) function.

(2) Supply Chain Management Stage

Xiaomi Smart Home strictly selects and simplifies suppliers. In the case of Xiaomi smart home service, it has a full supplier evaluation system that can verify each product provider. Evaluation indicators for suppliers include product prices, production capacity, business conditions, and delivery prices. Xiaomi outsources most of its electronic products except for core devices. This is a method of discovering venture companies, attracting them to affiliates, and entrusting production.

(3) Service Stage

In order to reduce the cost in the service sector, it is necessary to focus mainly on logistics delivery and after-sales service. In the early days of the business, Xiaomi has developed a distribution structure that sells directly through online sales (mi.com), and has pursued a strategy to generate revenue through the sale of contents and services.

Xiaomi created an online video corner that posted information on product-related problem solving and technical guidance. In the customer service area, various channels were expanded to effectively combine customer marketing and customer service and increase contact with customers. Xiaomi has implemented a strategy to reduce public relations costs by increasing customer engagement and building a fandom. In

addition, Xiaomi has made efforts to improve actual product development and improvement while practicing respect for customer opinions through a customer product development platform where customers can directly post their opinions [10].

3.2 Xiaomi Smart Home Service's Differentiation Strategy

Differentiation strategy is an appropriate strategy when the needs and preferences of buyers are too diverse and can not be satisfied with standardized products, and is particularly useful in the recent business environment where customer needs are diversified. The classification of smart home products is broad and includes various fields such as lighting, TV, kitchen, wearables, and health. Xiaomi needs to continuously develop new smart home products so that it can adapt to the many demands of the market.

In addition, product differences alone are not fully recognized in the market, and the customer service field is important for a business with high technology content, such as smart home.

Meanwhile, Xiaomi Smart Home Service launched the Xiaomi smart hardware product line consisting of smart rice cookers, weight scales, multifunctional switches, hand rings, water purifiers, and sports cameras. In addition, the Xiaomi smart home service has basically completed the Xiaomi smart platform system and the Xiaomi smart eco chain, and must capture opportunities for artificial intelligence (AI) development and target the smart home market faster.

Finally, Xiaomi's customer relationship management strategy must be continuously promoted. Xiaomi attaches great importance to interaction with users, and provides various channels (Weibo Forum) in addition to official customer service to receive feedback from users. And service staff responds quickly to users, and user feedback is good. It can even provide personalized services to customers. Xiaomi values relationships with users.

3.3 Xiaomi Smart Home's AIoT Strategy

'AioT' refers to the combination of AI (Artificial Intelligence) and IoT. AI is a technology that applies human learning abilities such as learning, reasoning, and cognition to computer systems. Therefore, AI can solve the difficulties of humans solving problems [12]. As an artificial intelligence service related to home smart service, there is a smart assistant service. These systems are voice recognition and natural language processing based judgment systems. After making an accurate sentence through speech recognition, the sentence is converted into a command that the system can understand through natural language processing, and the system shows the action desired by the user based on the command [13]. Xiaomi's AIoT business will be developed around smartphones in order to build a smart life ecosystem and will amplify the business area. As intelligent connectivity is more integrated into everyone's lives, Xiaomi's smartphone x AIoT core strategy will reap synergies. Currently, Xiaomi's AIoT strategy is focused on the residential sector, and thanks to the rich product portfolio of eco-chain companies, Xiaomi is choosing a strategy that occupies a key point of home IoT with its own explosive product. Self-employed terminals in the home field are smart TV artificial intelligence speakers and smart routers, all of which are core fields of IoT. Smart TV has the status of home entertainment control center as smart home is an important entrance. Smart speakers are an important handout for the establishment of AI voice interaction. While each Internet and smart hardware giants are already focusing competitively, the router is a natural traffic entrance that is at the heart of home network control. Strategy should be focused on smart home.

4. Conclusion

We investigated a cost lead strategy and a differentiation strategy for Xiaomi smart home service through

comprehensive research. First, in the cost lead strategy, the first thing Xiaomi smart home should do is select suppliers and simplify. The unreasonable number of suppliers and alternative factories has resulted in constant improvement in management costs. And it was not possible to guarantee the quality of parts provided by suppliers and agency factories. So, in the case of Xiaomi smart home, a full supplier evaluation system that can verify each product provider is needed. Evaluation indicators for suppliers include product prices, production capacity, business conditions, and delivery prices.

As the sales volume increases, there are more and more problems, and companies must not only increase the input of resources, but also classify related problems and provide technical guidance. Various channels should be expanded to effectively combine customer marketing and customer service and increase customer satisfaction so that companies can continue to grow.

As a differentiation strategy, it is necessary to continuously invest in design development for Xiaomi smart home products. Xiaomi's smart home supply chain must follow the innovative model of custom production and meet individualization demands. It should focus on securing competitive advantage of smart home products by increasing the company's patented technology and intellectual property protection.

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